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Catching Language

The Standing Challenge of Grammar Writing

edited by

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Preface

Despite a recent surge in awareness of the need to document little-known languages, we know of no other book that explores the manifold issues that face the author of a descriptive grammar. Courses in grammar-writing – as opposed to courses in the analysis of individual domains like phonology, morphology or syntax – are rarely offered, so that most grammar-writers need to develop their craft from scratch. We hope that the contributions in this volume, taken together, will help anyone intending to write a descriptive grammar to clarify their goals and methods along the path to producing the succinct, rigorous and sensitive masterpiece that each of the world's languages deserves. Because the composing of any complex work needs to approach the problem from two angles, that of the writer and that of the reader, we have made sure that both points of view are represented here: most contributors have written descriptive grammars themselves, but some represent grammar users rather than grammar writers. Many, of course, regularly move between the two roles.

We are grateful to the contributors who did not wane in their commitment despite the changing circumstances surrounding the project. We are endebted to Luisa Miceli and Hywel Stoakes, without whom the production could not have been achieved, and to Alice Gaby and Eva Fenwick for compiling the index. The team at Mouton, especially Anke Beck and Birgit Sievert, deserve thanks not only for steering the book to its final production but also for their enduring confidence in the feasibility of the project.

The three of us were fortunate enough to have studied at The Australian National University at a time when it was one of the few places in the world where the norm for a doctoral dissertation was a grammatical description of an undescribed or little described language – a time when what has come to be known as "The ANU School of Grammar Writing" was fashioned. The ANU department was a melting pot of diverse personalities, ideas, methods and practices, all joined to the quest for understanding, recording and analyzing the forms, functions and meanings of a diverse range of languages. We dedicate this volume to all our teachers in this craft.

Contents

Introduction: Catching language

Nicholas Evans and Alan Dench

1. The challenge of grammar-writing

Descriptive grammars are our main vehicle for representing the linguistic structures of the world's 6,000 languages in all their bewildering variety. Each grammar seeks to bring together, in one place, a coherent treatment of how the whole language works, and therefore forms the primary source of information on a given language, consulted by a wide range of users: areal specialists, typologists, formal linguists, historical linguists, and members of the speech communities concerned. The writing of a descriptive grammar is a major intellectual and creative challenge, often taking decades to complete. It calls on the grammarian to balance a respect for the distinctive genius of the language with an awareness of how other languages work, to combine rigour with readability, to depict elegant structural regularities while respecting a corpus of real and sometimes messy material, and to represent the native speaker's competence while recognising the patterns of variation inherent in any speech community.

What does it mean to write a descriptive grammar? The grammarian seeks to capture the essential structural features of a language, and in codifying these presents them to a diverse and critical audience. That audience is primarily the community of linguists, itself quite broad, but it very often also includes language teachers, language learners and native speakers of the language. The grammar writer must be sensitive to this diversity. While letting the language 'tell its own story', and while letting its speakers 'speak for themselves, creating a record of spontaneous speech in natural communicative settings' (Mithun 2001: 53), the grammarian must still locate their description within the broad comparative concerns of linguistic typology and the received traditions of description within a language family. But at the same time they must remain open to new analyses that are either more comprehensive or insightful or less bound by a particular traditional descriptive template. A grammar should also be written with a re-

spect for the constantly evolving questions and concerns of formal linguistic modelling – both in response to the new discoveries about the nature of grammatical phenomena revealed by this enterprise and as a potential proving ground for competing models of human language. Inevitably, given the number of constraints that must be balanced, there is no single ideal solution to this challenge, and lucky is the language where it is possible to consult several first-rate grammars bringing different interests and analytic traditions to bear on the same language.

In catching the elegance and intricacy of the language they are describing, the grammarian must incessantly struggle with what should be in the grammar and what should be left out, of where the boundaries lie between grammar and lexicon, between linguistic description and ethnography, between one linguistic variety and another, and between the current state of the language and its evolving history. The question of when to formulate explanation, and when to stop at description, always lurks close at hand. The boundary between description and prescription can also become blurred, since as soon as one admits speaker acceptability judgments as sources of data alongside a naturalistic corpus these may call forth prescriptive biases. Thus the descriptive grammar becomes a description of speakers' prescriptions as well as of their practice. This is of course particularly complicated for languages like Greek with a long and luminous literary tradition, and it can also be more difficult for native-speaker grammarians to dissociate description from their own prescriptive biases.

These questions appear and reappear, in different forms and applied to different case studies, throughout the book. In this introduction we summarize the issues in more detail referring briefly, as they come up, to relevant chapters with the author's name in brackets.

2. Language description, linguistic typology, and formal modelling

In our view there is a triadic and mutually complementary relationship between *descriptive linguistics* (of which the writing of grammars is but one part), *linguistic typology*, and *formal linguistics* – the subfield of linguistics concerned with developing precise, formalized models of syntax, phonology, semantics and other modules of the grammar. In 2.1. we discuss the relations between these three endeavours, while in 2.2. we show how this integrated view can avoid important conceptual confusions that are unfor-

tunately endemic in the field, particularly regarding the nature of explanation in linguistics.

2.1. Roles and interrelations

2.1.1. Descriptive linguistics

The job of descriptive linguistics is to describe individual languages as perceptively and rigorously as possible, with maximal accountability to a naturalistic corpus of data ideally collected within a broad program of language documentation (Himmelmann 1998) to ensure that the full spectrum of language structures are represented. A naturalistic corpus is typically supplemented by speaker acceptability judgments that can help identify structures that are rare in natural speech, but are nonetheless within the competence of the native speaker (Rice), and can also weed out performance errors from the corpus. Particular 'semi-controlled' elicitation techniques such as stimulus sets may be used to increase the frequency of structures that might otherwise be too rare to be analysed with any real confidence (Hellwig). The chances of representativeness are also increased if the grammarian is a native speaker (Ameka), or takes the time and trouble to become fluent in the target language (Hale 2001, Mosel): the need to communicate on all topics in life is a potent reminder of which aspects of the language the linguist does not yet understand.

An emphasis on systemic integration and on recognizing the overall architecture of a language has dominated linguistics since the structuralist era. The idea of an essential 'genius of a language' drives descriptive grammarians to look for a characteristic overall *Bauplan* that makes sense of the language's particularities in an integrated way.[1] At the same time, grammarians need to keep an open mind on how far traits are in fact free to vary independently, or, following the structuralist dictum, hold each other together:

> linguistic features that are easily thinkable apart from each other, that seem to have no necessary connection in theory, have nevertheless a tendency to cluster or to follow together in the wake of some deep controlling impulse to form (Sapir 1921/1949: 144)

Picking up on such architectonic principles may lead the grammarian to generalize the notions of systematic, paradigm-like organization to new

areas of grammar. Himmelmann's chapter adopts such an approach to the organization of the dimensions of voice, aspect/mood, and potentive vs stative category in Tagalog arguing that this is necessary to detect the polyfunctionality of the prefix *ma-*.

Sensitive descriptions frequently discover quite new phenomena, previously unknown to general linguistics, which feed into the comparative enterprise of linguistic typology and may alert other descriptive linguists to their presence in other languages. A grammarian's appetite for grasping the unknown can be whetted by typological approaches whose 'calculus of possibilities' make explicit what phenomena are unknown to general linguistics (Mel'čuk). At the same time, relatively commonplace notions from general linguistics – e.g. 'subject', 'adjective', 'inflection' etc. – may require revision as their applicability to particular language descriptions is assessed, this feeding back into more careful formulation of their cross-linguistic definitions (Mel'čuk). The typology of word order is a particularly fraught example (LaPolla): typologists are keen to excerpt generalized statements about the principles of constituent order in particular languages, but such gross characterizations as 'SVO' may be completely at odds with the real language-specific principles that are active in, say, Chinese.

Descriptive grammars furnish accessible and well-defined accounts of a language that provide material for formal linguistics to model – a particularly important enterprise when complex interactions across different modules of the grammar are involved. At the same time, grammarians are challenged by formal approaches that raise theoretical stakes by claiming that certain phenomena are ruled out by universal constraints on human language. Autobiographically, Evans can confess that he was pushed to investigate certain aspects of polysynthesis in Bininj Gun-wok (particularly noun incorporation, and the semantics of pronominal prefixes) as a reaction to the claims about deep-level structural parallels between polysynthetic languages and English put forward in Baker (1988, 1995), resulting in a much more detailed description than he would have produced without this goad.

2.1.2. Linguistic typology

Typology is the subfield of linguistics concerned with developing a body of analytically compatible concepts or general conceptual framework valid across all the world's languages (Mel'čuk), through an unending cycle of

induction from individual languages (Croft 2001, Dryer) and deduction from general principles (Mel'čuk). It must integrate the vast library of grammatical descriptions (Zaefferer, Cristofaro) in a way that renders them at least broadly compatible. The difficulties in adjudicating terms across descriptions of different languages are nicely summarized in Dryer's chapter:

> Whenever we employ distinct terms for phenomena in a language, we run the risk of obscuring the similarities with other languages. And whenever we employ familiar terms, we run the risk of obscuring difference.

Describing each language entirely on its own terms is a noble and galvanizing task, but unless grammarians orient their findings to what typologists know about the world's other languages, their grammars can all too easily become obscure, crabbed and solipsistic – such as Whorf's 'brilliant failure' in attempting to apply this principle to Hopi in an extreme and typologically naive form (Hill) – or at best half-veiled in the idiosyncrasies of specific areal or language-family-specific traditions (Amha and Dimmendaal, Chappell).

Typology constantly throws out new questions for descriptive linguists to investigate (Cristofaro) as it identifies parallels and contrasts in how different languages organize newly-discovered phenomena. As an example, see the discussion of complex verbs in Amha and Dimmendaal's chapter, which discuss comparable phenomena that have been named and treated rather differently by distinct descriptive traditions.

Typological approaches to the search for language universals, making use of methodologically rigorous sampling techniques, provide an important empirical base underpinning the search for universals of human language – an enterprise more commonly identified with formal linguistics and the Chomskyan paradigm. Ultimately, formal models of 'universal grammar' must be consistent with, and should elegantly account for, the typological diversity evidenced in the wealth of the world's languages. Conversely, typologists need to be sensitive to new questions that formal models raise about the properties of linguistic phenomena, and to lead these new questions back into their systematic confrontation with linguistic diversity.

2.1.3. Formal linguistics

Formal modelling seeks a more rigorous formulation of linguistic patterning than is generally possible in a normal descriptive grammar. The rigorous model-building that formal systems allow makes it possible to test exhaustively the interactions between the many different rules, of phonology, morphology, syntax, etc., that might be included in the average grammatical description. Descriptive linguists sensitive to this possibility have greatly benefitted from the use of formal theories as tools of discovery. In addition, the formal approaches associated with the generative tradition, in particular, have constantly drawn attention to new phenomena in the last four decades: anaphors, island constraints, different control properties, secondary predicates, WH-movement (Rice) and so on. That so many of these have been discovered relatively recently, in such a well-researched language as English, demonstrates the particular value of detailed formal modelling in showing that descriptive grammarians typically know far less about a particular language than they may have thought.

New representational devices, like phrase structure or metrical trees, or autosegmental representations, have played an important role both in the discovery of new phenomena and in simplifying their treatment in descriptive grammars (Rice). In this way, some elements of formal representation may assist the exposition in a descriptive grammar.

However, experience shows us that, sadly, there is generally an inverse relationship between the adoption in grammars of specific formalisms and their readability by linguists of different schools and at different times. The most enduring and accessible descriptions turn out to be those that employ natural language (rather than a formal representational system) as their descriptive metalanguage. The same inverse relationship applies to parts of descriptions, in the case of grammars that mix informal and formal sections (Dixon 1972, 1977)[2] or volumes (Kibrik 1977a,b).[3] In each of these cases, the informal sections or volumes have stood the test of readability over time better than the formal ones.

The most readable grammars use an informal descriptive metalanguage that draws on the accumulated conceptual system known variously as ‘general comparative grammar’ (Lehmann 1989) or ‘basic linguistic theory’ (Dixon 1997, Dryer), whose cross-linguistic comparability is constantly being assessed and updated by linguistic typology and by formal linguistics. As Dryer’s chapter cautions, formalism should not be confused with precision: ‘the use of formalism does not guarantee precision if the formal-

ism is not defined', and a lack of formalism is not incompatible with precision provided that descriptive terms are given rigorous definitions and rules are formulated carefully.

It is helpful, in seeing how incremental descriptive traditions lead to ever more accurate descriptions of a given language, to distinguish three elements that interact to promote maximal falsifiability: (a) 'formal falsifiability', concerned with assessing the internal consistency of the model of the grammar; (b) 'empirical falsifiability', concerned with testing the adequacy of the model in accounting for the empirical facts of the language, and (c) 'accessibility of formulation', concerned with ensuring that the description is as accessible to as many scholars of the language as possible. A description that fails to employ a terminology comprehensible across schools and times risks being all dressed up with nowhere to go. However falsifiable it might be on mathematical/logical grounds, the audience of comprehending readers is too small to subject it to proper scrutiny against available data on the language. Thus it may never be adequately tested empirically: its inaccessibility renders it 'sociologically unfalsifiable', sidelining it from wider empirical testing. The grammar writer must thus balance the need to address questions arising from current formal investigations or from linguistic typology with the need for the description, written for a wider audience and for posterity, to transcend these concerns.

2.2. Theory, description and explanation

There is some tendency within linguistics to associate the notion of 'theory' with formal models exclusively. However, we argue that the notion of 'theory' is associated with all three parts of the triad described above. A descriptive grammar of a language is a theory of what it is possible to say, with specified meaning(s), in that language (Dryer). Linguistic typology generates theories about the relationship between different parameters of the grammar of a language and of languages, or about the possible range of human languages. Although formal linguistics in the Chomskyan tradition puts forward theories about the nature and organisation of the human language capacity or 'organ', the accompanying formal metalanguage is of course only a theory in a rather limited sense: either in the same sense that a descriptive grammar is a theory, or in the sense that its generative possibili-

ties and limits are supposed to mirror, directly, the exact range of human linguistic diversity.

In fact, the broadest theories on the nature of human language and languages require all three enterprises for their proper formulation and evaluation, along with many other subdisciplines such as historical linguistics, psycholinguistics, pragmatics, and so forth.

Starting from Chomsky's (1957) historically important but conceptually fraught distinction between *descriptive* and *explanatory adequacy*, the generative tradition has tended to promulgate a particular linkage of one class of formal models with the need to connect linguistics to deep general questions about the nature of language and what it implies about human cognitive capacity. This has conflated the jobs of formal modelling and explanation for whatever universals the study of human languages may reveal. The 'explanation' then becomes simply the most elegant model – the model which best accounts for the sanitized, cocooned 'fragment' of a language or set of received grammatical test cases. To the extent that this occurs, generative linguistics neglects wider questions of empirical/descriptive adequacy. It does not, as a matter of course, rigorously test its models against the full complexity of individual languages – presumably a job for descriptive linguistics with regard to specific languages[4] – or assess empirically its claims of language universals against the true diversity of the world's languages – presumably a job for typologists (see Newmeyer 2005).

Of course grammarians of individual languages aspire to descriptive adequacy for their grammars, but they also seek to explain the patterns they find. While this may include an appeal to features attributed to a purported 'Universal Grammar', formulations of this type can explain only a small part of what we recognise as the special characteristics of an individual language. Explanations for patterns in particular languages may lie outside the individual speaker's linguistic competence, in the history of the language, in its cultural matrix, in the wider sociolinguistic context in which the given language is only one of a number of codes in use, or in those aspects of the use of the language which might be described as lying in the realm of 'performance' rather than 'competence.' Moreover, the successful search for explanatory adequacy, because it targets the language capacity in general rather than the particularities of any one language, requires us to synthesize general principles of linguistic organization from the wide variety of linguistic possibilities that the enterprise of linguistic typology lays out for us.

We briefly illustrate this division of labour by discussing the different angles that each of these three enterprises would take on the problem of 'active/stative' languages where the arguments of different classes of intransitive verb behave quite differently in terms of their syntactic properties, in some cases grouping with the patients of bivalent verbs, in others with the agents of bivalent verbs, and possibly exemplifying other behaviours as well (e.g. grouping with the beneficiaries of three-place verbs).

The challenge to the descriptive grammarian is to track this behaviour through as many parts of the grammar as possible, e.g. pronominal agreement, behaviour of various subordinate clause types, binding of quantifiers, interaction with topicalization, and so on. Since such languages are often best described without reference to notions of 'subject' and 'object' (because of the splitting of subject properties) the descriptive grammarian must also develop an appropriate general framework of grammatical relations suitable for the languages (perhaps drawing on particular formal models, or on concepts available in typology). For example, Durie's (1985) analysis of Acehnese makes use of actor and undergoer macro-roles,[5] which are carried through all relevant parts of the description. Additionally, the grammarian must also specify which verbs belong to which class, steering the right course between general principles (e.g. 'non-volitional intransitive verbs have patient-like arguments') and appropriate detailed lexical particulars (a listing of which verbs go in each class).

The challenge to the typologist is to synthesize the similarities and differences across 'role-based', 'active' or split-S languages such as Acehnese, Guaraní, Tsova-Tush and so forth, along the full range of relevant dimensions. How many roles are there? Which construction types are the splits manifest in? What semantic properties can one identify as relevant in affected verbs? How do the properties correlate? Can one find implicational hierarchies that might be revealing of the universal properties of such constructions in human language? As the typologist's syntheses of such questions snowballs over different languages, descriptions of individual languages may be pushed into new territory as individual grammarians realize they had neglected particular issues in their descriptions.

For the formal linguist, the challenge is to develop a representational system that elegantly models the properties described in the descriptive grammar. Should they be captured by a particular type of phrase structure representation (e.g. by representing patient-type intransitives as only having an object at some level, the so-called 'unaccusative' solution), by a formalism employing macro-roles, or by some other method. Because of

their power to model correlated phenomena, debates between different formal models often also throw back questions to the descriptivist to investigate and describe in more detail (e.g. the interaction of different verb classes with floated quantifiers or complement types).

We believe that a proper understanding of these respective domains of linguistic inquiry can only help the field. Our goal in this book, however, is more focussed: to examine issues of descriptive grammar-writing against this broader backdrop.

3. Dimensions of description

3.1. Grammar within the Boasian trilogy

The modern classic division of labour in descriptive linguistics – the so-called 'Boasian trilogy' – envisages a documentary trilogy containing grammar, dictionary and texts, between them amounting to a fairly complete portrait of the language, and integrated so as to be mutually consistent in analysis, terminology, and the variety and range of language they account for. Because the contribution of descriptive grammars to 'catching language' can best be evaluated as part of such a trilogy, it is worth saying a bit more here about each component. We will also return to this in the concluding part of this chapter.

3.1.1. Texts

The text collection seeks to show the language as it really is, and among other things provides a corpus against which the grammar's claims can be tested, and which subsequent linguists may scrutinize for generalizations overlooked by the original grammarian. As Mosel points out in her chapter, the fundamental priority of textual material has not been widely acknowledged or appreciated within academia, resulting in asymmetries both in what gets published and what is acceptable as a doctoral thesis topic.

Though the scientific and documentary value of a rich and varied corpus is beyond dispute, grammarians differ greatly in how they see the relation of corpus to grammar.

At one extreme, a grammar may be almost completely oriented to accounting for all and only the material in the corpus: for a famous example see Heath's Nunggubuyu trilogy – Heath (1981, 1982, 1984).[6] Ideally, this approach entails a sophisticated method for linking statements in the grammar to textual occurrences – something handled in Heath's grammar by long lists of cross-references sometimes occupying pages, but now implementable less clumsily through hypertext linkages. While this orientation to the corpus is not essential for the grammar, it remains the case that a body of textual material provides the evidence against which the claims made by the grammarian can be independently verified, at least within the bounds of the corpus.

The view, however, that grammars should be answerable just to a published corpus seems an extreme position in practical terms. It is common to hear constructions 'on the fly', in ordinary language use, that hardly make it into the traditional corpus, but are nonetheless an important and interesting part of the language. While modern documentary techniques make it easier to capture such data, we should still allow the serendipitous off-record observations of the linguist to count as valid sources of information, as summed up in Sutton's (1978: xvii) observation that 'my main "research tool", if it can be called that, was paying attention'.

Limiting what the grammar should account for to a corpus also overlooks the fact that speakers may have quite clear and revealing judgments (including unacceptability judgements) on complex constructions that rarely if ever appear in a traditional textual corpus. This position has of course been stressed in the generative tradition since the late 1950s, and is persuasively restated here, for the purposes of descriptive grammar-writing, in Rice's chapter on Slave. More pragmatically, time constraints on the careful transcription of data typically mean that linguists can proceed much more productively and interestingly with their overall grammatical analysis if they are not tied at every stage to a transcription and analysis of their complete recorded corpus. This makes for a more 'spiral' view of how documentation and description inform one another (Grinevald 2001: 288) – that is, advances on each of the three broad Boasian fronts interact with and build on advances on the other.

It may also be the case – see Hill's chapter on the American tradition, and Donaldson's (1980) grammar of Ngiyambaa for a nice example – that grammars may reflect a painstakingly curated choice of example sentences for their material, in such a way as to portray the culture of the speech community. A more principled way to do this, that linguists again have

barely begun to contemplate,[7] is through the idea of an 'ethnoencyclopaedia' – a representation of the full spectrum of a speech community's knowledge of the world, as expressed in the mother tongue. Though an immense undertaking, this certainly increases the chance that a textual corpus will successfully sample all relevant constructions in a language.

Recent developments in technology enable audio and video recording of language in use in ways that were not possible in the recent past. Thus the text component of the Boasian trilogy is typically understood as a collection of narrative text – a genre that may be relatively fixed in its performance and is at least more amenable to dictation than the sorts of ordinary conversation we can now record and transcribe. Boas himself was already well aware of the limitations this imposed, though he saw it as a limit on the syntactic elaboration of narrative rather than the availability of dyadic conversation:

> The slowness of dictation that is necessary for recording texts makes it difficult for the narrator to employ that freedom of diction that belongs to the well-told tale, and consequently an unnatural simplicity of syntax prevails in most of the dictated texts. (Boas 1917: 1)

Developments in technology have changed the nature of the corpora we work with. As we accommodate these changes in our descriptive practice, our expectations of the grammars we write and about how the supporting evidence is to be provided will also change. We return to this issue in the final section of this chapter.

3.1.2. Dictionary

The dictionary, the second member of the Boasian trilogy, is normally the part of a linguist's documentation task that takes the longest to reach fruition. Gestation times of forty years or more are not uncommon. This largely reflects the diminishing-returns effect that follows from the statistics of language sampling. Data relevant to most generalizations about grammar surface regularly, so that after a couple of years' work on a language a field linguist generally has the feeling that they have encountered most grammatical patterns needing description – though the greater the scope expected of a grammar, the longer this point takes to reach, and expected coverage is growing all the time (Cristofaro, Rice). On the other hand, some lexical items may only surface once in many years, and only in very

specific conditions, particularly if the lack of equivalents in other languages means the investigator would not naturally think to ask about them A typical example is the Kayardild word *marirrnga* 'single cooked *jardiyali* fish ["month-fish"] buried in sand by camp-fire to ensure return of a new school of fish next evening', which one of us (Evans) only discovered fortuitously after many years of working on the language.

Overall, there has been a relative shifting of effort away from dictionaries and towards grammars in the last half-century. Grinevald (2001) cites a contemporary 10:3:1 ratio in the publishing of grammars, dictionaries and texts. But this was certainly not the case in the nineteenth and early twentieth centuries, as witnessed by the many little-known languages (Mundari and Makassarese being two examples)[8] that have exemplary dictionaries from the first half of the twentieth century but as yet no grammatical description of comparable scope.

In describing little-known languages, moreover, dictionaries suffer from the same 'decoding' bias that affects grammars (on which more below). Overwhelmingly they are one-way bilingual, from the target language to a national or world language (perhaps with a reverse finder-list), rather than monolingual, or symmetrically bilingual. The biasing effects this has on our documentation of these languages have yet to be fully appreciated, but we should certainly expand our notion of ideal documentation to include monolingual and genuinely bilingual dictionaries, as well as thesauruses.

The boundary between lexicon and grammar is a difficult one to draw in a principled way, and will inevitably involve a good deal of overlap. A problem that has long been clear to descriptive grammarians and language teachers, and which is now being more seriously addressed within general linguistics (Pawley and Syder, 1983, Fillmore, Kay and O'Connor, 1988, Kay and Fillmore, 1999, Croft, 2001). For example, in its treatment of clause-level syntax a grammar needs to contain lists of verbs with different valence patterns (see e.g. the long lists in Chapter 15 of Haspelmath's (1993) grammar of Lezgian). At the same time, each corresponding verb in the dictionary must indicate the available valence patterns. A dictionary should also include extensive information about the part of speech of each word, its patterns of government, gender, or the type of complement(s) it may take. The definitions, morphosyntactic behaviour, tests and argumentation for each of these categories, will normally be given in the grammar rather than the dictionary, but the two treatments need to be rigorously compatible and in that sense form part of an integrated larger work.

One example of this interaction comes from the problem of semi-regular 'heterosemy' – the use of signs with the same signifier and related meanings in different syntactic combinations – in languages that recycle verbs as prepositions. If a grammarian writes that 'verbs can also function as prepositions', using examples like *X take knife cut meat* for 'X cuts the meat with a knife' or *X fly come Beijing* for 'X flies to Beijing', is this a problem for the grammar or the lexicon? Balancing generalization with the right level of specificity is a tricky analytic problem, the subject of Enfield's chapter.

Another particularly fraught problem at the boundary of lexicon and grammar involves complex verbal expressions in which a single lexeme manifests as two distinct grammatical words, a light verb (or auxiliary, or function verb) and a second element (illustrated by the phrase type *give a shove*). Though rather peripheral in English, such constructions are crucially important in many languages of Africa, Eurasia, New Guinea and Australia. Two chapters of this book (Schultze-Berndt, Amha and Dimmendaal) are devoted to the problems of description and cross-linguistic comparability that these constructions pose. They show clearly how distinct descriptive traditions are as important as the facts of the individual languages themselves in preventing the development of a genuinely integrated cross-linguistic terminology.

3.1.3. Grammar

Turning our focus back to the grammar, there are many factors that shape the overall conception and organization of a grammatical description: linguistic variety, relation of metalanguage to described language, prescriptive versus descriptive function, audience (linguist, teacher, member of speech community), goal (reference grammar, pedagogical grammar) and direction (analytic, from form to meaning; or synthetic, from meaning to form).

Mosel's chapter investigates these dimensions in detail. In general, the grammars described in this volume are (to use her categories) grammars of spoken vernaculars, where the metalanguage is a language of wider communication (typically a colonial or other world language), and written for linguists to use as reference grammars.[9] We focus on these because we believe that, even where a community or linguist hopes to produce other sorts of grammar (e.g. a monolingual grammar for use in the speech community, or a pedagogical grammar), the particular configuration we have outlined forms the most natural first step in the process of analysing a new

language and helps set up a framework which can be drawn on for other purposes. Two fine examples of reference grammars which succeed in reaching out to a broader audience (particularly the community of native speakers) through judicious structuring and careful explanation of terminology are Bauer's (1997) grammar of Maori and Valentine's (2002) grammar of Nishnaabemwin.

Within the broad characterization given above, one asymmetry is particularly important: that between analytic / decoding / semasiological / form-based grammars, that take as their starting point forms or constructions in the target language, and synthetic / encoding / onomasiological / meaning-based grammars, that start from particular meaning categories (e.g. tense, or space, or causality) and show how grammars – in conjunction with the lexicon, where necessary – allow meanings within these fields to be expressed.

The ideal of having both types of grammar for any given language goes back to Gabelentz (1891), and Mosel's chapter discusses the history of this bidirectional conception, and the problems faced in seeking to implement it. But for many reasons comprehensive meaning-based grammars have hardly ever been produced, with the honourable exception of Leech and Svartvik's (1975) 'communicative grammar of English', although some descriptive grammars – such as Seiler (1977) on Cahuilla or Wilkins (1989) on Mparntwe Arrernte – contain a sample chapter or chapters written from a meaning-based perspective, and there have been other interesting experiments in grammatical organization, such as Newman's 'encyclopaedic reference grammar' of Hausa, that includes some entries based on form and others based on meaning. Despite the difficulties in executing this ideal, however, we believe this should remain an important descriptive goal. Arguably only in taking a meaning-to-form based approach to grammatical analysis can we hope to model the process by which a speaker of the language encodes their thoughts in speech. Additionally, many of the questions asked by linguistic typology approach language comparison from the standpoint of meaning or function rather than form (Cristofaro, Zaefferer).

One of the crucial problems faced in writing synthetic grammars is that the techniques of structural linguistics have always been more successful at dealing with form than with meaning. Form is also something that is easier for non-native speakers to grasp from an early stage of research than meaning is, which makes the analytic approach sit more naturally with the limited knowledge of non-native speaker linguists, who parallel other second language learners in being far more advanced in their passive than their

active grasp of the language. The production of good meaning-based grammars is thus an area where the involvement of native-speaker linguists is particularly important. Ameka's chapter discusses the difference between his facility in generating examples that require encoding ability, when working on Ewe as a native-speaker linguist and on Likpe as a non-native speaker linguist.[10]

Recent advances in semantic fieldwork, however, have begun to give us better techniques for tackling these problems: see Hellwig's chapter for an application of 'field semantic' techniques to the description of location, posture and aspect in Goemai. Further, developments in hypertext (Zaefferer) lay the technical foundation for the eventual construction of electronic grammars where the reader can access material from either an analytic or a synthetic perspective, though this still remains a dream rather than a reality.

3.2. Connecting with context; culture, history and heterogeneity

In addition to delineation problems between grammar and dictionary, grammar-writers face other tricky questions about where to draw the boundaries of their description. However much 'an inclusive scope may ... be at odds with professional pressures to build up an elegant, concise and typologically unified grammatical construct' (Diller), this entails a sacrifice of realism that most grammarians are unwilling to make, given that '[f]ield research ... cannot find either a homogenous speech community or an ideal speaker-hearer' (Heeschen 1998: 39). Within the history of linguistics, one current that runs from Paṇini to Chomsky has striven for formal elegance by treating language as an automous entity, by holding 'the view that all connections between language and non-linguistic matters can be disregarded'[11] (Anttila 1973: 177). Pulling against this is another current, associated traditionally with the philolological quest to understand and interpret language in its cultural context, that aims 'to capture precisely those ways in which language is linked to knowledge of the world' (Hill 1989: 119), and which heeds Hockett's dictum that

> Linguistics without anthropology is sterile, anthropology without linguistics is blind. (Hockett 1973: 675)

Linguists sympathetic to this more ethnographic and philological approach need to confront three particularly important boundary questions in

determining the scope of their descriptions. What are the boundaries between language and other aspects of culture (3.2.1)? How does one handle the relationship between the contemporary synchronic state and previous *états de langue* (3.2.2)? And how does one steer a course between describing the variety representing an idealized average speaker (of a particular lectal variety) and the complex range of varieties considered by the speech community, or the linguist, to function as an integrated system?[12] The diglossia resulting from certain types of language contact may result in situations like that described in Diller's chapter on Thai, where:

> higher and lower registers look somewhat different typologically. Common Thai is mainly monosyllabic and isolating, forming compounds on a head-first principle. … [R]oyal Thai is highly polysyllabic and derivationally agglutinating, often forming head-final compounds.

The three boundary questions mentioned above, in their turn, grade into one another. A prestige variety of a language may reflect an earlier historical reality (Joseph), or the influence of another prestige language, perhaps in a locally-modified version (Diller). Cross-dialectal variation may provide information about the path of language change. Or cultural factors may shape the interpretation of lectal variation,[13] such as the famous case of 'moiety lects' in Arnhem Land where the variation is geographical and temporal (one lectal variant being more conservative), but is emically interpreted in cultural terms (with variants linked to culturally-construed patrimoieties).

In each of these cases, there is a tension between autonomist, essentialist approaches, which focus on an idealized homogenous variant with the goal of developing the most elegant and concise account, and more inclusive approaches which admit variation to the description. The reasons for taking the latter course may include a wish to depict realistically the semiotics of the full speech community, or to document variation which may in turn give a better understanding of the underlying logic of the linguistic systems under analysis, or provide materials for analysing change in progress, including evidence of on-going processes of language contact. In general, autonomist approaches treat grammar as (idealized) individual knowledge, and language as a distinct modular system, while non-autonomist approaches treat language as a social phenomenon, and problematize the separation of language from other elements of culture.

3.2.1. Grammar and culture

Despite the genesis of the Boas-Sapir descriptive tradition in anthropology, and a widespread perception that this represented an ideal of culturally-embedded language description, grammar-writing in this tradition in fact paid far less attention to the interactions between grammatical categories and culture-specific cognitive categories than is normally believed (Hill). To some extent we might see this as an outcome of the Boasian trilogy and the division of labour it plots. The embedding of language in culture is made evident in the selection of culturally important texts to illustrate the narrative genius of the language. The dictionary too makes clear that language and culture are two sides of the one coin. Yet there are also many areas of grammar, such as the encoding of kinship, evidentiality, or intentionality, where culture-specific categories intrude (Enfield 2002), and there are good reasons to admit such categories into grammar-writing.

Firstly, as Hill points out in her chapter, if we are 'to base our case for documenting and developing threatened languages largely on a claim that they and their speakers contribute irreproducible understandings to the total store of human knowledge, we must do far more work of this type'.

Secondly, revival of interest in the Humboldt-Sapir-Whorf question of the nature of the relationship between language and thought (see e.g. Levinson 2001, Lucy 1997) promotes culture-specific categories to important test-cases that can be used as independent variables in examining the influence of language on cognition.

Thirdly, the recognition of the importance of complex culture-specific categories in grammar is directly relevant to debates about the extent to which fundamental grammatical categories are innate and to what extent these can be mastered by learning children without preexisting concepts to hook grammatical categories to. The more the categories found in a given grammar are culture-specific – such as the kinship-sensitive pronoun terms and derivational verb forms based on generational moieties common in Australian languages (see Dench 1982, 1987 for complex examples) – the less likely it is that the child brings innate, preexisting knowledge of them to the task of learning their language.

Fourthly, the existence of such culture-specific categories provides evidence directly relevant to debates on the relative influence of universal vs culture-specific factors on the development of linguistic structures, as well as the question of how far language change is completely blind and how far

it responds to linguistic ideologies, albeit in unpredictable ways (Silverstein 1985, Simpson 2002, Evans 2003a).

3.2.2. Grammar and history

The Saussurean prohibition against mixing synchrony and diachrony, bolstered by the Chomskyan argument that the language-learning child must construct their grammar without reference to anything but synchronic facts, have contributed to a view that grammars should give purely synchronic accounts of the languages they describe.

No descriptive grammarian today would want to include diachrony to the extent found in some nineteenth century grammars that appear almost entirely interested in the historical origins of grammatical formatives – or, conversely, only interested in formatives that descend from elements known in older structures. However, there are good reasons to include diachronic discussions within a grammatical description, as discussed at greater length in the chapters by Rankin, Joseph and Chappell.

First, it has been said that every language is something of a ruin, and often the best explanation that can be provided for a particular grammatical pattern is a historical one. Rankin makes this case very clearly in his chapter. A satisfying description generally succeeds in providing a natural characterization of the conditions or environments across which different allomorphs are distributed. Accounts that fail to do this, and appeal to 'diacritic' or unmotivated rote-based conditioning, are normally viewed as unsatisfactory, or as having failed to solve the descriptive problem. Rankin discusses a Siouan case study of verb-stem ablaut for which no satisfactory synchronic account had been found by generations of scholars, and where diachronic evidence shows why the seemingly unsatisfactory rote-based account is in fact the correct one, reflecting the outcome of a particular sequence of analogical changes that has destroyed the original phonological basis for the alternation. Explanations for patterns in the grammar, then, cannot always be found in language universals, and instead often lie in the idiosyncratic history of the particular language.

Second, as soon as one tries to represent lectal diversity in a speech community, the possibility arises that lectal differences are due to the coexistence of innovative forms or structures with older varieties maintained in literate or high registers. Joseph's chapter discusses Greek as an extreme case of this, where the *katharevousa* variety results from a complex process

of consciously archaizing movements at various points in the language's history importing norms from earlier classical stages. It can, of course, be difficult to draw the exact boundaries of what counts as an archaic register of the contemporary language, as opposed to an earlier variety that no longer exerts influence. But it should not automatically be assumed that older varieties are mere fossils, and Joseph gives as an example the modern importation of the inflected pronoun strategy for forming relative clauses from the learned *katharevousa* variety into standard modern Greek usage.

Apart from the particular value of taking prestige-variety sediments from older varieties into account in explaining synchronic variation in grammatical rules, there are broader implications for our understanding of language learning. Even if the young child only has access to what they hear of the synchronic state, it is naïve to assume that older children and even adults, as part of the enculturation process, are not influenced by overt education which may give a second track of transmission. How far and in what circumstances the more conscious schooling of older learners impacts on language structure remains an open question, and grammars that bring such cases to our attention provide valuable case studies. It is also wrong to represent more conscious language learning only as a phenomenon of large literate societies, since many non-literate societies also have means (such as the later learning of oratorical registers) for inculcating material from earlier varieties of the language.

There is a final reason to include diachronic material in grammars. Though tastes vary in how far grammars should discuss alternative analyses of the data presented, as opposed to merely stipulating a single satisfactory analysis, there are many places where it makes sense to consider competing analyses of particular phenomena, particularly when the grammarian is proposing an analysis that seems unusual or deviant compared to the first-blush analysis that an educated linguistic reader would assume for the data, or to analyses that are widely accepted for seemingly comparable constructions in other languages. It is often the case that a prima-facie analysis being rejected by the grammarian does in fact well describe an earlier phase of the language, but that subsequent changes in the language's organization leave this analysis as unsatisfactory. Treating diachronic change and argumentation about the best analysis together can simultaneously help convey the special nature of the phenomenon under discussion, and make the discussion of analytic alternatives more lively and less casuistical than it would otherwise be.[14]

3.2.3. Dealing with lectal variation

Virtually all speech communities contain at least some lectal variation so grammarians need to confront the fact of variation, except in the special case of languages based on a single speaker, where language death shrinks lectal variation to something like Chomsky's (1965: 3) 'ideal speaker-listener' in a 'completely homogeneous speech-community'. How to address the issue of lectal variation in a principled way, and how far to cast the descriptive net, is a difficult problem to which grammarians adopt widely-varying solutions, ranging from grammars focussing on just a single variety (e.g. 'grammar of the X dialect of Y'), to pan-dialectal or diasystemic grammars. Variation, of course, may reflect many factors – levels of formality (including oratory, learned registers and so forth), geographical variation, factors of gender, ethnicity or class, other constructed cultural categories like moieties (Morphy 1977) or clans (Sutton 1978), interpersonal relations (e.g. kin relations), or features of the referent or speaker (such as for the Royal Thai discussed in Diller's chapter).

Important foundations towards the development of polylectal grammars were laid by Fries and Pike's (1949) study of coexistent phonemic systems and Klima's (1964) transition rules linking different varieties derived from a single underlying structure. Weinreich's (1954) seminal article on diasystems showed how a single system can be discovered under dialect variants and so demonstrated that structuralist principles need not be restricted to a single variety. Labov's work shows that it is the speech community rather than the individual speaker where one can best find systematicity in variation, thus moving the goal of a grammarian who takes variation seriously towards Saussure's socially-based langue and away from Chomsky's individual-based competence.

Particularly within studies of creole continua, there have been attempts to construct polylectal grammars consisting of families of rules combining in highly constrained ways, and subject to implications as one moves up and down the spectrum from acrolect to basilect (DeCamp 1971, Bailey 1973). Despite these theoretical advances, the field has been slow to move beyond the sketching of polylectal grammar fragments to the production of complete grammatical descriptions. We have not yet moved as far as we might wish[15] from the situation described by Derek Bickerton in 1973:

> [T]hose who would write polylectal grammars are immediately faced with a major difficulty. Since extant grammars are all monolectal, they can have only the vaguest notions as to what are the properties and structure of a

> polylectal grammar, and which of a number of possible forms it might best take. (Bickerton 1973: 18)

Despite the clear challenges to be faced in actually writing such a grammar, there are many reasons to see it as a desirable goal. Taking the repertoire of a multi-lectal speech community as the relevant object for description can help to make sense of patterns which might otherwise make little sense in individual lects. For example, pan-lectal comparison in the Bininj Gun-wok dialect chain (Evans 2003b) allows a better understanding of the processes of neutralization that create apparent asymmetries in some dialects in the systems of gender agreement on the one hand, and verbal agreement for subject and object agreement on the other. Thus, polylectal grammars may play a crucial rule in helping us to understand transitions between different synchronic states. Studies of creole continua, or of diglossic systems like Thai (Diller), are crucial in showing us how the effects of language contact are played out through lectal variation

Though detailed dialectological work properly belongs elswhere than in a grammatical description, there are places where a grammatical description that succinctly ties together cross-dialectal evidence can take advantage of 'bountiful nature [which] has given us three great linguistic laboratories: diachronic, synchronic and dialectology' Moulton (1969: 460). A nice illustration of this is Hyman and Tadadjeu's (1976) demonstration of how different dialects of the Bamileke language illuminate the emergence of 'floating tone': in conservative dialects, all tones are linked to segments, while more innovative dialects have lost the segmental material but conserve the tones previously linked to them. As Hyman (2001: 26) puts it:

> it's harder for a group of dialects to hide their "stories" ... [G]et related languages. They will tell related stories.

Language change is the point at which function shapes and reshapes structure, and thus the locus for recasting the question 'why are languages the way they are' as 'what forces cause languages to change into what they are'. Because variation – whether across dialects, individuals, or styles – is the most sensitive measure of change in progress, and in fact it is widely assumed that most language changes pass through a phase where two states are copresent in the form of variation, documenting variation is an important way that grammatical descriptions ultimately contribute to explanations about the nature of language.

Another advantage of studying multilectal systems is that one lect or register may reveal insights about semantic generalizations that remain covert in another lect. A classic employment of this method is Dixon's

(1971) study of the 'mother-in-law' variety of Dyirbal, and similar techniques applied to Royal Thai are discussed in Diller's chapter. Though the many-to-one relations are most typically lexical, these take on special significance when investigating verb classes, which as we saw above is a particularly important area of intersection between grammar and lexicon. A classic example is the evidence presented in Hale (1971), on the basis of work with lexical correspondences between ordinary and initiation registers, for the emic status of perception verbs as a superordinate category in Warlpiri.

Perhaps most importantly of all, expanding one's descriptive brief to the broader speech community can make for more realistic modelling of what individual linguistic choices mean, since the grammatical choices made by speakers are designed not just to convey propositional meaning, but to convey social meaning as well, even though individual competence is 'a smaller subset of the polylectal grid for productive competence, and a larger one for receptive competence' (Mühlhäusler 1992). Similar points can be made for knowledge of varieties within a dialect continuum. Taking a polylectal perspective thus offers the promise of modelling, ultimately, individual repertoires; how far individuals can vary in their knowledge of different varieties, what the relations are between these varieties, and what are the sociolinguistic categories that get reflected in these varieties.

4. The future of grammar-writing

One part of the challenge of grammar writing has always lain in presenting a coherent and reasonably comprehensive description of a complex linguistic system within the limitations of a published volume. The other part of the challenge, as we have seen, lies in adjusting to changes in the field of linguistics and our evolving understanding of the world's languages and of the human language capability, and in the nature of the available corpora and the media in which our results might be presented. In this section we discuss three issues that are likely to figure increasingly in the practice of future grammarians.

4.1. Rethinking the Boasian trilogy

Recent advances in recording technology and digital analysis have implications for our conception of 'corpus of data'. We suggested in 3.1.1 that the traditional text collection, amongst its functions, provides data against which analyses presented in the grammar can be verified. That the traditional corpus consists largely of texts is in many respects a reflection of what have been until recently clear limitations in recording technology. Field recordings have consisted of dictated vocabulary, sentences and texts in written form with a few selected audio recordings, again typically of narrative texts. Only in the last decade or two has it become standard to make audio recordings of all or most elicitation sessions held in remote locations. Today the relative ease of video as well as audio recording makes the more systematic collection of conversational data and of authentic language use a real possibility for field linguists. This makes possible the successful and detailed analysis of gesture, turn taking cues in gaze and kinesthetics, external context etc., in ways that were not previously available except in specially arranged sessions. At the same time, software packages allow acoustic phonetic tagging and analysis of recorded materials that had until recently been possible only after painstaking work in specialised, and expensive, laboratories.

Digital audio and video recording, portable storage, and the development of software enabling the tagging, management and analysis of collected data raises the stakes for corpus collections. Our traditional published text collection consisted of a few hundred pages of narrative text with interlinear glosses, free translation and explanatory notes, but the modern published corpus may potentially consist of digital audio recordings of data collection sessions, some with accompanying video, and linked to a range of transcriptions representing different kinds and levels of analysis. Where the published text collection once served as the grounding evidence for a linguistic analysis, the digital archive will come increasingly to fill that role.

Recently, a number of writers (most clearly Himmelmann 1998, 2006, and Lehmann n.d.) have made a strong case for a distinction to be drawn between descriptive linguistics and documentary linguistics, with the latter having an agenda independent of that of the former. Traditionally, the nature of the corpus collected for living languages has been determined by the concerns of descriptive linguistics. But this is clearly changing. The need to define a separate endeavour of documentary linguistics comes not only

from the recognition of the severe limitations of a documentation program dependent on the concerns of the descriptive linguist, but also because the opportunities for broader documentation, given new technology, have increased markedly and there is at the same time a critical need for such broad documentation in the face of mass language extinction. What does this mean for the grammar writer?

We should anticipate that the expansion of the corpus to include real language use will effect a corresponding expansion in the grammar. Where most grammars have, to date, concentrated on constructions found in narrative – often complex sentence constructions more likely to surface in practiced and refined traditional narrative art – we can anticipate a shift in balance towards the linguistic forms more often found in naturally occurring everyday dialogue, and which have been more often emphasized in grammars written for pedagogical purposes. This shift is also consistent with some shifts in emphasis within the field of linguistics as a whole, as we discuss further below, and is likely to nudge a 'naturalistic turn' in the sort of data grammarians focus on accounting for.

The collection of narrative texts and the dictionary traditionally accompanying the grammar will instead or as well be presented as a collection of digital files including written versions, audio and sometimes video recordings. Of course, with current technology, the production of such material on disk is cheaper for a publisher, and for the purchaser, than an accompanying volume of texts and we can expect that the increasing use of electronic corpora will increasingly fuel demand for the grammatical description also to be presented as a hypertext document – more on this below.

Technological optimists should not forget, however, that the increased speed of producing digitised recordings is unlikely to be parallelled by a significant acceleration in how long it takes field linguists to produce the sorts of careful translations and cross-questioning of semantic issues that are the hallmark of a well curated text collection (see Evans and Sasse 2003). This will limit the proportion of collected materials that can be made available with full annotations. Rather than a hugely increased bulk of carefully annotated texts, then, what the new technologies are more likely to deliver us is a set of Russian dolls – a core of well-analysed material that may not greatly exceed in quantity that produced by more traditional methods, with an expanded set of roughly transcribed material and a huge amount of raw data without significant transcription or translation.

As documentary linguistics develops an agenda distinct from that of descriptive linguistics the relationship between the grammar and the published corpus, at least in the case of minority languages, will also change. A grammatical description grounded in a corpus collected for the purposes of writing that grammar is a very different thing from a grammar grounded ultimately in a corpus collected for a range of sometimes very different purposes. It will be necessary for the grammarian to define much more clearly what the grammar is a description of, what parts of the corpus it relates to, and of the available language materials what may have been selectively ignored, or which have not yet been analysed to the point where they can be used to test the grammar's claims.

4.2. Directions in the wider field

The impacts of a technology that allows us to build and investigate richer corpora are found not only in the study of minority languages. Where the focus of formal linguistics in much of the past 40 years has been on the competence of the idealized native speaker-hearer and through this the characterization of the innate human language capacity, in something of a 'performance turn' there has been a growing understanding of the need to build models of language use, processing and production, and many of these models are highly formalized. In part, this is a response to developments in natural language processing and the practical concerns of managing effective machine-human language interaction. To know how to build a machine that uses language in a human-like way, you first need to know how humans use language. Investigation in this domain relies much more on large and representative corpora than on categorical judgments about the intuitive grammaticality of what may in practice be vanishingly rare constructions.

The shift in formal focus can be seen perhaps most clearly in recent developments in formal semantics.[16] Where syntax has traditionally sought to model an autonomous component regulating the structure of linguistic strings, semantics, being concerned with the construction and apprehension of meaning, seeks to describe how such meanings are mapped onto linguistic forms. This concern has led in recent times to an increased interest in the formal description of linguistic objects larger than the sentence. Thus we see the development of formal accounts of discourse and conversation that seek to show not only how such larger units of language cohere, but how

meaning is constructed dynamically (Kamp and Reyle, 1993, Asher and Lascarides, 2003). Not surprisingly, we also see the development of 'functional' formal models of syntax which seek to take account of sentence production and processing in real time (e.g. Kempson, Cann and Marten, 2005).

Discourse oriented approaches have an inherent emphasis on the parsing and interpretation carried out by native hearers, rather than on the sentence generating competence of native speakers. It is only natural that such approaches should favour the collection of naturalistic conversation, over the formal elicitation of grammaticality judgements. Perhaps as a result of this turn towards naturalistic data and a concern to model human language interaction, those working within formal frameworks are looking beyond the traditional fragments of European language data against which many formal accounts of discourse and conversation have been traditionally tested. The successful transmission of meaning is dependent not only on (presumed) universals of human cognitive processing – a reliance on pragmatic inference is a fact of all human communication – but also on the structure of the linguistic code. It has long been recognized that the structure of the code is a function of the uses to which it is put: 'grammars do best what speakers do most' (Du Bois, 1985). To the extent that these functions are universal we can anticipate the identification of formal linguistic universals, but to discover these we need to look at a wide diversity of linguistic systems.

Thus, we might anticipate an increasing engagement between discourse and performance oriented branches of formal linguistics, descriptive grammars, and linguistic typology. The descriptive frameworks preferred by typologists have tended towards the functional end of what has often been described as a formal/functional split in the field – so called functional approaches generally providing a richer and more satisfying account of the range of possible linguistic systems than those in the mainstream generative traditions (and see Newmeyer 2005). However, as those engaged in formal modeling increasingly seek to account for performance effects both in language use and in the structure of the code, the formalist/functionalist dichotomy begins to dissolve.

What does this mean for the grammar writer? The new study of generative syntax in the 1960s and 1970s gave grammarians new questions to ask (Rice), new tools with which to analyze languages and an imperative to provide more detailed descriptions of clausal and interclausal syntax. In the same way, we can expect the development of rigorous formal models of

connected discourse to provide us with a host of new questions, with new tools for analysis, a range of possible frameworks for description, and a clear expectation that grammars include detailed descriptions of discourse across a range of genres. For example, early Discourse Representation Theory arose in part out of attempts to describe the semantics of particular tenses. Thus Kamp and Rohrer's (1983) account of the differences between the French passé simple and imparfait places a great deal of importance on the semantic relationship between sentences containing these tenses and the sentences preceding them. If the semantics of tense necessarily involves reference to discourse context – and Discourse Representation Theory makes a strong case for this – then there are clear implications for grammar writing. The semantics of one of the most fundamental sets of morphological categories, namely verbal TAM inflection, cannot be adequately described without reference to a well described supra-sentential discourse context. Formal approaches to describing such discourse contexts can then provide us with questions we might ask of any language, tools with which to ask, and a possible vocabulary with which to present the answers.

In the relatively recent past our syntactic descriptions have been mainly concerned to reveal a native speaker's competence. They have focused on what strings it is possible to generate, and what it is not possible to generate, often illustrating the argument with examples constructed especially for eliciting grammaticality judgments. In describing particular forms and constructions, we must now pay much greater attention to the frequency with which these occur in particular genres, the range of interpretations possible, and in general terms, as already mentioned, we need to provide a clear characterization of the corpus, or fragment of a corpus, from which the analysis is derived. Grammars will expand to include descriptions of different discourse genres as a matter of course, including accounts of conversational structure, of variability in the corpus and variation in usage.

4.3. New forms of grammars

As we have noted a number of times in the preceding discussions, and as is treated in detail in Zaefferer's chapter, our new technology makes possible alternative forms for published grammars – grammatical descriptions that embrace the new media, integrate audio-visual material and that are less encumbered by the inherent linearity of simple written text. We have suggested here that such grammars are probably inevitable given the develop-

ment of enriched digital corpora, but along with the benefits they promise in flexibility there are challenges to be faced.

Hypertext grammars can provide a wealth of possible arrangements of information about the grammar, ideally allowing users to select different degrees of detail and to navigate the description via any number of different paths. Given that digital files are inexpensive to update compared with grammars published in book form, they also provide a degree of temporal flexibility.

There are two obvious and clearly related practical challenges arising from this high level of flexibility – version control and internal analytical consistency.

The problem of version control is typically not one faced by the grammarian, though it is understood by any lexicographer. The dictionary of a language is never finished: there are always new words to add, new meanings to describe for words already listed, and reanalyses of previously listed forms to be presented. We expect dictionaries to be incomplete, to lag behind actual language usage, and to eventually appear in new editions. Our expectations of grammars, have been quite different – we expect relatively definitive statements of what it means to know and speak the language in question. For those grammarians engaged in describing a small-community language they will outlive, this has taken an extreme form, since it may be that no other linguist will have the chance to engage directly with the language intensively enough to reevaluate their description of how the language works.

The inherent flexibility of the hypertext grammar may encourage us to think of grammars as works in progress in much the same way as we think of dictionaries. But there is a critical difference between the two. Where it is possible within limits simply to add to a dictionary without major revisions to what already exists, and without compromising the consistency of the analyses contained within, this is almost never possible for a grammar. Any reanalysis of a subsystem of the grammar must be checked against other parts of the grammar to ensure that the larger analysis remains coherent. When writing grammars of minority languages, we have typically understood that there will be some stage at which the grammar is ‘finished’ and the analysis is expected to be consistent at just that point in time. This consistency extends to the parses provided for the accompanying texts and for the category labels and other analyses contained within the accompanying dictionary. That consistency must derive from the deepest characteristics of the language, is well illustrated by languages like Tagalog or Chi-

nese (see chapters by Himmelmann, Chappell and LaPolla) whose radically different organizing principles have meant that far-reaching rethinkings of descriptive approach have been necessary in the course of reaching satisfying grammars of these languages. Typically this has meant that new approaches to describing such languages are undertaken as radically new undertakings by different scholars, rather than mere updatings of existing structures.

The organizational and temporal flexibility of the hypertext grammar/multimedia corpus makes managing consistency in grammars a much more challenging prospect than it is in dictionaries. On the one hand there is a danger of inconsistency, on the other there is a danger that a definitive grammatical description associated with a particular corpus of data may never be completed.

A fully developed and evolving hypertext grammatical description may represent not only the fruits of detailed linguistic investigation of a corpus but also a high-level analytical key to that (perhaps similarly evolving) corpus. As digital corpora and their annotations become more complex and their organization more sophisticated, the boundary between the description and the documentation may become increasingly blurred. Thus where the traditional corpus, as language documentation, may have been defined by the descriptive agenda, there is the possibility that hypertext grammars linked to multi-modal corpora may come to be shaped instead by the documentary enterprise. For grammarians, there will be challenges and choices to make here. While the grammatical analyses must remain true to the corpus, there will be a challenge in maintaining the autonomy of the grammar as a description of the language. With too little autonomy, the various linguistic analyses of diverse subparts of the corpus may not cohere into a consistent description.

The chapters of this volume make clear the complexity of the task of grammar writing and the diversity of skills required of the grammar writer. We hope that those reading this book will not only develop an enriched appreciation of the grammarian's craft but will be inspired to make their own contributions to this important and constantly challenging field of linguistic investigation.[17]

Notes

1. We regard it as an open question as to how successful grammars have been that try and build the whole description around a few organizing principles, or whether they should confine such remarks to an initial orienting preface – such as the interesting discussion in the introduction to Seiler's (1977) Cahuilla grammar of the principles of 'the preponderance of the descriptive over the labelling principle', 'syntactic compression', and 'weak centralisation' – or treat them apart from the grammar proper, as in Heath's (1986) article on non-configurationality in Nunggubuyu (which does a lot to unlock the difficulties of his rather forbidding 1984 grammatical description), or Launey's (1994) thoughtful and revealing essay on omnipredicativity as an organising principle in Nahuatl.
2. In his classic grammars of Dyirbal (Dixon 1972) and Yidiny (Dixon 1977), Dixon deliberately split the presentation between a more basic descriptive part and a separate chapter on syntax written within a particular formal framework (basically an adaptation of Aspects-style generative grammar). Of this first such attempt, he wrote frankly (Dixon 1972: 125): 'This chapter attempts to interpret, generalise from, and explain the basic facts [presented in previous chapters – AD and NE]; the discussion is thus at a higher level of abstraction, and is more speculative and arguable'.
3. In a variant of the Boasian trilogy, Kibrik split his masterful description of Archi into a basically descriptive 'taxonomic grammar' (Kibrik 1977a) and a 'dynamic grammar' (Kibrik 1977b) written within the theoretical framework of 'Meaning<-->Text' linguistics.
4. See Gross (1979) and Sadock (1996) for two particularly trenchant critiques of the answerability to descriptive precision within the generative tradition.
5. Durie's notions of actor and undergoer macro-roles, of course, derive from a particular theory, Foley and Van Valin's (1984) Role and Reference Grammar, that lies somewhere between a formalized theory and a typologically-motivated theory of generalizable linguistic categories. However, since his grammar is in other respects not couched within any particular formal framework, we use it to illustrate the approach of a descriptive grammarian rather than of a formal linguist.
6. Though corpus material was in fact supplemented by elicitation to ensure that complex paradigms were filled out: particularly in morphologically complex languages with large irregular paradigms a purely corpus-based approach is almost certain to end up with substantial gaps.
7. Though ironically perhaps the closest thing we have to an ethnoencyclopaedia was produced in the sixteenth century by Fray Bernadino de Sahagún, arguably the father of modern descriptive linguistics as applied to exotic languages. This takes the form of an enormous and comprehensive bilingual text collec-

tion portraying virtually every aspect of traditional Aztec life, published around 1557 (see Dibble and Anderson 1970, Sahagún 1905). This collaborative work drew on a large team of trained native-speaker linguists working with Sahagún to gather material at a large number of sites, as well as employing older Nahuatl artists as illustrators.

8. For Mundari, see the epochal sixteen-volume Encyclopaedia Mundarica (effectively a dictionary with encyclopaedic excursuses) by Hoffman and Van Emelen (1930–1979), and for Makassarese, the magnificent dictionary by Cense (1979, though based on work carried out much earlier). It is only more recently that we have had anything like a reasonable grammatical description of either language (Osada 1992, Jukes forthcoming).
9. This corresponds closely to Lehmann's (1980: 29) idea of a *linguistische Grammatik* (linguistic grammar), which he defines as 'eine Grammatik, die dem durchschnittlich informierten linguistischen Fachgenossen Aufschluß über das Funktioneren einer Sprache auf allen Ebenen ihres Systems erteilen soll. Sie muß ihm den Vergleich dieser Sprache mit anderen ermöglichen'. (A grammar, which should provide the average informed linguistic colleague information about the functioning of a language at all levels of its system, and which should enable him to make comparisons of this language with others).
10. This point is also well made by Lehmann (1980: 31): 'Zum zweiten kann man die analytische Betrachtung der Sprachfakten einen Zugang "von außen", die synthetische einen Zugang "von innen" nennen. Die Bedeutung dieser Ausdrücke gewinnt praktische Anschaulichkeit, wenn man an linguistische Beschreibungsansätze denkt: den Zugang von außen nimmt der Linguist, der die Objektsprache noch nicht kennt und – gleichsam ganz Hörer – zuerst eine Analyse machen muß; den Zugang von innen nimmt der Linguist, der – gleichsam ganz Sprecher – die Objektsprache beherrscht und ihre Ausdrücke daher synthetisieren kann.' (Secondly we can term the analytic treatment of linguistic facts an approach 'from outside', the synthetic treatment an approach 'from inside'. The practical significance of these expressions becomes clearer, when one thinks of principles of linguistic description: the approach from outside is that taken by a linguist who does not yet know the object language and, like the hearer, must first carry out an analysis, while the approach from inside is that taken by a linguist who, like the speaker, has a mastery of the object language and can therefore synthesize its expressions'.)
11. Original: 'daß man alle Zusammenhänge von Sprache mit Nicht-Sprachlichem ausklammern könne' (Anttila 1973: 177).
12. In situations of language contact or mixed languages these may include partially integrated elements of one or more other languages. See Igla (1996) for a description of a Romani dialect where there is a particularly acute problem of dealing with far-reaching integration of other languages, here Turkish and Greek.

13. They may also affect local interpretations of individual difference in competence. See the discussion of Duranti's work on social variation in ergative case use in Samoan in Hill's chapter, and also the interesting observations in Aikhenvald's grammar of Tariana (Aikhenvald 2003: 311) on how individual differences in evidential proficiency are interpreted.
14. In other cases there may be no evidence of diachronic change in the variety under description, but two alternative analyses may each account equally well for the data. Here, too, treating multiple analyses may be relevant in another way, by showing bridging contexts that are particularly favourable to certain types of change through reanalysis.
15. For example, a 1992 encyclopaedia article by Peter Mühlhäusler on 'polylectal grammars' does not mention any comprehensive polylectal grammatical description.
16. For a discussion of the investigation of formal semantics in the field, see Matthewson (2004).
17. Just as this manuscript was going to press, a special issue of *Studies in Language* (Vol. 30: 2) came out, devoted to the topic *Perspectives on Grammar Writing*, edited by Thomas Payne and David Weber. It was too late to incorporate cross-references to this very interesting collection in the present book, but it contains a number of excellent papers addressing issues related to those dealt with here.

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Grammaticography: The art and craft of writing grammars

Ulrike Mosel

1. Introduction

While lexicography is a well established branch of linguistics, represented in specialized journals and handbooks, grammaticography – the art and craft of writing grammars – is not.[1] Only the history of grammar writing, the typology of grammars or isolated problems feature as topics in language specific, especially applied linguistic research.[2] In contrast to grammatical analysis, grammar writing is not taught in linguistics courses or described in textbooks. It is apparently taken for granted that once one has analyzed the language and understood its phonology and morpho-syntax, one is also in a position to translate the analysis into a grammar. There are only a few works dealing with the question of what kind of information a reference grammar should contain and how this content could or should be presented.[3] But to my knowledge there is none that focuses on how grammars are made from the first phase of collecting and analyzing data till the final product, the grammar, and discusses how the various components of this process interact. The present paper addresses a number of problems which the users of grammars easily detect, but the writers are often not aware of. Even where they are, their attempted solutions often involve less than satisfying compromises between what they envisage as the ideal grammar and what they can achieve given the limited resources of money, time and labour.

Various projects have started developing electronic grammars (e.g. Zaefferer 1998), but since to date no grammar of this format has been completed, they will not be considered here. We will also not analyse the role grammars play in language documentation or the difference between language description and language documentation (cf. Himmelmann 1998 on this point).

2. The typology of grammars

This paper focuses on the writing of grammars of previously undescribed, mostly endangered languages, which in some respects differ from other grammars. Like dictionaries, grammars can be classified on the basis of various criteria (compare Svensén 1993: 17–23):

1. standard vs. dialect/ substandard grammars, i.e. the language or language variety described in the grammar can be either (written) standard language or a spoken regional or societal substandard;
2. monolingual vs. bilingual grammars, i.e. the language used for description can either be the native or a foreign language;
3. prescriptive vs. descriptive grammars;
4. active vs. passive grammars, i.e. grammars which take the perspective of the speaker and explain how words and phrases are used to express oneself in the language vs. grammars which from the hearer's perspective give an analysis of sentences and help the user to understand the grammatical categories and constructions.
5. grammars for language specialists like linguists, or teachers and non-specialists with no training in linguistics;
6. grammars for meta-linguistic purposes (linguistic theory building, linguistic typology) and grammars for language learning.

According to this typology, grammars of previously undescribed languages are usually bilingual descriptive grammars of spoken vernaculars rather than written standard languages. They are mainly written for academic specialists engaged in linguistic research and, consequently, designed as passive grammars. Such grammars can, however, become the basis for teaching materials and thus contribute to the development of literacy and standardization, for example in the case of Bauer's Maori grammar (1993) which was rewritten in a more accessible format (Bauer 1997).

3. Data collection, analysis and description

Probably every grammarian has had the experience that collecting and analyzing language data and writing a grammar are two different things: you think your analysis is perfect, you know how the language works, you might even speak it fluently, but when it comes to writing up the grammar

you are faced with unforeseen problems. How are you ever going to get all you know about the language into a single book? Unless you have already strictly followed a prefabricated questionnaire during fieldwork and confine your language description to writing up the answers, you are confronted with two questions: how you organize the language description in a linear sequence of chapters, and which area of grammar to choose as the starting point of writing. The answers to these questions are not the same. The sequential order of the chapters will follow more or less one of the major traditions. They will be either arranged in an ascending or a descending way, i.e. either from the smallest linguistic units to the larger ones or in the reverse order.

Since many linguistic phenomena are not related to one another in such hierarchies, but are interrelated in an intricate network, every grammar must make use of cross-references. Consequently, the grammarian should write the chapters requiring the least cross-referencing first. Which chapters these are depends on the structure of the language and the grammarian's theoretical approach. For instance, if you describe an inflectional language like German and you consider the various kinds of inflections as category establishing, you can write the chapter on word classes in connection with the morphology chapter. But if your classification of words is based on syntactic criteria, it is more practical to write this chapter after you have written the relevant parts of the syntax, irrespective of whether the word class chapter precedes or follows the syntax chapter.

Although collecting data, grammatical analysis, and writing up the chapters of a grammar are different tasks, they cannot be entirely separated, because once you start writing, you will discover gaps or inconsistencies so that you need to collect and analyze additional data. I often questioned my capacity as a fieldworker when I realized that my data were not sufficient. But now I think that the reason also lies in the very nature of writing, because – at least to some extent – the process of writing shapes and reshapes your thoughts which inevitably leads to changes in your analysis.

4. Factors determining the size, content and format of grammars

The size, content and format of a grammar is not only determined by the characteristics of the language, but also depends on the authors' knowledge of the language and their theoretical background, the prospective users, the intended purposes, and the time-frame set for its compilation.

4.1. The authors

Ideally grammars are written by a team of a native speaker and a person who fluently speaks the language as a foreign language, and where both have undergone a thorough linguistic training in linguistic theory and fieldwork methods. Working from different perspectives, native speakers and non-native speakers focus on different linguistic phenomena and hence complement each other (cf. Ameka, this volume). But such a dream team is rarely found in reality.

In fact, the linguist who plans to write a grammar of a previously undescribed language usually does not know the language, whereas the native speakers he or she works with do not have any linguistic training. As a consequence, both parties will have to engage in a social relationship of knowledge exchange: while the native speakers will teach the linguists their language, the linguists will explain what describing a language is all about. The speech community may also ask them to help with compiling a dictionary or producing educational materials and thus contribute to capacity building. Although funding agencies often do not explicitly support such involvement, many researchers do comply with such requests, because they feel that they owe the community something in return for their hospitality and cooperation (Newman and Ratliff 2001).

4.2. The users of grammars and what they use them for

Since antiquity, grammars have been written simply for the reason that human beings are curious about how their most important tool of communication works. The more practical purposes have been to

1. preserve the knowledge of older varieties of the language to guarantee that future generations will be able to understand sacred texts or otherwise greatly valued literature;
2. standardize the language;
3. teach a dominant or otherwise important language.

With the rise of historical linguistics in the nineteenth century and the development of linguistic typology and language universals research, scholars started investigating languages and writing grammars for purely scientific reasons. In recent times, more and more people, not only linguists, have

come to realize that in view of the imminent loss of much of the word's linguistic diversity, describing previously undescribed minority languages is an urgent task, not only for the sake of linguistics and related fields of research, but also for the communities themselves and their language maintenance efforts. The latter aspect, however, implies that grammarians should not only think about the design of grammars for linguists, but also develop strategies of how such grammars can be transformed into grammars for non-specialists. One of the problems to solve is, for instance, that the prospective users are not familiar with linguistic terminology, so the grammarian should keep scientific terminology to a minimum and explain every term he or she uses in simple words (cf. Bauer 1997; Mosel and So'o 1997).

4.3. Time frame

Existent efforts at making explicit how a grammar of a previously undescribed language should be organized, e.g. in the form of designing questionnaires or databases, tend to focus on comprehensive grammars as a resource for future linguistic investigations (Comrie and Smith 1977; Mosel 1987). Within these considerations, the time factor is not an issue. While Ph.D. grammars are submitted 3–5 years after fieldwork has begun, the publication of a comprehensive reference grammar of 500–800 pages may take between 5 to 10 years, or even longer depending on how many other commitments the researchers have and how long it takes to find a publisher. (cf. the prefaces of Dixon 1972, 1977; Evans 1995; Foley 1991; Mosel and Hovdhaugen 1992).

If grammaticography becomes a recognized branch of linguistics, the time factor should become an issue. Nowadays most grammars of previously undescribed languages are written by Ph.D. and Post-doc scholars who are under severe time pressure to simultaneously learn and analyze the language and cannot aim for a comprehensive grammar which would take more than 5 years to accomplish. The more restricted the time frame is the more important it is to set priorities. But what are the priorities? The answer to this question depends on several factors such as the structure of the language or whether the language is also well documented by texts and a dictionary. We'll discuss this topic below in the section on the content of grammars.

5. The borderline between dictionaries and grammars

Jespersen already observed: "Grammar and dictionary ... overlap and deal with the same facts", and in connection with English auxiliaries "there can be here no hard and fast line between grammar and dictionary" (Jespersen 1924: 32, 43). Any borderline drawn between lexicon and grammar is not a priori given by the language, but is a linguistic construct, so that it may be difficult to decide where to accommodate a particular linguistic phenomenon. Thus it might be difficult to decide whether certain words are more adequately treated as content words in the dictionary or as functional words in the grammar (cf. Schultze-Berndt, this volume). A similar problem is posed by productive speech formulas which are more or less grammaticalized means of expressing temporal and aspectual relationships, e.g. *be going to do something*, (French) *venir de faire quelque chose* 'have just done s.th.', *être en train de faire quelque chose* 'be doing something', (substandard German) *am Tun sein* 'be doing s.th.'. Are they to be described in the dictionary or in the grammar? And if they are treated in the grammar, do they belong in the chapter on tense/aspect or the one on infinitive constructions?

In his works on Kalam and English, Pawley (1993 and elsewhere) showed that the "parsimonious grammar-lexicon model of language" cannot adequately deal with productive speech formulas. Being neither totally productive nor totally fixed they "have no place in conventional grammars and dictionaries" (Pawley 1991: 433). The problem of accommodating function words and productive speech formulas in the dictionary or the grammar relates to the fact that both grammaticalization and lexicalization are continua.

A different kind of interface between grammar and lexicon is found in the interaction between aspect morphology and the semantics of the verbal lexicon, between number or noun class morphology and the semantics of nouns, or between derivational morphology and the lexicon. Here the semantic properties of lexemes determine to varying degrees which kind of grammatical or derivational morphology the lexemes can be combined with and what kind of meaning the resulting forms have.

To what extent the interrelationships between grammar and lexicon are accounted for in the grammar or in the lexicon depends on the nature of the language and the size of the grammar. Without doubt, the interaction between the lexicon and grammatical morphology will play a more important role in the grammar than derivational morphology will, and among deriva-

tional morphemes those which have a direct impact on constructions, as for instance valence changing morphology, will be given preference over others.

6. The format of grammars

Dictionaries usually consist of three parts: the main part which contains the dictionary entries, and what lexicographers call the front and the back matter (Svensén 1993: 230–235). While the front matter contains all information that is necessary to successfully use the dictionary (organization and scope of the dictionary, the resources used, the purpose, the intended user group, etc.), the back matter may consist of appendices giving encyclopedic or practical information, such as place names, weights and measures, quotations, proverbs or useful phrases for travelers. The structure of the main part of the dictionary is defined by the order of the headwords and the format of the dictionary entries, the former being called the macrostructure, the latter the microstructure (Svensén 1993: 223, 120).

Drawing parallels between the structures of dictionaries and grammars may help us to become aware of the needs of grammaticography, as both disciplines investigate how information on a language can be provided in an easily accessible format.

6.1. Front matter and back matter

In modern grammars the preface or the first chapter informs the reader about the language, its genetic relationships, its socio-linguistic background, the variety or varieties of language described in the grammar, the theoretical approach, the sources of the linguistic data, the methods used in text analysis and fieldwork, and finally, it gives a list of abbreviations. As it informs the reader about the content of the book rather than about the grammatical structure of the language, this introductory part clearly parallels the front matter of a dictionary.

Apart from the indices and the references, the last part of a grammar is often a short collection of texts. Corresponding to the back matter of dictionaries, the text collection does not fit into the organization of the content of the main part; it is an appendix which helps the reader to understand how the language is used in various contexts. But unless there exists some litera-

ture in the language or a text collection beside the grammar this 'back matter' should be more than an appendix of a few pages (cf. the section on texts).

6.2. Macrostructure: ascending and descending models

In lexicography the term macrostructure refers to the relative order of the dictionary entries, i.e. whether each entry constitutes a paragraph on its own or several entries are combined in one paragraph, and how the headwords are ordered: alphabetically, thematically, by frequency, etc. Correspondingly, we can speak of the macrostructure of a grammar when we talk about the order in which grammatical phenomena are described.

In general, the grammar can be organized in two directions as the units of grammatical analysis and description can be arranged in an ascending or descending order by either starting with the sound system and then moving to increasingly complex units (word, phrase, clause, sentence) or by starting from the sentence (or an even higher unit) and then moving down to smaller units. The ascending model (phonology > morphology > syntax), which probably has its origin in Priscian's Latin grammar (Hertz 1855–1859), seems to be preferred by most grammarians. Only the Lingua Descriptive Series grammars strictly follow the descending model: (Syntax (sentences > clauses > phrases) > Morphology (inflection > derivation) > Phonology). Other grammars, as for instance the Samoan Reference Grammar (Mosel and Hovdhaugen 1992), combine features of both the ascending and the descending model, as shown in Table 1.

Table 1. The structure of the Samoan Reference Grammar

Chapter	Content
1	Introduction (“front matter”)
2	Phonology, orthography
3	The sentence, a preliminary view
4, 5	Word classes, Morphology
6–8	Types of phrases (noun phrase etc.)
9–14	Types of clauses (basic verbal clause etc.)
15–16	Sentences with embedded and dependent non-embedded clauses
17	Coordination (of words, phrases, and clauses)
18	Case marking and grammatical relations
	Indices, references (“back-matter”)

Following the ascending model, we put the phonology right at the beginning because readers usually want to know how to pronounce and read words and sentences. But instead of presenting the morphology after the phonology, we jumped ahead to sentence structure to give the readers an idea of how the language works before they turn to any chapter of their particular interest. Since the book is a reference work, we do not expect the users to read the book from cover to cover, and therefore present each chapter as far as possible as a self-contained unit. The overview of sentence structure in the third chapter also helped us to avoid too many repetitions in the other chapters.

Then in the fourth and fifth chapter, we return to the ascending order and describe the word classes and their morphology, and subsequently the larger units of phrases, clauses and complex sentences. In the last two chapters we deal with phenomena which are not confined to a single level of description.

The three models presented in this section are far from ideal. All of them put phonology into one chapter although prosodic phonology pertains to all levels of grammar. Another problem area which was already mentioned above is that such models cannot cope with the inter-dependent relationships between the lexicon and the grammar of the language.

6.3. Microstructure: the presentation of form-meaning relationships

In lexicography, the microstructure is the format and internal design of the dictionary entry. A related issue in grammaticography would be the way examples are presented. It has become common practice to provide examples not in the running text, but on separate lines with several tiers, presenting the phonological or written form of examples and their meaning, with various numbers of intervening tiers for close phonetic transcription, morphemic glossing, and so on. Depending on the type of language and the purpose of the examples, the phonological or graphic form can be presented by various kinds of transcriptions, orthographies, or scripts and transliterations, whereas the meaning can be rendered by a free translation and in addition by an interlinear or literal translation.

The inventor of the technique of interlinear glossing is unknown; the earliest record I am aware of is the edition of Tolai texts by Meier (1909), which contains two stories with an interlinear word by word translation. In spite of its long tradition and its pervasive application, interlinear glossing has neither received attention in (meta-)grammaticography beyond Lehmann's article (1982) and the guidelines by editors, nor is it usually discussed in text books on grammatical analysis. The only exception I am aware of is Haspelmath (2002).

Interlinear glossing deserves more attention both in research and in teaching linguistics. Otherwise students might take it as an accurate representation of form-meaning relationships, which it is certainly not. The meaning of words and larger units of grammatical analysis does not equal the sum of the meanings of their component parts, as interlinear glossing might suggest, but results from the interaction of the meaning of the construction as such and the meanings of its parts. Thus interlinear glossing should only be seen as a tool to help the reader to understand examples; and useful tool indeed it is. This is not to say that interlinear glossing could not be further developed to become a means of representing form-meaning relationships, but at the moment grammaticography has taken only the first steps in this direction (Drude 2002).

Another future task of grammaticography could be to analyze to what extent graphs, figures and tables not only illustrate grammatical analysis, but also shape our view of language. How much did, for instance, the suggestive tree-diagram of immediate constituent analysis, which did not permit intersecting branches, influence the development of generative linguistics?

6.4. Terminology

Probably nothing has shaped our thinking about language more than the terminology we inherited from the Greeks and Romans. A case in point are the parts of speech, especially the distinction between nouns and verbs. For centuries these categories have been taken for universals; only a few linguists working on Amerindian and Austronesian languages have expressed their doubts (for a brief summary cf. Sasse 1993). But even those who are convinced that these categories do not exist in the language they describe have difficulties doing without the traditional terms, and due to the lack of an appropriate terminology, may express themselves in a contradictory way.[4]

A second problem of traditional terminology is that it does not always clearly distinguish between form and function. A frequently found example is the confusion of word class and syntactic function when the term adverb is indiscriminately used for both and it is said that an adjective or a prepositional phrase may function as an adverb.

Thirdly, the same terms are used in various senses across linguistic traditions and theoretical approaches and, of course, also denote different things in different languages. Therefore, it is advisable to always define what grammatical phenomenon the terms denote in the grammar in question.

7. The content of grammars

Standard grammars of a previously undescribed language consist of more than just a description of the grammar of the language. Usually they also contain a chapter on the phonology in the beginning of the book and a collection of texts in the end. Some also include a vocabulary. In the following, we first deal with the content of the grammatical section and then discuss the role of texts in grammars.

7.1. Theory and practice

Theoretical discussions on the content of grammars aim at comprehensiveness (Comrie and Smith 1977; Lehmann 1989; Zaefferer 1998). Such considerations help us to make explicit what grammar writing

is all about, but in practice we must be realistic and decide on priorities, especially when grammars are written under the heavy constraints of Ph.D. or post-doc projects.

To some extent at least, the content of reference grammars reflects special interests of the authors and/or the editors and prevalent topics in current linguistic theories, such as subjecthood in the seventies or complex predicates in the nineties. The Lingua Descriptive Series very nicely mirrors the spirit of the times: it contains 79 questions on reflexives, but only five on negation. Although our linguistic knowledge is continuously expanding and linguistic fashions are changing, there are certain types of grammatical phenomena knowledge of which is essential for the understanding of a language. Knowing these phenomena forms the basis for the language learner as well as for the theoretician (theoreticians should also be language learners!):

1. the basics of the sound system and the orthography;
2. the structure of simple declarative, interrogative and imperative clauses;
3. the structure of word groups (NPs, verb complexes, etc.);
4. the formal features which indicate the syntactic functions of words and word groups (constituent order, case marking, cross-referencing etc.)
5. the classification of major word classes;
6. paradigms of inflecting words and the meaning of grammatical categories.

In principle, these are the things which the learner needs to know to understand simple texts with the help of a dictionary and which should be included in a sketch grammar. Once a grammarian has analyzed and described these basics, he/she can expand on them investigating more complex structures or the subtleties of simple constructions.

7.2. The role of texts in grammars

The low prestige of text editions (if they were more highly valued, linguists would no doubt publish more) can be attributed to several factors:

1. the politics of mainstream linguistics departments, some of which do not even recognize descriptive grammars as Ph.D. theses;

2. the fact that linguistic typology concentrates on the investigation of grammatical phenomena which manifest themselves in single sentences;
3. the fact that many typologists work with large samples of languages which does not allow the time consuming in-depth study of texts.

For scientific reasons, however, this relegation of texts to marginal appendices is not justifiable. Firstly, the grammarian like any other scientist should provide evidence for his or her claims, i.e. allow them to be independently verified. I suspect current linguistic practice in this regard is largely unparalleled in other sciences: Imagine a zoologist describing and analysing the parts of an animal without giving his colleagues the chance to see samples of it or at least photographs and films depicting the animal in full from various perspectives. Secondly, a text collection would give colleagues the opportunity to discover grammatical phenomena the linguist did not recognize, or did not have time to cover. In my comparison of Tolai and Tok Pisin (Mosel 1980), for instance, I overlooked the similarity between the Tolai particle *iat* and its Tok Pisin equivalent *yet*. I also did not describe the function of *iat* in my book on Tolai syntax (Mosel 1984), nor was it mentioned in Rinderknecht's Ph.D. thesis on the Tolai noun phrase (Rinderknecht 1987). But on the basis of my text edition (Mosel 1977), Sankoff (1993) was able to identify Tolai *iat* as a focus marker and relate it to Tok Pisin *yet*. This nicely illustrates how text editions can compensate for a grammarian's oversights. Thirdly, grammars are always written from the perspective of prevalent interests in contemporary linguistics. Only texts will later provide data for whatever had not been a topic of current linguists.

To conclude, every grammar should include or be accompanied by a collection of texts which enables the reader to understand how certain constructions are used in context and discover phenomena which were not described in the grammar. Ideally this text edition consists of annotated digitalized recordings of different language genres (e.g. myths, anecdotes, procedural texts, casual conversation, political debates and ritual speech events), accompanied by a transcription, a translation and a commentary on the content and linguistic phenomena.

8. Perspectives of description: Semasiological and onomasiological approaches

The form-meaning relationships of linguistic expressions can be analyzed and described from a semasiological or an onomasiological perspective; i.e. you can either investigate and describe the semantic properties of particular linguistic forms, or the various ways in which particular meanings are expressed. In spite of the works of Gabelentz (1891) and Jespersen (1924), the distinction between semasiological and onomasiological language description has not received much interest. Grammars are either semasiological or represent an arbitrary mix of these two approaches. Therefore, it seems worthwhile summarizing Gabelentz' and Jespersen's work in the following two sections (8.1 and 8.2). This will be followed by a brief discussion of the organization of the influential Lingua Descriptive Series Questionnaire (8.3). Finally, we argue that the semasiological and the onomasiological approach need to be separated (8.4) and summarize the problems of the onomasiological approach (8.5).

8.1. Gabelentz

One of the first scholars who thought about what linguistic competence means and how this competence could be described was Georg von der Gabelentz, who wrote in 1891 (Gabelentz 1984: 84):

> I know a language firstly means: I understand it, when I hear or read it, and secondly, I use it correctly when talking or writing. Understanding the language means that it appears to me as a phenomenon, or better as a whole (system) of appearances, which I interpret. When using it, language is a means, or better a whole (system) of means of expressing my thoughts. In the former case the form is given and the content, the thought (the content expressed by the form) has to be found, whereas in the latter case the content of the thought is given and the form, i.e. the expression, has to be found.[5]

Each linguistic expression can be viewed from two perspectives: the perspective of the hearer who analyses what he or she hears and the speaker who puts his or her thoughts into words. This idea then leads Gabelentz to the conclusion that a language consists of two interacting systems and that these systems should be described separately (Gabelentz 1984: 85): Since "everything in language is a phenomenon to be interpreted and a means to

be used"[6], the ideal description of a language would present it as "two complementary grammatical systems"[7]:

> the first one I call the analytical system, because it explains linguistic phenomena by breaking them down; the other one I call the synthetic system, because it shows how the grammatical means are made use of to construct speech[8].

Accordingly, an ideal grammar consists of two mutually complementary parts: the analytical or semasiological part takes the linguistic expressions as given, analyses their forms and describes their meanings, whereas the synthetic or onomasiological part takes the meaning as the point of departure and describes by what kind of linguistic forms they are expressed. The semasiological part precedes the onomasiological one, "because one needs to know how to interpret linguistic phenomena, before one is able to use the means of expression"[9] (Gabelentz 1984: 86). These two parts are preceded by the description of the phonology.

Since the semasiological part takes the hearer's perspective, "the analysis has to start with the sentence, proceeding from the whole to the parts, i.e. from the sentence to the words and wordforms, eventually reaching the terminal elements, the single sounds"[10] (Gabelentz 1984: 86). As for the organization of the onomasiological part, Gabelentz is less explicit. He only says that it should have sections for everything which is expressed by grammatical means (Gabelentz 1984:100) and refers to his Chinese Grammar. This, however, does not reflect what he said earlier about the onomasiological approach, but describes the syntax of Chinese.

8.2. Jespersen

In his book *The Philosophy of Grammar* (1924), Jespersen, who had probably been influenced by Gabelentz work[11], distinguishes "three stages of grammatical treatment of the same phenomena, of three points of view from which grammatical facts can be considered, which may briefly be described as (A) form, (B) function, (C) notion." (Jespersen 1924: 56) All form elements are to be treated in a section Jespersen calls "morphology"; they comprise sounds and 'sound combinations', "word elements, then words, and finally word combinations" (Jespersen 1924: 41) and even "word-order" (Jespersen 1924: 44). The functional categories (B), which

are described in the "syntax", are grammatical categories such as number, case, tense, mood, voice, person, gender.

In English, for instance, suffixes (e.g. *-ed* in *handed*), stem alternation (e.g. *drank*) or suppletive forms (e.g. *was*) are forms (A) which have the grammatical function (B) of 'preterit', which in turn expresses more than one notional category (C): 'past time', 'unreality' (*I wish I knew*), or even in certain contexts 'future time' (e.g. *It is time you went to bed*) (Jespersen 1924: 56). The notion of 'future time' or 'futurity', on the other hand, is not expressed by a 'real future tense' as in French, but "by means of phrases which do not signify mere futurity, but something else besides" such as 'volition' 'destiny', 'uncertainty' and 'obligation' (Jespersen 1924: 50), e.g. *I shall start tomorrow, he will start tomorrow, I am to start tomorrow* etc. (Jespersen 1924: 45f). In a similar way, Jespersen distinguishes between plural as functional or grammatical category and 'plurality' as the notional category of 'more than one'. Plurality can be expressed not only by plural, but also by singular forms, e.g. *horses, the upper and the lower shelf* (Jespersen 1924: 188 ff). Other notional categories discussed by Jespersen are 'person' (as expressed by pronouns, cross-referencing affixes and possessive constructions in forms of address like *your highness*), 'animate and inanimate' (Jespersen 1924: 234 ff.), "comparison" (Jespersen 1924: 244), "time" (Jespersen 1924: 254 ff.),"direct and indirect speech" (Jespersen 1924: 290 ff.), various types of "utterances" and "negation" (Jespersen 1924: 322 ff.). In general, only those categories figure as notional categories in onomasiological language descriptions which have some grammatical correlate. Jespersen says:

> ... it is important always to remember that these are to have a linguistic significance; we want to understand linguistic (grammatical) phenomena, and consequently it would not do to set to work as if language did not exist, classifying things or ideas without regard to their linguistic expression. (Jespersen 1924: 57)

8.3. Lingua Descriptive Series

The Lingua Descriptive Series Questionnaire (Comrie and Smith 1977) has provided the framework for the writing of thirty grammars of structurally and genetically very different languages. In accordance with the questionnaire, all the grammars have the same descending organization and use the same numbering of chapters, sections and subsections, so that cross-

linguistic comparison is made easy. Chapter 1 Syntax starts with (1.1) sentence types and subordination, then (1.2.) deals with the internal structure of clauses and phrases, followed by various topics related to the syntax of clauses, and their arguments and adjuncts: (1.3) coordination, (1.4) negation, (1.5) anaphora, (1.6) reflexives, (1.7) reciprocals, (1.8) comparison, (1.9) equatives, (1.10) possession, (1.11) emphasis, (1.12) topic, (1.13) heavy shift, (1.14) other movement processes. The chapter ends with (1.15) minor sentence types and (1.16) operational definitions of word classes. Chapter 2 Morphology comprises (2.1) inflection and (2.2) derivational morphology, and is followed by three short chapters on (3) phonology, (4) ideophones and interjections, and (5) the lexicon.

This radical descending organization is not user-friendly because it presents complex sentence structures before the reader is informed on the structure of simple clauses. Not surprisingly, Bauer changed this order when she rewrote her Maori LDS-Grammar (1993) into the more readable Reed Reference Grammar, now starting with an overview of simple clause and phrase structures including case marking, and describing complex sentence structures in the last part of the book (Bauer 1997: 5 ff., 540 ff.). Since the linguist's understanding of the structure of foreign languages begins with simple constructions (as does language learning in general), I am convinced that most people prefer grammars which start with simple constructions.

The questions of the questionnaire, and hence the grammars, mix the semasiological and the onomasiological approaches; "the structural framework of the Lingua Descriptive Studies is simply inconsistent, as it sometimes chooses a formal basis and another time a functional basis for its organization"[12], as Comrie (1998: 13) himself admits. Mixing both approaches can result in descriptions which fail to adequately account for the formal and semantic structure of languages. The section on structural questions, for instance, contains six questions concerning the existence of 1. verbs without subjects or dummy subjects, 2. verbs without direct objects, 3. a separate category of indirect object, 4. other kinds of arguments, 5. the combinations of different kinds of arguments, 6. the order of constituents. But it does not enquire about the argument structure of basic clauses in terms of coding properties.

In accordance with Jespersen's view of morphology, the means of expressing the 'syntactic functions' of 'subject' and 'object' are treated in chapter 2 'Morphology' in the section 'Noun inflection'. The beginning of this chapter is semasiologically oriented. One finds questions about the

various kinds of argument encoding devices including “pre-/postpositions” and “word order”, followed by questions on the encoding of agentive and non-agentive subjects with intransitive and transitive verbs and finally of subjects in copular constructions. The next question concerns the marking of objects and complements, but here without distinguishing semantic roles, the encoding of the agent in passive, pseudopassive and impersonal constructions, and where relevant the expression of topic and emphasized elements. Subsequently all these questions on syntactic functions are to be applied to “all types of non-finite or nominalized verb”.

The following section switches to onomasiological questions and asks the grammarian to indicate how non-local semantic roles are expressed. The roles of agent and patient are missing here. Obviously it is assumed that the expression of agents and patients is already exhaustively covered by the immediately preceding questions. But this is not so, and consequently other kinds of agent expressions cannot be accommodated without serious contradictions. In the Polynesian language of Tuvalu, for instance, “the agent of a transitive verb can be expressed as a modifier of a direct object” (Besnier 2000: 283).

(1) *Ne kkati telotou niu*
Pst cut their-3 coconut
‘They cut down the coconut tree’

For the lack of any other place, Besnier describes this construction in the section ‘Subject of transitive verb’, though the agent in this construction is an adnominal modifier and not a subject.[13]

A grammar which keeps the semasiological and the onomasiological perspectives apart could deal with such phenomena in a non-contradictory way. In the semasiological part, it would describe the form and meaning of the argument structure and the construction of adjuncts including adnominal modifiers, whereas the various ways of expressing agents would be a topic in the chapter on the expression of semantic (thematic) roles in the onomasiological part.

8.4. Two grammars of the same language?

Gabelentz and Jespersen were convinced that languages should be described from both the semasiological and onomasiological perspective, but

actually did not provide any arguments for their position. So, we must ask whether both approaches are really necessary to capture a language. Reference grammars always choose the semasiological perspective – if not throughout, at least for the most part. This is justified and absolutely necessary because the readers need to know what kind of linguistic forms exist before they can understand that a particular meaning M1 is expressed by construction C1. Furthermore, grammatical constructions are often polysemous so that a particular construction C2 can have the different meanings M1, M2, M3. The onomasiological approach would describe how each of the meanings M1, M2, M3 is expressed in separate sections and possibly say that M1 is expressed by C1 and C2, whereas M2 is expressed by C2, C3, C4, and M3 by C2 and C5. This is shown in Figure 1.

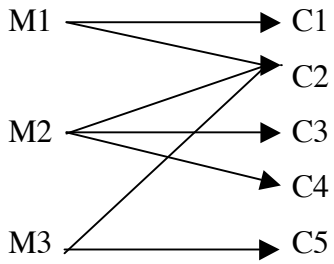

Figure 1. The onomasiological approach

If this onomasiological grammar has an index of construction types C1–C5, the readers can easily find the three meanings of C2. But what they cannot find out is how the different meanings are related to one another. Is there anything the meanings have in common? Is there a basic meaning from which the others are derived, perhaps by metaphor or metonymy?

A good example which shows how the various meanings of a polysemous construction are interrelated is found in Tolai. The most frequently used preposition in Tolai is *ta*. Prepositional phrases introduced by *ta* can refer to a place, a goal, a source, a point of time, a beneficiary, a recipient, an addressee, and a cause. An onomasiological description would describe these meanings in different sections and not reveal that the basic function of *ta* is to mark noun phrases (other than place names) as referring to places and that all other functions are derived from this locative function (Mosel 1984: 178–183,191–193, 201–203; Lyons 1977: 718ff). What kind of entity or phenomenon a noun phrase marked by *ta* refers to, depends on the semantics of the context. For example, with verbs denoting motion towards a

goal, it is the goal, with verbs denoting motion away from something, it is the source, with verbs of giving, it is the recipient and with speech act verbs the addressee; e.g. *ruk ta* 'go into, enter', *vilau ta* 'run away from', *tar ta* 'give to', *biti ta* 'say to'.

Having described a language from the semasiological perspective and ideally written a comprehensive grammar which covers all grammatical phenomena and their meanings, the question arises: what is left for the onomasiological description? To date no descriptive reference grammar comprises the two parts of a semasiological and onomasiological description as envisaged by Gabelentz (1891), Jespersen (1924), Lehmann (1980, 1989) and myself (1987). But reference grammars occasionally contain single chapters or appendices with onomasiological descriptions. Most frequently such descriptions relate to the semantic function of possession, orientation in space and time, and negation, and the pragmatic function of questioning. The reason for this preference is obvious. These semantic and pragmatic functions play an important role in communication, but they cannot be treated together in single chapters of the semasiological description because they are expressed by linguistic constructions which pertain to more than one morpho-syntactic category or level. In addition, the onomasiological approach can account for productive speech formulas which partly fulfill grammatical functions.

The Samoan expression of temporal relations may serve as an example here. Samoan has six simple so-called TA-markers (tense/aspect particles) in the verb complex which relate the state of affairs talked about to the moment of the utterance or some other point of reference set by the context, e.g. *sâ 'ai* 'ate (imperfective past)', *na 'ai* 'ate (perfective past)', *'ua 'ai* 'has eaten', *'olo'o 'ai* 'is eating', *e 'ai* 'will eat, usually eats', *'ole'â 'ai* 'will definitely eat' (Mosel 2000). In addition to these TA-markers, Samoan has several temporal and aspectual productive speech formulas which complement the paradigm of TA-markers, as in Table 2.

While in the semasiological Samoan Reference Grammar these speech formulas are treated in the chapter on complement clauses, they would be put together with the TA-markers in a chapter on time in an onomasiological grammar. We may even go a step further and include other productive speech formulas which do not show any formal peculiarities like the complement taking aspectual and phasal verbs in Samoan, but are structurally similar to free constructions such as that exemplified in Table 3.[14]

Table 2. Samoan temporal and aspectual productive speech formulas

TA	_____	COMP	_____	gloss
	TEMP/ASP.V	'that'	EVENT	
	leva	*ona*	____	'be a long time ago that ____'
	lata	*ona*	____	'be close that ___, soon'
	'uma'	*ona*	____	'be finished that ___, already'
	'âmata	*ona*	____	'start to ___'

Table 3. Other productive speech formulas

na alu		_____		*'âtoa*	PROG	_____	
		TIME SPAN				EVENT	
Na	*alu*	*le*	*aso*	*'âtoa*	*'o*	*o'u*	*moe*
PAST	go	ART	day	whole	PROG	1.SG	sleep

'I slept the whole day.' (lit. 'The whole day I was sleeping went.')

Do these speech formulas belong in a grammar or a dictionary? There is no straightforward answer. For the grammarian the answer largely depends on the purpose of the grammar. If the grammar is meant to be a book about constructions people use to express certain types of meaning, then these expressions belong there. But if the grammar is only concerned with morphology and syntactic rules of phrase and sentence structure, they will be ignored because they do not formally differ from non-formulaic expressions. Therefore such formulas were not included in the Samoan Reference Grammar, but in the language course book *Say it in Samoan* (Mosel and So'o 1997).

The only onomasiological grammar I have come across is *A communicative grammar of English* by Leech and Svartvik (1975), which complements the English reference grammar by Quirk et al. (1972). In this grammar one finds, for instance, a chapter on "time, tense and aspect" (Leech and Svartvik1975: 63 ff), with a section on 'future time', which starts stat-

ing that "there are five ways of expressing future time in the English verb phrase. The most important future constructions are those which use *will* (*shall*) and *be going to*." (Leech and Svartvik 1975: 70)

8.5. Structure and content of onomasiological descriptions

A tradition of 2000 years has shaped the structure of semasiological grammars and made linguists more or less intuitively agree on their contents. Onomasiological descriptions, on the other hand, have yet to find an appropriate, widely accepted design. There are too many questions which have not yet been answered:

1. How are the semasiological and the onomasiological description to be related to each other? Should the onomasiological description just be an addition to the semasiological one or should it be more independent?
2. How can we decide on which semantic and pragmatic domains are to be chosen for the onomasiological part? Would these domains all have the same status? How are the descriptions of the domains to be ordered in the grammar? Would they be the same for all languages?
3. To what extent will the descriptions account for lexical and phraseological aspects of the linguistic phenomena to be described?

Linguistic typology and cognitive linguistics will certainly bring us nearer to an answer, but the task of transfering their findings into the practice of writing grammars should not be underestimated. As with traditional grammar writing, it requires setting priorities and organizing the description of very complex phenomena into a sequence of chapters in a book.

9. Concluding remarks

In view of the urgent necessity for documenting endangered languages, grammaticography needs to be advanced as a genuine discipline of linguistics to ensure that the analysis of previously undescribed linguistic phenomena is presented in such a way that it can serve as the basis for further research as well as the development of materials for language maintenance measures. In the preceding chapters I first compared grammaticography with its older sister lexicography. In the search for methodologies of 'catch-

ing language', grammarians can certainly learn from lexicographers in how to present information on a language in a format that fulfills the standards of the trade, but is user-friendly at the same time.

The second part briefly discusses the problem of how to decide on the content of a grammar and the importance of texts as complementing the grammatical description. Instead of working with a workplan which aims at a comprehensive grammar, I suggest starting with a short grammar comprising the essentials and then, if time allows, expand on topics of special interest.

The final part of the article first draws attention to the pioneers of grammaticography, Gabelentz and Jespersen, who distinguished between the semasiological and the onomasiological approach to language description. While the semasiological description analyses the forms of expression and their meanings, the onomasiological description shows the interaction of various kinds of lexical and grammatical means of expression to cover particular semantic and pragmatic domains like possession, orientation in space and time, or asking questions. Both approaches are necessary.

Writing a grammar is more than an organizational exercise. As Bob Dixon demonstrates in his grammars and in his teaching of future grammarians, it requires both a deep understanding of language in all its complexity and a sound theoretical basis (cf. Dryer, this volume). In the conclusion of his book on ergativity, Dixon (1994: 229) remarks,

> The most important point is that a language can only profitably be studied as whole. One must recognize and distinguish different levels of structural organization – phonological, morphological, syntactic, semantic, discourse and pragmatic – but each of these continuously interrelates with the others.

Here lies the challenge and the fascination of writing grammars, and the task of grammaticography as a future discipline of linguistics. In a world where specialists – and linguists are no exception – know more and more about less and less, it becomes increasingly important to develop methodologies of making specialized knowledge accessible to non-specialists. Only the identification, analysis and description of the essentials of the structure of languages will enable us to connect specialized knowledge of various linguistic areas and advance our understanding of language. For this very reason the old tradition of grammar writing is gaining more importance than ever.

Notes

1. I am grateful to Philipp Brandenburg, Alan Dench, Nick Evans, Geoffrey Haig and Nicole Nau for their valuable comments on earlier versions of this paper and inspiring discussions on grammaticography.
2. Ágel (1995 ed.); Cherubim (1973); Helbig (1992); Leitner (1986); Wilkins (1976).
3. Cf. Comrie and Smith (1977); von der Gabelentz (1901); Jespersen (1924); Lehmann (1980); Mosel (1987); Nida (1949: 222–281).
4. Cf. Vonen's criticism of the Samoan Reference Grammar which is quite justified with regard to the inconsistency of terminology (Vonen 1997: 139–144, Mosel and Hovdhaugen 1992).
5. "Ich kann eine Sprache, das heisst erstens: ich verstehe sie, wenn ich sie höre oder lese,- und zweitens: ich wende sie richtig an, wenn ich in ihr rede und schreibe. Insofern ich sie verstehe, stellt sie sich mir dar als Erscheinung, oder richtiger, als eine Gesammtheit von Erscheinungen, die ich deute. Sofern ich sie anwende, bietet sie sich mir als Mittel, oder richtiger als eine Gesammtheit von Mitteln zum Ausdrucke meiner Gedanken. Dort war die Form gegeben und der Inhalt, der Gedanke zu suchen; hier umgekehrt: gegeben ist der Gedankeninhalt, und gesucht wird die Form, der Ausdruck."
6. "Alles in der Sprache ist zugleich zu deutende Erscheinung und anzuwendendes Mittel".
7. "zwei einander nothwendig ergänzende grammatische Systeme"
8. "das eine nenne ich das analytische, weil in ihm die Spracherscheinungen durch Zerlegung erklärt werden; das andere nenne ich das synthetische, weil es lehrt die grammatischen Mittel zum Aufbaue der Rede zu verwerthen"
9. "denn man muss die Spracherscheinungen deuten können, ehe man die Sprachmittel anwenden kann."
10. "…und so hat die Analyse Vom Satze auszugehen. Folgerichtig schreitet sie vom Ganzen zu den Theilen, also vom Satze zu den Wörtern und Wortformen fort, und erst zuletzt gelangt sie zu den letzten Elementen, den einzelnen Lauten."
11. Cf. the footnote in Jespersen (1924: 39); Kürschner (2002).
12. My English translation from the German "Der strukturelle Rahmen der Lingua Descriptive Studies ist schlichtweg inkonsistent, indem er einmal eine formale und ein andernmal eine funktionale Basis für die Organisation wählt." This in turn is a translation from Comrie's English original by Christian Strömsdörfer and Dietmar Zaefferer.
13. Similar constructions are found in Samoan. (Duranti 1981: 173 f; Mosel and Hovdhaugen 1982: 761–763).
14. For further examples cf. Mosel (2002).

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Real descriptions: Reflections on native speaker and non-native speaker descriptions of a language[1]

Felix K. Ameka

> There are 2,000 or 3,000 languages, for which we have no decent description, that will pass into disuse within the next few generations. Trained linguists are urgently needed to document them. In most cases native speakers can be trained as linguists but in many instances an outsider is required. (Dixon 1997a:138)

1. Introduction

Now more than ever in the history of linguistics with our growing awareness of the need to document and describe languages that have not yet been recorded, the importance and role of the native speaker has been brought into sharper focus. The native speaker is no longer merely seen in field linguistics as "a human being who is able to give information about his or her language" (Coulmas 1981: 5). They are rather seen as people who can help "shape the record" (Mithun 2001) or promote the work of the linguist through a healthy and symbiotic relationship of the kind described by McLaughlin and Sall (2001). The native speaker may also be the last repository of a significant body of knowledge which is a crucial component of the world's intellectual and cultural heritage (cf.Crystal 2000, Evans 2001). At the same time, it has become increasingly clear that there are different kinds of native speakers (see e.g. Dorian 1981, 1986 and Grinevald 2003; and see also Davies 2003 on the role of the native speaker in applied linguistics). Despite the recognition of a more active role for the native speaker in language description, discourses on documentation generally take it for granted that the linguist doing the documentation is an outsider–a non-native speaker of the language in question. Some will concede, as Dixon does in the quote above, that native speakers can also be trained

as linguists to describe their native languages, but on the whole the assumption and practice remain what Ken Hale (of blessed memory) observed decades ago. He remarked: "It is a prevailing fact about anthropological linguistics that the linguist and the native speaker are not the same individual" (Hale 1972: 384). Moreover, he wondered about the future of a linguistics dominated by non-native speakers of languages they work on. He wrote:

> I question whether significant advances beyond the present state of knowledge of the world's languages can be made if important sectors of linguistics continue to be dominated by scholars who are not native speakers of the languages they study. (Hale 1972: 385-386)

I am tempted to raise a similar question about the endangered languages documentation enterprise, if this task is only performed by "outsiders". In my view, if this trend continues we cannot expect to have optimal records or real descriptions of these languages. In fact, "insiders" are not always perceived as engaging in the "real" business of linguistics. I hope to demonstrate in this chapter that unless the records of the languages being documented are the product of collaboration between trained native speaker and non-native speaker (anthropological) linguists, they will not be real, or optimal descriptions representing the realities of the languages. This is because the issues attended to by the two kinds of linguists while overlapping in some areas, differ in others and yet are complementary in ways that are mutually beneficial to the documentation programme.

In the rest of the chapter I demonstrate the similarities and differences between native speaker and non-native speaker descriptions of a language by comparing the first descriptions of Ewe, a Kwa language of West Africa, by a non-native speaker (Westermann 1907, 1930) and by a native speaker (Ansre 1961, 1966a). Later descriptions by both kinds of authors are also considered (e.g. Clements 1972, Collins 1993, and Duthie 1996– non-native speakers, and Ameka 1991, Essegbey 1994, 1999–native speaker linguists). It emerges that the descriptions are affected by the linguistic ideologies of the two types of linguists and differ in what they are sensitive to. For instance, a non-native seems to pay attention to generalisations in some areas and to be ethnographically rich while a native goes for details in other areas. I will illustrate this by examining the description of numerals and quantifier phrases, adjectives, aspectual constructions and verbal constructions.

Of course, the time when a description is written bears upon the issues that are adumbrated in it. However this is orthogonal to whether the description is carried out by a native speaker or a non-native speaker. The types of questions raised in the linguistic literature, be it from practitioners who are working on formal or functional models of language or from typologically oriented linguists as well as the availability of information about the possibilities of human languages impact on the form, content and type of description. Furthermore, as we will discuss below, the type of training the linguist has received, be they native speakers or non-native speakers of the languages they are working on, affects their descriptive practice to a very large extent. While these features cannot be entirely disentangled from one another, I will, nevertheless, try to focus on the aspects of the descriptions that I consider to emanate from the native or non-native speaker status of the one carrying out the description.

The chapter is structured as follows. In the next section, the role of the native scholar in both ethnographic and linguistic description is discussed. Section 2 introduces the descriptions of Ewe that are compared. Section 3 suggests some of the concerns that are addressed in non-native speaker descriptions which are overlooked in native speaker descriptions. This is followed in section 4 by an examination of the pitfalls of native speaker descriptions. Section 5 discusses some of the common ground that is covered in both types of work. In the case of the Ewe works being compared, some remarks are made especially with respect to their being the foundation records of the language. Section 6 explores how subtle semantic distinctions can be lost on both native and non-native speakers and how such subtleties can be uncovered through a judicious use of native speaker intuitions, cumulative knowledge from earlier descriptions and corpus study. The final section concludes with the idea that we can only get a holistic and optimal description of a language if there is cooperation between well-trained native speaker and non-native speaker linguists of that language. The linguists should in turn collaborate with the naïve speakers of the language in the description and documentation enterprise.

2. Native and non-native ethnographies and linguistic descriptions

While linguists have not been too concerned with the appropriateness or otherwise of native speaker vs. non-native speaker descriptions of a language, anthropologists have debated at length the usefulness or otherwise

of insider vs. outsider ethnographies (see e.g. Owusu 1978, Nukunya 1994 Yan 1997, Ryang 1997 Hastrup 1993, Abasi 1995). To set the scene for the discussion of the role of the native speaker linguist in language description, it is useful to recall some key issues in relevant anthropological debates. Some anthropologists have argued that since the main reason for doing ethnography is the experience of difference, "outsider" ethnographies are more suitable (cf. Pool 1989). In fact, Tedlock (1987: 329) suggests that there would not be "any place for an ethnographer if all parties shared the same native language … What is ethnography if it is not the phenomenology of asymmetry, of otherness, foreignness?" From such a perspective insider ethnography is a contradiction. On the other hand, Owusu, who on occasion functions as an "insider" ethnographer (1978, 1997), is very critical of "outsider" ethnographers especially those who do not have much familiarity with the native language. Commenting on the earlier classical ethnographies of various African communities, he draws attention to the difficult position of the native anthropologist in working with such records. He notes that a careful reading of some of these ethnographic monographs demonstrates that

> it is virtually impossible particularly for the native anthropologist to falsify, replicate or evaluate *objectively*.[2] For frequently, it is not clear whether the accounts so brilliantly presented are about native realities at all or whether they are about informants, about scientific models and imaginative speculations or about the anthropologists themselves and their fantasies (Owusu 1978: 312 emphasis in original)

I believe native speaker linguists sometimes feel the same way towards some descriptions of their languages. The native speaker linguist is even in a more precarious situation when it comes to data quality control because the specific description can always be said to be the model and reality of the particular native speaker consultant. Furthermore, in linguistics, data from a native speaker is considered "sacrosanct" as Bickerton (1996: 157) quoted in Lefebvre (1999: 383) put it:

> It is a foundation stone of our discipline that native speakers of a language do not and in the nature of things CANNOT 'correct', 'modify', 'rectify', or 'repair' the judgements of other native speakers: they just make different judgements (emphasis in original)

In a sense this is true and it can be an important safeguard against native speakers claiming their variety of a language to be the representation of the whole language. However, this can and has been misused to ignore native

speaker judgements about particular sentences that have served as foundation stones for various formalisms. Sadock (1996) brilliantly satirizes this as a manifestation of the Principle of Information Free Linguistics (PIFL). One scenario he sketches is where a linguist, giving a talk on a much discussed language in the "theoretically central literature" called Tophar, cites the following relevant data with judgements to illustrate a hitherto undocumented possibility of covert scrambling at LF:

(i) a Pictures of themself seem to him to bother each other
b *Pictures of him seem to them to resemble each other
(ii) a Whose self do picture of each other bother him?
b *Where is the nearest men's room?

The challenge from a speaker of Tophar in the audience and Sadock's portrayal of the linguist's reaction is illuminating and worth quoting in extenso:

> "I am a native speaker of Tophar [pronounced [dopHAR] – Oops!] … and find your (ia and (iia) horribly ungrammatical and your (ib) and (iib) just fine. Doesn't that cast some doubt on your principle of LF scrambling?"
>
> Uhhh, Noo. To the theoretically naïve in the audience, the dispute over the accuracy of your data might seem pretty serious, but given the gigantic gulf between data and theoretically relevant fact and the further chasm between fact and principle, it is not really of any consequence. LF scrambling could well exist **regardless** of any data from Tophar or any other language, for that matter. Given what we know of UG, LF scrambling is a clear possibility, a virtual conceptual necessity, as a matter of fact. So in this case, simply smile patronizingly and say "My data are different from yours", for indeed they are. (Sadock 1996: 136)

A native speaker linguist's hands are tied, as it were. Sometimes, various claims are made about their language and different kinds of data are attributed to native speakers of their language, data that is hard to replicate. Sometimes it is even hard to see how the data and the judgements reported from native speakers support a particular theory that they are being used to demonstrate. For instance, Aboh (2001: 759) in a review of a book about a variety of his native language observes in a way similar to Owusu that a "close scrutiny of the data reveals that most of the examples relevant for the discussion are ungrammatical. Conversely, other examples which are perfectly grammatical are analysed by the author [a non-native speaker linguist

FKA] to be ungrammatical". Yet a native speaker linguist like Aboh or myself can only say in such contexts that either the speakers we consulted on a particular piece of data accept it or reject it, or that the speakers have different grammars. One cannot repair or modify the data of another native speaker. They are just different data. It makes one wonder sometimes about the empirical bases of some theoretical claims (see also Lefebvre 2000 on data in pidgins and creoles research).

Be that as it may there are arguments for giving a role to the native scholar even in ethnographic fieldwork. Owusu (1978) adopts some of the views of David Schneider who discusses the reasons why native ethnographers have a role in the study of kinship in America. Schneider argues that a native ethnographer knows the society and culture well. He adds:

> We *speak* the language *fluently,* we know the customs and we have observed the natives in their daily lives. Indeed we *are* the natives. Hence we are in a especially good position to keep the facts and the theory in their most productive relationship. We can monitor the interplay between fact and theory where American kinship is concerned in ways that are simply impossible in the ordinary course of anthropological work. … By the same token of course we are able to achieve a degree of control over a large body of data which many anthropological fieldworkers hardly approach even after one or two years in the field. Hence the quality of the data we control is considerably greater and the grounds for evaluating the fit between fact and theory is correspondingly greater. (Schneider 1968 quoted in Owusu 1978: 321-2)

Comparable things have been said about the usefulness of native speakers in linguistics. Ulvestad (1981: 245-6), supporting his claim with a quote from Lees (1957), argues that:

> ... the most powerful research machine imaginable is the trained linguist who is also a native speaker of the object language. He is the ideal linguist par excellence; only he can be in possession of "those flashes of insight, those perceptions of pattern, which mark off the brilliant scientist from the dull cataloguer of data" (Lees 1957: 380).

Some, e.g van Driem (2002), would argue that this is demonstrably false. In support of their argument, they would assert that the best and most comprehensive grammars of English were written by non-native speakers, notably Danish and Dutch scholars, such as Jespersen (e.g. 1933, and see also his seven part English grammar), Kruisinga (1911) and Zandvoort (1948). Thus non-natives can acquire and appropriate, as it were, a high degree of

native knowledge some of which the natives themselves are not conscious of. Widlok (2004) points out that such non-natives learning the language from outside as well as natives learning, or rather developing their competence, from inside tend to make similar mistakes, especially mistakes that are related to mismatches of frame expectations. Thus the distinction between native speaker and non-native speaker dissolves when they are participating in communicative practices. Nevertheless, I still think there are pieces of knowledge that the native speaker has which they may not be conscious of but which remain hidden from the non-native (cf. Keesing 1979).

Even this point may be challenged, however. Van Driem (2002: 12) cites Anna Wierzbicka as an example of a non-native speaker of English who has very subtle intuitions and can produce a battery of expressions to justify one or the other semantic analysis sometimes to the amazement of native speakers (cf. Wierzbicka 1988, in press). While this is true, it is also the case that Anna Wierzbicka constantly draws on the intuitions of many native speakers including linguists and linguists in training. Thus the product that one gets is the result of collaboration between Anna Wierzbicka, a non-native speaker, and a host of native speakers. Moreover, although the English grammars mentioned above are justifiably celebrated, it is my contention that one of the best, if not the best English grammar to date, is the one produced by a team of native speakers, Randolph Quirk, Sidney Greenbaum and Geoffrey Leech and a non-native speaker, Jan Svartvik, namely, Quirk et al. (1985) and see also Leech and Svartvik (1975, 2003).) This is what I advocate: a collaboration in the documentation enterprise between native and non-native trained anthropological linguists.

One reason why such collaboration is the optimal documentation team imaginable is that being a native speaker linguist is a mixed blessing. On the one hand, they may be the ideal linguist par excellence but they may also be the worst source of information on their native language because their intuitions may have become contaminated and biased by the theories that they work with. In fact, the native speaker linguist may not always be able to separate an empirical fact from a theoretical dogma that they are pursuing. The Janus-faced nature of a native speaker linguist or grammarian is commented upon by Anttila (1972: 349) as follows:

> Once you have linguistic training, you spoil your native intuitions as a normal speaker and you cannot write a psychologically real grammar for a normal speaker. Linguists are not normal speakers when they write gram-

> mars. On the other hand if you are a naïve speaker you cannot write grammars at all.

One of the ways in which a trained native speaker is a danger to the language is where the fragments of the language they perceive to be good or bad pieces of the languages tend to be dictated by their own linguistic ideologies or specific varieties. This may be an ideology based on theoretical orientation, where the language is forced by the native speaker to become more like the translated versions of sentences used to justify claims about phenomena within a model such as long distance movement or verb movement. Or it may be based on the variety of the language that they speak themselves. One of the facts of life is that trained native speaker linguists tend to be people who live away from their language environments. As such they may not participate in communities of practice in which the language is one of the codes. They may thus have restricted codes since they may not use the language in some domains on a daily basis.

Some of these negative effects can be minimised with good training. Attention has been drawn to the need for reappraisal of the kinds of linguistics programmes that are currently available (Grinevald 1998; Newman 1998, 2003). Newman, for instance, chastises graduate linguistics programmes in American universities for not adequately catering for the needs of native speaker PhD candidates in terms of empirical scientific methodology. Let me point out that even if native speaker linguists are well trained in these methods, there is a peculiar problem that they might face in their language communities, namely, when they attempt to get information from other speakers they are told that they speak the language and they should not be asking such stupid questions. In this situation, the teacher - apprentice construct for fieldwork does not always work. What some of my colleagues and I have found useful in such situations is the use of stimulus based elicitation techniques as described by Hellwig (this volume); see also Ameka and Essegbey (2006, in press). We have also found it useful in our work on Ewe to draw on different kinds of mediated discourse such as creative written works produced by other native speakers, oral productions of drama, poetry etc. on the radio or television, and real-time observation and recording of conversations. Certainly these can be used by non-native speakers as well – see Duthie 1996 who uses texts from an Ewe newspaper as an important source of examples. But non-native speakers need a good knowledge of the language, and especially in the case of the written texts without fully explicit orthographies (Ewe orthography does not mark tones), one needs a good knowledge of the language to work through them.

My experience as a trained native speaker linguist working on my native language contrasts with that of my work as an outsider working on Likpe, a Ghana-Togo Mountain language, whose speakers are bilingual in Ewe, the lingua franca, and in Likpe. Certain speakers also command Akan and English. Some of the constraints I feel include not being able to have a good feeling for the subtle intuitive differences that are encoded in the language which need to be tapped. In addition, I am not able to generate native-like texts of encoding idioms spontaneously, the way I can when I am investigating an issue in Ewe. Moreover, there is not much of the kind of mediated discourse mentioned above for Ewe that I can access. Nevertheless, it is because of the difference between the native and the non-native that I advocate collaboration not only between the two kinds of linguists as the optimal "research machine imaginable", but also between native speaker researchers and the normal speakers of the languages being documented. I believe my work on Likpe and the documentation that I can produce would be much much better if there were a trained native speaker linguist of the language to work with. I have a couple of very well trained consultants who understand the nature of linguistic work but it would be different if they were to have been formally trained in linguistics.

The rest of the paper is devoted to showing the subtle differences between native speaker and non-native speaker descriptions as reflected in the records that are available for Ewe. Before turning to the features of the description as such, I first provide some commentary on the context of the records to be compared.

3. On the 'first' records and past records of Ewe

The first descriptions of Ewe by non-native and native speaker grammarians belong to different phases in the history of Ewe linguistics. Clements (1972: 22) observes with respect to the first phase that it

> ... corresponds to the effort of creating a Standard Ewe by the members of the Bremen Mission, and includes a good deal of purely descriptive work of high quality. The dominant figure is that of Westermann, whose two monumental dictionaries (1905, 1954) span his active career as a linguist. Other studies include his grammar (1907, English translation 1930)...

It is Westermann's grammatical works which we consider to be the first record of Ewe by a non-native that we will mostly be concerned with in this chapter. These works constitute the most comprehensive grammatical de-

scription of the language and have been the standard reference works on the language ever since. Different kinds of information from these grammars have found their way into databases for typological and cross-linguistic studies.

Clements (1972: 23) further observes that:

> The second phase has been concerned largely with providing descriptive studies based on developments in structural and transformational linguistics. ... Among the more important studies … have been Ansre's studies of tonal structure (1961) and grammatical units (1966a) and several papers on tone, morphology and syntax.

These works by Ansre on the phonology (1961) and grammar (1966a) together constitute the first description of Ewe by a native speaker on linguistic principles. And it is these that we will compare with Westermann's works.

Both of these first descriptions suffer from the theoretical and linguistic climate at the time of their production. For instance, Ansre, while acknowledging the importance of Westermann's work, notes that it has some disadvantages characteristic of its era: "Theoretical inconsistencies are not uncommon and many of the categories set up seem to have no basis except a notional one derived from other languages. There are attempts to connect forms by etymologies that cannot be substantiated" (Ansre 1966a: 16).

In a review of early descriptions of Ewe, I accorded a special place to the works of Ansre, especially the grammatical description of 1966a. However, I commented that

> ... the theoretical framework employed in the grammatical description – Scale and Category, a precursor to Halliday's Systemic Functional Grammar – is outmoded and makes the work less accessible and relevant today. Nevertheless, it provides a good account of the structural properties of the language. (Ameka 1991: 5)

For these reasons, the comparison of the first records is not based on framework internal features but on substantive analytic issues that are required in a documentation that seeks to capture the 'genius' of a language.

4. Concerns in non-native speaker descriptions of a language

In this section, I will draw attention to three features of Westermann's description of Ewe which I see as properties of non-native descriptions. First,

the non-native tends to be sensitive to features of the language that make a difference to him/her. Second there is a tendency to make generalisations focusing on a norm, downplaying variation.

Third, non-native descriptions might gloss over important features that relate to the specific semantic style or the encoding idioms of the language.

(i) Sensitivity to specific features that make a difference

Characteristic of his close attention to features that make a difference, Westermann includes in his grammar a description of Ewe gestures of counting. He notes:

> The Ewe people count on the outstretched fingers, beginning with the little finger of the left hand, each being bent by the forefinger of the right hand as it is counted; the right hand is used next, and then one begins again, or else, squatting on the ground, one counts on the toes with the little finger of the right hand, so that we then have altogether an *ameŋú* 'twenty'[3]. (Westermann 1930:101)

It seems to me that since the way of counting on the fingers was different from what he was used to, Westermann was struck by the Ewe method of counting. I think that this kind of information is something that a native speaker will not easily identify as important information in a grammar. It is not all non-natives that are sensitive to this kind of information either. A perusal of different grammars on my shelf revealed that many grammarians do not say anything about the way counting is done even though they all devote pages to numbers and to quantifiers.

In discussing numeral constructions, Westermann also drew attention to two other issues in Ewe grammar. The first is the co-occurrence dependency between the numerals and the plural marker and determiners. He pointed out, using the parlance of his time, that when a noun is quantified by a numeral, the plural does not occur as in (1a). However when the quantified noun is determined, then the plural marker must occur, as illustrated in (1b).[4] Compare

(1)	a.	xɔ	gã́	eve	(*wó)	
		house	big	two	PL	
		'two big houses'				

b.	xɔ	gã́	eve	má	*(wó)
	house	big	two	DEM	PL
	'those two big houses'				

A second topic he addresses relates to the unit counter *ame*, a form which otherwise means 'person'. He does not use that label but mentions the use of the form together with the third person plural pronoun for counting pieces and copies (Westermann 1930: 99–100). Some languages in the same area as Ewe also have such unit counters but I have not found information on them in the available descriptions. I submit that Westermann as a non-native speaker was acutely sensitive to anything that might seem characteristic of Ewe.[5]

(ii) Interest in generalizations

Westermann, in describing Ewe aimed very much at stating generalisations as implied in Ansre's critique, cited above, of the connections that Westermann was drawing between forms that Ansre would not necessarily want to link. But such interest in generalisation can sometimes lead to obscurity. Let me illustrate with a rather trivial example. In (2) I reproduce the tabulations of the object pronouns in Ewe by both Westermann and Ansre.

(2) Ewe object pronouns:

à la Westermann			à la Ansre	
m	me	Sing	1	**m**
wò	you		2	**wo**
è	him, her, it		3	**i/e/ɛ**
mí	us	Pl	1	**mí**
mi	you		2	**mi**
wó	them		3	**wó**

The form of interest to me here is the 3rd person singular pronoun. Westerman represents it simply as *è* while Ansre represents the three vowels and comments in a footnote that "The phonological form of the 3rd person singular here is determined by the last vowel of the preceding syllable" (Ansre 1966a: 143, fn 12). Even though it has been demonstrated in later work (e.g. Capo 1985) that the 3 singular pronoun is better captured as a clitic *-i*, it is clear that Westermann was striving for a more general state-

ment without specifying further the details, while Ansre was more interested in representing the variants from which to draw generalisations.

(iii) Glossing over some important features

As noted earlier, Westermann's grammar is rather comprehensive, yet as a non-native speaker he missed some features of the language which one could say characterise the semantic style of its speakers. One such feature is the use of a form *-i* to mark what one might call predications, in modern parlance (see Ameka and Schultze-Berndt 2000, Ameka 2005). One domain where this marker occurs is in certain types of serial verb constructions, especially those involving accompaniment. Talking about the use of the verb *vá* 'come' in contexts to mean 'to here' Westermann (1930: 132) notes that in such cases the form *vɛ* (from *váe*) is readily used instead of *vá*. He, however, does not explain what the *-e* form is in such contexts–and in fact, as we shall see, it is better seen as an *-i* because it undergoes the same kinds of assimilation processes as the 3 SG object pronoun form. One of Westermann's examples of this usage is:

(3) wó-a-gbugbɔ-e vɛ.
3PL-POT-return-3SG come:PRED
'They will bring it back'. (my interlinear translation)

Ansre, however, noted that this form occurred with other verbs and not just *vá* and offers a preliminary analysis for the *-i* marker. He suggested that it is a redundant object marker:

> When a particular sub-class of verb expounds the final P (i.e. Predicate FKA) element in the compound class, an element occurs with it the analysis of which has so far not been completed. This sub-class of verbs is designated Verbs of motion. ... The element in question is termed the Redundant Object (Ansre 1966a: 71).

In a footnote, he explains the term "redundant object" thus: "'Redundant' because unlike other objects it has not been possible to establish that it operates as a complement in clause structure; 'Object' because in all respects it is phonologically identical with the third person singular object of the pronoun" (Ansre 1966a: 71). One of the examples illustrating the form is given in (4).

(4) É-tsɔ́ nyĕ ádą́ka dzó-e.
3SG-take 1SG:poss box leave-Redundant_Object
lit: S/he has taken my box [and] left
'S/he has taken my suitcase away'.

It seems to me that Ansre was drawing on his native speaker intuitions and introspecting about parallel structures. This led him to discover other verbs that participate in the construction. Furthermore, he saw that the realisation of the morpheme was the same as that of the third person object pronoun, as he explained in the footnote. Ansre's initial analysis has served as basis for later investigations by both native and non-native speakers (see e.g. Clements 1972, Lewis n.d., Collins 1993, Amuzu 1993). The link that Ansre makes between the-*i* marker and the 3 singular object pronoun seems to be historically founded but synchronically, it would appear that the two forms are different (see Ameka 2005). Furthermore, we owe it to Ansre's native speaker intuitions that this multifunctional marker, which has turned out to be typologically significant, was first brought to the attention of the linguistic community in a systematic fashion.

5. The precariousness of native speaker linguist descriptions of a language

By the same token, however, a native speaker could under-represent the variety of styles and expressive means available in the language by not taking account of variants beyond their own idiolect or dialect. This could be taken to extremes where a linguistic fragment from another dialect would be dismissed as not belonging to the language. Similarly, the automatic fashions of speaking that the native speaker takes for granted are seldom made explicit in native speaker descriptions. Furthermore, subtle semantic distinctions that are manifest in the use of forms that can occur interchangeably are glossed over by native speakers.

(i) The problem of representativeness and the dangers of introspection

Nasalisation of vowels is a thorny issue in Niger-Congo languages, including Bantu languages. One of the unresolved questions has been whether the proto-languages of different subgroups in the family contain an equal number of oral vs. nasalised vowels. This is also an issue in Proto Gbe, the im-

mediate ancestor of Ewe (cf Capo 1991). One source of data for the Ewe varieties is Ansre 1961. In this work Ansre claims that mid vowels are not nasalised in Ewe. This statement seems to be only true for his own Pekigbe dialect of Ewe where, as Ansre (2000: 31) in later work observes, "the high mid back vowel is not nasalised, */õ/". In many other dialects of Ewe nasalised mid vowels are distinctive. Thus some dialects have the word *lő* 'remove from fire' which is *lɔ̃́* in Pekigbe. Other words with the nasalised high mid front vowel are *dzẽ* 'red' and *fẽ́* 'young'.[6]

(ii) Some language facts are taken for granted

The automatic and self-evident nature of language use provides partial explanation for the inability of native speakers to articulate the tacit knowledge they have about subtle differences between forms. It is also partly responsible for the fact that native speakers tend to take important language facts for granted. Thus some facts, which may hold the key to important typological generalisations, are taken for granted in native speaker descriptions. A case in point is Ansre's (1966a: 168) description of the aspectual construction that, following Westermann, has been termed the "ingressive". This term is infelicitous with respect to the semantics of the construction as outlined immediately below. It is better to call it the prospective (cf. Essegbey 1999). The structure of the construction can be represented as follows:

(5) Subject - Verb - Aspectual Phrase

Ansre mentions only the forms *le* 'be.at:PRES' and *nɔ* 'be.at:NPRES' which he characterises as tense particles (see also Ansre 2000: 41) as the forms in the Verb position in the construction. Compare (6) a. and b.

(6) a.

Nyrue	le	agble	yi	gé.
uncle	be.at:PRES	farm	go	PROSP

'Uncle is going to go to (the) farm'.

b.

Nyrue	nɔ	agble	yi	gé	háfí	míe-de.
uncle	be.at:NPRES	farm	go	PROSP	before	1PL-reach

'Uncle was going to go to (the) farm when we got there' (Ansre 1966: 169)

We get a fuller picture in some non-native descriptions. Thus Westermann (1930: 80) says that "In the ingressive (i.e. intentional) /*le*/ [as in (6a) FKA] may be replaced by a verb of motion such as /*vá*/ /*gbɔ*/ 'to come', /*yi*/ 'to go'." (See examples below,) Interestingly, a description which is the product of cooperation between a non-native speaker and several native speakers offers a more adequate account. According to Rongier et al (1990: 112), "L'intentionnel est marqué par le nom locatif 'gé'. Le verbe locatif est variable. Les plus fréquents sont *'lè', 'nɔ', 'yi' [...], 'dè'* (aller) et *'gbɔna'* (revenir)."[7] See also Warburton et al. (1968).

Even though more empirically sound, the description by Rongier et al. does not offer any clues as to the semantics and usage conditions of the "variable locative verbs". The meaning conveyed by the construction varies according to the semantics of the element that fills the verb slot (see Ameka 1991, Ameka and Dakubu to appear). In a nutshell, when the verb slot is filled by either member of the locative be.at suppletive set *le* or *nɔ* the construction expresses the notion that an action is imminent or is about to happen in relation to the reference time as in (6a,b) above and (7) below.

(7) fífíá, me-le ku-kú gé kpuie.
now 1SG-be.at:PRES RED-die PROSP shortly
'Now, I am about to die shortly.' (Akpatsi 1980: 69)

When the verb is the habitual form of the directional verbs *yi* 'go' or *gbɔ* 'come.back', namely *yi-na* 'going' or *gbɔ-na* 'coming back',[8] the construction is used to describe inchoative or change in progress states of affairs as illustrated in (8).

(8) zã yi- na do-dó gé.
night go HAB RED-fall PROSP
'It is getting dark.' (Gadzekpo 1982: 26)

However, when the verb slot is filled by one of the motion predicates *tsó* 'come.from', *yi* 'go' and *vá* 'come', the construction has a motion-cum-purpose reading as in (9).

(9) Kofí tsó lã ɖe gé.
NAME come.from fish remove PROSP
'Kofi has come back from fishing.'

As Clements (1972: 64) notes *tsó* 'come.from' in this context "is not completely free of spatial reference and its use implies that movement in space accompanies the action".

The verb in the construction can also be filled by the telic verb *de* 'reach' which has a strong default reading of motion and of 'have been to a place'. The prospective construction with this verb signals that the state of affairs characterised in the clause has not been consummated: it was attempted or nearly attained. The exact reading in a context can be reinforced by the use of modifying phrases. Thus with the use of a verb-noun collocation *dó* 'put' *kpo* 'log' plus a predication marker *-i* realised in (10a) as *-e* which means 'failed' then the reading that is selected is the attempted one, while with an approximation expression such as *kloé* 'almost', it is the nearly attained sense that is prominent as illustrated in (10) a and b.

(10) a éye wò-de vo-vo gé dó kpo-e.
and 3SG-reach RED-free PROSP put log:PRED
'And she tried to be free but couldn't.' (Gadzekpo 1982: 14)

b é-ƒé ŋútí-gbalẽ de ba-biã gé klóé.
3SG-poss body-skin reach RED-macro.red PROSP almost
'Her skin was almost copper-coloured.' (Dogoe 1964: 11).

The prospective construction thus has at least four sub-constructions depending on the verb that occurs in it. One issue that has exercised the minds of grammarians about this construction is the status of the elements that occur in the predicate slot: are they verbs or are they auxiliary items (cf. Clements 1975, Fabb 1992). Acknowledging that bona fide verbs occur in the predicate slot in the construction paves the way for a more comprehensive treatment. When the full range of forms are considered, it would appear that it is more adequate to characterise the forms in the predicate slot as verbs. When only the 'be.at' suppletive set is considered there is a tendency to emphasise the auxiliary status. Neglecting to mention the other verbs can thus lead to biases in the analysis.

Another phenomenon in Ewe that has been approached in slightly different ways by native and non-native speakers is that of the so-called inherent complement verbs. They are first discussed in any serious way by Clements (1972) who, drawing on observations of a native speaker pedagogical grammarian writing in Ewe, introduces the phenomenon as follows:

> Baeta [1962] ... has drawn particular attention to the importance of idioms in the Ewe lexicon. She contrasts non-idiomatic verbs such as *tɔ́tɔ́* 'mix up' whose meaning is relatively stable whatever its object with idiomatic verbs like **fú** which frequently form a single unit of sense with their object, so that the total meaning of the expression is a function of both elements together:
>
> a. Kofí *fú* du
> running
> 'Kofi ran.'
>
> b. Kofí *fú* tsi
> water
> 'Kofi swam.'
>
> c. Kofí *fú* dzo
> fire
> 'Kofi warmed himself.'
>
> d. Kofí *fú* así nú
> hand thing
> 'Kofí slapped something.'
>
> e. Kofí *fú* ta nú ŋú
> head thing outside
> 'Kofi set about something.'
>
> She proposes the term 'helping noun' ... to distinguish such lexically specified nouns from unspecified ones. (Clements 1972: 206)

It is verbs like *fú* 'move limbs in a medium' which have come to be known as inherent complement verbs. One sense in which to understand the idiomaticity of the verb-noun collocations is in the sense of encoding idioms à la Makkai (1972) where the interpretation of the collocation can be compositionally derived. Nevertheless such idioms have to be learned.

Perhaps because it is possible to interpret them compositionally, Ansre (1966a) did not mention them. When I recently asked him about this "omission" he said that he did not see anything special about these verbs, i.e. nothing different between what Baeta calls non-idiomatic and idiomatic verbs in Ewe. Here we have one native speaker (not necessarily a trained linguist) being influenced by the difficulty of rendering some verbal expressions into English and therefore calling them idiomatic, and another native speaker, trained in linguistics, not seeing them as special or idiomatic. Because the mode of expression is different from the one familiar to him as a non-native speaker, Clements devotes special attention to it. Thus native speakers depending on their training can produce different descriptions with different interpretations of the facts of their language. Indeed one could interpret the form *fú tsi* as 'to swim' as being derived from the mean-

ing of the verb 'move limbs in a medium' where the object specifies the medium as water. Using pragmatic principles of various kinds such as the neo-Gricean Informativeness and Quantity heuristic principles (Levinson 2000) one can understand the phrase as meaning 'to swim'.

In a sense, Ansre's intuition has been confirmed in an extensive study of these verbs by another native speaker James Essegbey (Essegbey 1999). He shows that verbs with general semantics tend to obligatorily require a complement to restrict their application. Furthermore, Ewe, he argues, is a "hypertransitive" language with a substantial part of the verb lexicon requiring a complement for the expression of various meanings. The complements in such structures are bona fide objects. They can be promoted to subject function in a capability experiential passive-like construction. Thus to express an idea like 'Kofi enjoys swimming' an alternative construction to *Kofí fú tsi* 'Kofi swam' is used with *tsi* 'water' as subject and Kofi coded as an oblique dative object, as in (11).

(11)	Tsi	nyá	*f*ú-ná	ná	Kofí
	water	MOD	move.limb-HAB	DAT	NAME
	Lit: water is limb-moveable for Kofi'				
	'Swimming is enjoyable to Kofi.'				

Similarly, such verb plus complement phrasemes can take a further object and the resulting construction is a double object construction as in Kofí *f*ú así nú (lit: Kofi move-limb hand thing) i.e. 'Kofi hit his hand against something'. Such structures conform to one type of double object construction in the language. This can be demonstrated by the nominalisation of the verb phrase involving the two objects where the first object is preposed to the verb and the second object appears adjoined to it as in the prospective aspectual sentence in (12).

(12)	Kofi	le	asi	*f*ú	gé	nú.
	NAME	be.at:PRES	hand	move-limb	PROSP	thing
	'Kofi is going to hit his hand against something'.					

Furthermore, the complements can be pronominalised and since they have object functions they are realised in the objective form as in (13a) where the first object is pronominalised and in (13b) where the second object is pronominalised.

(13) a. Kofi *f*ú-i nú
NAME move_limb-3SG thing
'Kofi hit it (sc. his hand) against something'

b. Kofi *f*ú así-i
NAME move_limb hand-3SG
'Kofi hit his hand against it'

It turns out, therefore, that something that seemed so obvious to a native speaker and therefore was ignored has something to say about transitivity. There is a strong suggestion that because of the behaviour of the so-called inherent complement verbs Ewe and similar languages of West Africa fall outside typologies which see languages as fundamentally intransitive or fundamentally transitive (Nichols 1982, Nichols et al 2004). For the same reason, it appears that these languages make use of two place constructions in spontaneous discourse more than has been reported for, say, English by Thompson and Hopper (2001).

6. The contributions of "first" records

In the foregoing sections, I have indicated some tendencies that we find in native speaker and non-native speaker descriptions that make them different. In this section I want to correct the impression I may have created that there was no common ground between the two types of descriptions. With specific reference to the works of Westermann and Ansre that are the focus of this chapter, one important feature that they share is that they are the foundation descriptions of Ewe by a non-native speaker and a native speaker respectively. Their impact on Ewe linguistic description and general linguistic theorising is enormous and similar, as will become evident in the course of this section.

(i) They foreshadow a lot of current theoretical discussion

As foundation records, the descriptions by both Westermann and Ansre set the agenda for further investigation, either singularly or when their views are taken together. Sometimes both authors give opposing views, which allow for exploration of the facts. Two areas where the works of Westermann and Ansre have provided meat for research are on the adjective cate-

gory and on serial verb constructions and grammaticalisation both in Ewe and cross-linguistically. I will take each of these in turn.

(a) The adjective category in Ewe

Westermann (1930: 183) sums up his view on the adjective category in Ewe as follows:

> There are no words which are adjectives pure and simple. All expressions which serve as adjectives are either (1) also substantives or formed from substantives or (2) actually verbs or formed from verbs or (3) combinations of verbs and substantives or (4) also adverbs or (5) picture words [i.e. ideophones FKA]

Ansre (1966a: 213) counters this view by commenting that:

> The assertion by Westerrmann that "there are no words which are adjectives pure and simple" is inaccurate and must be attributed mainly to lack of sophistication in tonal analysis and too great a tendency to etymologise.

However, Ansre's treatment in which he distinguishes between simple and multi-morphemic adjectives also obscures the important distinction between ideophonic and non-ideophonic adjectives in the language. The multi-categorial nature of ideophones is such that forms that may be categorised as adjectives can also function without any change in form as verbs, adjectives or adverbs depending on their syntactic position in the clause. It is this behaviour that is probably partly responsible for what Westermann says about adjectives. Thus one of the simple adjectives that Ansre gives can function as an adjective in (14a), a verb in (14b) and an adverb in (14c).

(14) a. [ŋútsu **tralaa** lá]$_{NP}$ [vá]$_{VP}$
man thin.and.tall DEF come
'The tall and thin (lanky) man came.'

b. [ŋútsu lá]$_{NP}$ [**tralaa**]$_{VP}$
man DEF thin.and.tall
'The man is tall and thin (lanky)'

c. [ŋútsu lá]$_{NP}$ [kɔ́]$_{VP}$ [**tralaa**]$_{AP}$
man DEF be.tall thin.and.tall
'The man is tall in a tallish-thinny (lanky) manner.'

Later research has established that apart from the ideophonic adjectives of the kind illustrated in (14a), Ewe has a small set of non-ideophonic underived adjectives. There are five such adjectives. They are listed in (15).

(15)	gã	'big'	ví	'small'	(DIMENSION)
	vɔ̃	'bad'			(VALUE)
	ɣí	'white'	dzĩ/ dzẽ	'red'	(COLOUR)

Thus, contra Westermann, there are adjectives pure and simple in Ewe.

In addition, Ewe has a plethora of processes for deriving adjectives: suffixation as in (16a), reduplication as in (16b) and compounding as in (16c).

(16) a. the addition of a deverbal adjectivalising suffix – í to a verb
nyó 'become good' + *í* → *nyóé* / *nyúí* 'good' (Adj)

b. verb reduplication where the copy maintains the tone of the stem plus the addition of a high tone suffix (HTS), indicated here and in (16c) by an acute accent after the word.
fá 'become cold' + RED + HTS → *fáfá´* 'cool, cold' (Adj)

c. compounding of a verb and its complement plus a high tone suffix
nyá 'come.to.know' + *nú* 'thing' + HTS → *nyánú´* 'clever' (Adj)

The derived adjective in (16a) *nyóé* / *nyúí* 'good' has taken on the properties of the underived adjectives such as nominalisation by Low tone prefix probably in order to fill the gap in the VALUE terms in the system of underived forms (see Ameka 1991, 2001 and 2002).

(b) Serial verb constructions and grammaticalization

Anybody familiar with the literature on serial verb constructions will be struck by the perceptive comments that Westermann (1907) made about this phenomenon in Ewe.[9]

> Eine Eigentümlichkeit des Ewe besteht darin, daß es gern eine Reihe von Verben unmittelbar aufeinander folgen läßt ... Im Deutschen werden diese aufeinanderfolgenden Verba zum Teil durch zusammengezogene Sätze oder Satzgefüge wiedergegeben. Sehr oft können aber auch mehrere Verba des Ewe im Deutschen durch ein einziges ausgedrückt werden. Der Eweer beschreibt nämlich jede Handlung, jeden Vorgang in allen Einzelheiten von Beginn bis zum Ende and drückt jede solche Einzelhandlung durch ein besonderes Verbum aus; er zerlegt jede Handlung in ihre Teile und bringt jeden Teil für sich zur Darstellung, während wir im Deutschen nur die Haupthandlung herausgreifen und sie durch ein Verbum ausdrücken, während alle Nebenhandlungen entweder ganz unberücksichtigt bleiben oder mittels einer Präposition, eines Adverbs, einer Konjunktion oder einer Vorsilbe des Verbum etc. wiedergegeben werden. (Westermann 1907: 94–95)

The description and explanation offered in both the German and English versions have influenced and generated research in serial verb constructions not only in Ewe and other West African languages but also in Creole languages (e.g. Sebba 1987). To my knowledge there has not been any more sophisticated explanation given for the phenomenon of serialisation than the one given above here. Furthermore, the issues that continue to be debated in the literature follow from those raised in Westermann's (1907, 1930) quote above: Do serial verb constructions (SVC) code single events? Which arguments do verbs in an SVC have to share? Do all arguments have to be realised? Do verbs in an SVC have to share the same tense and aspect? (See Dechaine 1993, Durie 1997, Crowley 2003, Ameka 2003, 2006 for overviews of some of the current issues.)

Similarly, even though Westermann had already observed the process of grammaticalisation of verbs in progress (Westermann 1930: 129 ff), it was Ansre who cautioned that it is not every combination of verb forms in a clause that should be considered a serial verb construction (see especially Ansre 1966b). He suggested that the verb forms which did not occur with the full set of verbal properties, when in combination with other verbs, be called verbids. By this he launched a further search for defining criteria of SVCs and of the properties that determine verbal status in an SVC (cf. Bamgbose 1974, 1982, Essegbey 2004) and see also the cross-linguistic exploration of this issue in Lord (1993), for example.

The records of Westermann and Ansre on Ewe have thus laid the foundation not only for further exploration of Ewe linguistic structures, but also for cross-linguistic and typological studies. They have enduring relevance.

(ii) They tend to be incomplete in their coverage

Despite their enduring relevance, the records by Westermann and Ansre are also similar in providing restricted coverage of some topics, data and analyses. A case in point is the account provided for the perfective adverbial marker *vɔ* which is a grammaticalised form of the verb *vɔ* 'finish'. The perfective marker is described as signalling the completion of a state of affairs characterised in the clause. A few important things are left implicit or not mentioned at all. First, as a marker of completion, it predictably does not co-occur with states. Second, the perfective marker has a vague reading when it occurs with processes that have a terminal end point: it can either mean the situation has been completed or is about to be completed, as illustrated in (17).

(17) Míe-ɖó afé vɔ
1PL-arrive home PFV
'We have arrived at home.' / 'We are about to arrive at home.'

Third, the perfective marker can be triplicated to signal without any doubt the imminent completion rather than the total completion of an event. Thus if the perfective marker in (17) were triplicated the only interpretation possible is as shown in (18), see Ameka (1988) for further details.

(18) Míe-ɖó afé vɔvɔɔ-vɔ
1PL-arrive home TRIP-PFV
'We are about to arrive at home.'

(iii) They tend to become canonised and their misanalyses etc. are repeated

One of the most dangerous things about authoritative and influential foundation records of the kind that are being compared in this chapter is that their misanalyses which pertain to some theoretical or typological point are repeated over and over again in the literature. What is even worse is that theories and generalisations are built on such mistakes. These are very hard to correct. One example from the work of Westermann which has found its way into the grammaticalisation literature relates to the putative development of an adverbial particle *ɖí* 'down' from a verb *ɖi* 'go down, descend' (see e.g. Heine et al. (1991, 1993); Lord (1993:228); Heine and Kuteva

(2002)). The careful reader would have noticed the difference in tone and also noted that tone is distinctive in Ewe. The tonal difference between the two forms is reflected in Westermann's representation: He represents the verb form without any diacritic indicating that it is a low tone verb, but in the sentence that is meant to exemplify the grammaticalised form of the verb, the form is marked for high tone. This is reproduced below.

> *ɖi to go down, to lay down*, after another verb often means *down* and also *beforehand*; in such cases it is not conjugated [i.e. it does not take any verbal markers such as the potential as in (19) FKA]

(19)

ma-tsɔ́e	(á)-da	ɖí.
1SG:POT-take-3SG	POT-throw	down

'I shall put it down' (Westermann 1930: 130; interlinear gloss added FKA)

Drawing a link between two forms that have different tones could be seen as an example of the lack of attention to tonal differences that Ansre criticised Westermann for. Westermann did not make any comment about the difference in tone between the two items. Even though he did not do this, the modern analysts who cite these forms should have been struck by the tonal difference and it should have made them raise questions. But no, the same example is repeated over and over again to illustrate a development that is conceptually motivated and is attested in other languages.[10] My point here is that Ewe does not provide an example for this grammaticalisation chain. The only reason this example is so prevalent in the literature is because it can be traced to Westermann who is otherwise a good source of data. It seems to me that a well-trained native speaker who can draw on their intuitions and feel the difference between the two forms would be less likely to copy such a mistake. The grammaticalisation theorists can be forgiven for not having access to such intuitions. But they cannot be forgiven for uncritically perpetuating a misanalysis.

Observe that establishing that two or more forms are related via grammaticalisation involves first identifying their forms. If the forms are the same but have functions that are conceptually related then one can be sure. If the forms are different, as is the case with the *ɖì* and *ɖí* forms, then unless one can demonstrate that the forms can be linked by some independent morpho-phonological process, one cannot claim that one evolved from the other. In the case at hand, it would be necessary to explain the source of the

high tone on the supposed new form. Justifying such links requires more than just being a native speaker. It requires some training and also some knowledge of how things work in other languages.

From the vantage point of a trained native speaker linguist, I suggest that the adverbial particle *ɖí* 'down' is not related to the verb *ɖi* 'to go down' but rather to the preposition *ɖé* 'ALLative' (that ultimately is the grammaticalised form of the verb *ɖé* 'reach, enter'; see Ameka 1995, Aboh et al. in press for the details). The particle is the result of the fusion between this prepositional form and the ambient pronominal *-i*. An alternative and a synonym of the sentence in (19) is (20).

(20)	ma-tsɔ́e	(á)-da	ɖé	anyí.
	1SG:POT-take-3SG	POT-throw	ALL	ground
	'I shall put it down.'			

In (20) the complement of the allative preposition is the generic and ambient nominal *anyí* 'ground'. The idea is that the pronominalised form of the prepositional phrase *ɖé anyí* 'towards the ground' is *ɖí* 'down' which comes from *ɖé-i* 'ALL-i'. The derivation of the *ɖí* 'down' form from the preposition plus the ambient pronominal is rather simple. First, as a general rule, when two vowels occur in a sequence of this kind the underspecified vowel /e/ tends to be elided and if the tone is High it is maintained and absorbs the tone of the subsequent vowel. This is what has happened in this case. In fact a similar thing happens with the realisation of the prepositional phrase *ɖé anyí* in (20), which is pronounced [ɖányí**]**. Thus the vowel /e/ is elided and the *i* form of the pronominal takes its place and its tone. Second, and this is to motivate the case for the ambient pronominal: the ambient pronominal tends to be used in other contexts in place of the generic nominal *anyí* 'ground'. For instance, there is a parallel between the two forms in the expression of existence. For generic and present existence the form *li* 'exist' is used, which is the result of the fusion of *le* 'be.at:PRES' and the ambient *-i*, and for past existence the non-present form of the 'be.at' verb *nɔ* is used with the generic nominal complement *anyí* 'ground'. Compare the sentences in (21).

(21)	a.	ga	li.
		money	be.at:3SG
		'There is money.'	

b. ga nɔ anyí tsã́
money be.at:NPRES ground formerly
'Formerly, there used to be money.'

In my view, there is a more interesting grammatical change process here which has not been talked about in the literature, just because the analysts failed to spot the mistake in Westermann. What is disturbing is that grammaticalisation experts seem to have accepted as an article of faith any example of a plausible development without arguing for each case in its own terms, and from the language internal point of view. Beware of foundation records or any records, they may contain some inaccuracies!

To minimise 'mistakes' of this kind being circulated in the linguistic literature, we need good training for linguists. We also need collaboration between trained native speakers and non-native speakers to draw out the "soul" of the languages being described. I will return to this issue of training in the conclusion. Before that, I want to illustrate the advantages of such a vision by discussing the analysis of disjunction markers in Ewe. It will emerge that native speakers on their own and non-native speakers on their own give only partial accounts of the forms, but with a cumulative understanding of the issues based on both traditions and with a better appreciation of the distinctions involved, a more holistic picture of disjunction marking in Ewe is attained.

7. An illustration

Bolinger (1977: ix) observes that any word or construction that a language permits to survive must make its semantic contribution, however subtle (see also Wierzbicka 1988). Yet both native speakers and non-native speakers tend to overlook such distinctions and are content with saying that forms are used interchangeably. Sometimes this is because the distinctions are rather minute. This attitude may be a shortcoming of both native speaker and non-native speaker grammarians, as I will show immediately below. However, I consider it to be a more serious problem in native speaker descriptions since as was cited above, the native speaker is expected to have "those flashes of insight" which should make a difference. The native speaker should be able to give some comments on forms that seem to be used interchangeably. The non-native can be forgiven for not having those

intuitions. And this is prima facie case for collaboration between both native and non-native speaker linguists.

I illustrate this with the treatment of disjunction in various descriptions of Ewe. Duthie (1996: 47) sums up the issue as follows: "The alternation [between noun phrases] is usually marked by *aló* or *lóo aló*". Westermann (1930: 111) suggests that the double form tends to occur in interrogative contexts. As he put it: "In questions *aló* is often preceded by *lóo*".

These statements from non-native speakers are a bit more instructive than what we get from some of the native speakers. Ansre (1966a: 134–5) suggests that the two forms are free alternants: "*aló* has an abbreviated form *lóo* with which it freely alternates." Similarly, Kangni (1989: 45), a native speaker of Gen, the neighbouring Gbe variety of Ewe, in which disjunction is also marked in identical ways to Ewe, comments as follows on the Gen situation:

> [le disjonctif *aló*] sert á marquer la disjonction ou l'alternative. Pour souligner le contraste dans la choix il est souvent précédé du morphème emphatique *lóó*. C'est avec cette combinaison que nous le trouvons dans les énoncés interrogatifs.[11]

The difficulty with these accounts is that they are half-truths and more seriously that there is no attempt to explain the so-called free variation or co-occurrence between the forms. In fact when one examines the use of these forms in discourse, it becomes apparent that there are actually three forms for marking disjunction in Ewe and Gen.

The first is the form *aló*, whose message is that the choice of one alternative or the other in the context does not make a difference to the overall point being made. For this reason the alternatives that it links are either synonyms or paraphrases of each other. For example, both disjuncts in the excerpt below refer in the context to the same body part – the back– but they have different perspectives. *Dzime*, literally 'containing region of the heart', is the general word for the combined chest and back region on the body. In particular uses, the front part or the back part can be highlighted. By contrast, *tume*, literally 'the containing region of the liver' refers exclusively to the back part of the body.

(22) É-ga-xɔ abi búbu hã ɖé é-*f*é dzime aló tume.
3SG-REP-get wound other also ALL 3SG-poss torso DISJ back
'He also received another wound in his chest or back.'
(Ayeke 1974 [1283])

The second disjunctive marker is *lóó*. It is used to link alternatives where the speaker does not know which of the choices is the case. This has an ignorative sense associated with it as in:

(23) Dze ka-wó Hobianu ɖó ná wo lefulélé
conversation CQ-PL NAME set DAT 2SG LOC enmity

si le éya kplé ame áɖé dome
REL be.at:PRES 3SG and person INDEF among

tsó ga-nya lóó nyɔ́nu-nya áɖé ŋútí?
ABL money-matter DISJ woman-matter INDEF outer.surface

'What conversation did Hobianu have with you about an enmity between him and someone else either because of financial or love matters?' (Ayeke 1974 [399–400])

Because of the ignorative sense *lóó* tends to be combined with *aló* as a linker between two things, one or both of which could be assumed to be the relevant one in the context, but the speaker is not certain of this. For example, a detective is trying to probe the memory of his addressee to see whether she would remember any conversations with her grandfather that would give some clues to the motives of his killer in the excerpt in (24).

(24) â-té ŋú á-nyé fi-nya
3SG:POT-press skin POT-COP theft-matter

lóó aló ame-wu-nya búbu hã faa.
DISJ DISJ person-kill-matter other also freely
'It could be a theft case or even a murder case.' (Ayeke 1974 [1405])

This is what has led to the use of the third form of the disjunction marker *lóo aló* in interrogative contexts, as pointed out by Westermann, as in (25). Not surprisingly, the double form is used in embedded contexts introduced by knowledge related verbs as well.

(25) Tɔ dzí-é lóó, aló ya me-a?
River upper.surface-aFOC DISJ DISJ air contai-ning.region-Q
'Is it on sea or is it in the air?' (Hlomatsi 1994 [2866])

Some support for these claims comes from the other uses of the markers independent of each other: the *lóó* marker is used as an utterance final particle marking propositional questions and *aló* is used as a disjunctive tag as illustrated below (see Ameka 1998).

(26) Xɔmekú biá-e bé ye srɔ-é gblɔ nya má-wó
NAME ask-3SG QV LOG spouse-a.FOC say word DEM-PL

nɛ lóó?
to:3SG DISJ
'Xomeku asked him if it was her husband who told him those things or?'
(Ayeke 1974 [2604])

(27) mía-ɖa te-a, aló?
1PL-cook yam-DEF DISJ
'We will cook the yam, or?' (an overheard question)

Furthermore, *aló* is used as a discourse connective introducing or linking following propositions as alternatives to the preceding ones. For instance, in excerpt (28), a detective is wondering about the circumstances surrounding a murder and weighing different possibilities. The proposition immediately preceding the excerpt translates as: Even though he was very strong because he was properly fed, when he died people would just say he has gone back home:

(28) Aló mé-le é-me nenémá o-a?
DISJ 3SG:NEG-be.at:PRES 3SG-containing.region thus NEG-Q
'Or is it not so?' (Ayeke 1974 [1897])

It should be evident that one cannot describe these forms as mere variants since they each have a life of their own. Admittedly, the kinds of subtle distinctions that I have pointed out here are not easy to discover. Nevertheless a native speaker should be able to use a combination of introspection and corpus study to untangle such differences. For this the native speaker needs to be trained in how to use corpora and also to have some idea about the way other languages work. For instance, some knowledge of the cross-linguistic occurrence of grammatical polysemies involving disjunction and interrogative functions e.g. as occurs in Akan, or of disjunction and attitudinal marking functions, e.g. as occurs in German would provide reinforcing evidence for the analysis of the Ewe disjunction markers outlined here.

Perhaps this illustration provides an indirect clue as to how collaboration between trained native and non-native speaker linguists might work in the description of a language. Mosel (this volume) points out a practical approach to the mode of description that could be adopted in grammar writing independent of whether the grammar writer is a native speaker or a non-native speaker. It seems that if the team of grammar writers is made up of trained native speaker and non-native speaker linguists it might be useful for the non-native speaker to tackle the structural or semasiological aspects while the native speaker contributes the onomasiological aspects. Then the roles can be reversed. An element of this mode of collaboration seems to be implied in the comments of Miestamo (2004) in a recent review of Blackings and Fabb (2003). He attributes a praiseworthy feature of the grammar to the fact that it is the product of both a native speaker (Blackings) and a non-native speaker (Fabb). He notes:

> Often several alternative translations are given below examples. This welcome practice, rarely seen in reference grammars, highlights the fact that isolated examples can have different interpretations in different contexts. This is of course made possible by the fact that one of the authors is a native speaker (a grammar written by nonnative speakers is more dependent on the translations taken from the real discourse contexts of the examples). (Linguist List issue 14.3284)

There is some advantage in native speaker and non-native speaker collaboration.

8. **Conclusion**

An important task of linguistics in the present millennium is the description and documentation of the languages that are still around. Such descriptions should be of very high quality–they should be faithful to the data and they should be theoretically informed. Above all they should be presented both in terms of the metalanguage of description and in terms of the records in ways that are long lasting, replicable and verifiable. This is the only way to preserve the linguistic part of the world's cultural heritage in its diversity. What kind of linguist is the best to undertake such a job? Some would say a trained native speaker linguist. Others would say a trained non-native speaker linguist. I will continue to say the real description, the optimal record of a language, is the outcome of a collaborative effort, not only between trained native and non-native linguists but also between these linguists on the one hand and the normal speakers of the language. I have indicated the differences and similarities between the descriptions of both types of linguists. I hope I have thereby made the case for the need for collaboration between both types of linguists. I am not the first to have suggested this. The eminent linguist Eugene Nida makes a similar case for collaboration between linguists, be they native speakers or non-native speakers, and trained consultants. He writes:

> ... collaboration between a linguist and a trained informant can result in significantly more satisfactory results. This is not merely a matter of two heads being better than one, but of collaboration between two persons with complementary skills and knowledge ... Even when a linguist is working on his own mother tongue it would be important to check items constantly with a trained informant (Nida 1981: 173)

Many non-native linguists are aware of their limitations and gladly defer to native speaker linguists to probe certain aspects of the language that they think require native speaker expertise. Recently, Bob Dixon conceded that he could not discover a distinction in the nominal system of Jarawara, a language of Brazil that he has written a grammar of. He thought "a well trained native speaker linguist might be able to find the difference, I cannot." This comment was made during a presentation at the International

Workshop on adjective classes at the Research Centre for Linguistic Typology, La Trobe University (August 2002), (see Dixon 2004).

Throughout the chapter, the point has been made that the linguist, be they native or non-native speakers of the languages they are describing, should be well trained. One may well ask how this training should be carried out. I wish to end the chapter with the words of wisdom of Mary Haas who has been described as a "real linguist to the nth degree" (Dixon 1997b). She trained many linguists and produced many descriptions of languages. Unless linguists, whether they are working on their own language or another language, are exposed to other languages and are trained in analysis and argumentation, and unless there is collaboration between non-native linguists and trained native speakers, there is no hope that the records that are being produced will serve the purposes for which they are much needed. It is my hope that linguistics departments in universities around the world will incorporate some of the ideas articulated here by Mary Haas in their curriculum:

> ... a student's primary task should be to learn to analyse and describe a language. ... Although a semester's study of "a particular language" is very valuable, some one language should preferably be studied over a considerable period of time. ... this should be a language other than one's native language - even better, a language unrelated to one's native language. Notice how this contradicts one of the principles that was so heavily stressed a few years ago, namely that only a native speaker could analyse his own language. Of course information must come from a native speaker, but the above restriction also limits knowledge. *We gain insight from the outside looking in as well as from the inside looking out.* (Mary Haas 1984: 69 emphasis added FKA).

Notes

1. Some of the ideas expressed here were first aired in an invited contribution to a workshop on 'The best record' organised by the then Cognitive Anthropology Group (now the Language and Cognition Group) at the Max Planck Institute for Psycholinguistics, Nijmegen, in October 1995. I am grateful to the audience at that workshop for their comments and enthusiastic reception of the ideas. I am especially indebted to David Wilkins for the invitation, suggestions and discussions on the topic. I salute the many non-native speakers who have worked and continue to work on Ewe, my language. I am also grateful to Alan Dench and Nicholas Evans for comments on earlier versions of the chapter.
2. In the post-modernist turn one does not expect anybody to be able to evaluate any ethnography objectively. Ethnographic descriptions are seen more as accounts of particular practices within communities of practice including the ethnographer as an agent.
3. I should point out that this term which literally means 'on a person' is archaic and thanks to Westermann's record some of us know the term today. The modern term used for twenty is *blá-eve* literally 'tie two', also reflecting another reckoning practice of counting in sets of ten.
4. The following abbreviations are used in the interlinear glosses: ABL = ablative preposition; ALL = allative preposition, COP = copula; CQ = content question marker; DAT = dative preposition; DEF = definiteness marker; DEM = demonstrative; DISJ = disjunctive; aFOC = argument focus marker; HAB = habitual aspect marker; INDEF = indefiniteness marker; LOC = locative preposition; LOG = logophoric pronoun; NEG = negative; NPRES = non-present; PFV = perfective aspect marker; PL = plural marker; poss = possessive linker; POT = potential; PRED = predication marker PRES = present; PROSP = prospective aspect marker; Q = question particle; QV = quotative marker; RED = reduplicative formative; REL = relative clause introducer; REP = repetitive; SG = singular; TRIP = triplicative; 1 = first person; 2 = second person; 3 = third person.

   High tones are marked throughout with an acute accent in addition to the low tones that are customarily marked in the traditional orthography with a grave accent. The hacek marks a rising tone. Ewe orthographic *f* and *v* are the voiceless and voiced bilabial fricatives respectively.

   Examples are sometimes drawn from Ewe texts. Examples taken from texts that are available in electronic format are referred to by the author, year and the concordance line in square brackets (e.g. Hlomatisi 1994 [001]). Examples taken from texts that are available in paper form are referred to in the normal author plus date and page number fashion. Examples without any reference are supplied by the author.

5. It could also be argued that the different nature of the logophoric pronoun in Ewe and other African languages to the systems from familiar Standard Average European languages played a role in putting it on the linguistic agenda. The comprehensive description by Clements (1979), a non native speaker, has served as an important seminal work in this regard.
6. It appears that the non-nasalisation of mid-vowels in Pekigbe is due to its contact with Twi (Akan) which does not also have nasalised mid-vowels. Peki has some other features which one can attribute to its intensive contact with Akan in the 19th century (see Ameka 2004).
7. The intentional is marked by a locative nominal gé. The locative verb is variable. The most frequent are *lè, nɔ, yi* [...], ***dè*** (go, reach) and *gbɔna* (returning) (my translation).
8. These are the two verbs in the languages which, in the habitual, have a progressive reading and it is the progressive reading that is relevant for the interpretation of the prospective construction as expressing the inchoation of a situation.
9. The same point is made in the English version which is quoted here to serve as a translation of the German text: 'a peculiarity of Ewe is that we often find a row of verbs one after the other. The chief features of this are that all the verbs stand next to each other without being connected, that all have the same tense or mood, and that in the event of their having a common subject and object, these stand with the first, the others remaining bare: should a conjunction stand between two verbs, the subject and object must be repeated. The explanation of this is that the Ewe people describe every detail of an action or happening from beginning to end, and each detail has to be expressed by a special verb: they dissect every happening and present it in its several parts, whereas in English we seize on the leading event and express it by a verb, while subordinate events are either not considered or rendered by means of a preposition, adverb, conjunction or a prefix of the verb.' (Westermann 1930: 126)
10. A development of this kind has occurred in Mparntwe Arrernte (Australian): **kerle-me* 'descend' > *-kerle* 'downwards' (David P. Wilkins p.c.).
11. The disjunctive *aló* serves to mark disjunction or alternation. To indicate the contrast in the choice, it is preceded by the emphatic morpheme *lóo*. It is in this combination that we find it in the interrogative utterance (my translation).

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Realizing Humboldt's dream: Cross-linguistic grammatography as data-base creation

Dietmar Zaefferer

1. The idea of the Cross-linguistic Reference Grammar database[1]

1.1. Humboldt's dream

In his *Einleitung in das gesamte Sprachstudium* ('Introduction to the general study of language,' 1810/11), Wilhelm von Humboldt complains about the lack of a general comparative grammar and the abundance of judgements that all too obviously lack the firm ground of properly established leading ideas.[2] Almost two hundred years later we know much more about language, but the project of a general comparative grammar based on the firm ground of properly established leading ideas is still far from completion and the issue has become much more urgent given the increasing speed of extinction of languages in the course of globalization. Fortunately, there are several projects under way that are working on this huge task. One of them is CRG, the Cross-linguistic Reference Grammar database project.[3] One way of describing its basic idea is that it strives to make Humboldt's dream come true. The CRG enterprise goes back to a joint initiative of Bernard Comrie, Bill Croft, Christian Lehmann and the author of this contribution at the end of the eighties and in the beginning nineties (cf. Comrie et al. 1993, Zaefferer 1998). The aim was to create some kind of revised electronic version of the famous Lingua descriptive studies questionnaire (Comrie and Smith 1977), a framework for the description of human languages of any type.

Any realization of Humboldt's dream has to come to grips with three fundamental problems:

i. The comparability problem
ii. The typological bias problem
iii. The theoretical bias problem

In order to get an idea of the first problem (the other two will be taken up in the subsequent sections), imagine a library with about 7000 grammars of the world's languages including the Routledge Descriptive Grammars (DG), the publications of the Mouton Grammar Library (MGL) and many, many others. That would be a rather impressive accumulation of linguistic knowledge and an ideal place for cross-linguistic research. But when one thinks about doing practical work, it quickly turns out that even in that ideal place it would be rather time consuming to reach reliable conclusions about the diversity or uniformity of so far existing manifestations of the human language faculty.

First one might object that for many purposes such as the discovery of preferences or statistical universals, there is simply too much information: In such a context an exhaustive search is not necessary and a representative sample would be sufficient. But this is not a real objection because having too much information is not a problem as long as it does not interfere with quick accessibility.

The real problem is still lack of information: Even the incredible amount of information in that imaginary library is not enough to ensure reliability of cross-linguistic work since what is missing is metainformation: As long as it is not clear that the terminology used in grammar *A*, say Evans' MGL grammar of Kayardild, is the same as the one used in grammar *B*, say Fortescue's DG description of West Greenlandic, i.e. that they are based on the same cross-linguistically valid operationalizations, there is plenty of room for misanalysis. Both *faux amis* (ambiguity: use of the same terminological label for different concepts) and *faux ennemis* (synonymy: use of different labels for the same concept) occur again and again and are a big obstacle for the proper comparison of languages.

Another kind of metainformation is organizational in nature: How are all the examples and partial descriptions organized into a whole? This problem has been solved in the DG series by the use of a common table of contents, but not in the MGL volumes. The latter have the advantage that they are able to evolve but pay the price of problematic comparability, the former have the advantage of high comparability at the expense of being outdated in their structure (cf. Comrie 1998). This seems to be a dilemma that cannot be solved in the realm of paper grammars and that therefore requires

a migration to electronic grammars (for a comparison of the two cf. Zaefferer 1997), where updates and reorganization are much less expensive.

1.2. Advantages of an electronic database format

The first and probably most important advantage of an electronic database format over a paper grammar is its flexibility. The Comrie/Smith questionnaire of 1977 could of course be changed, but at the expense of comparability: All grammars that have appeared so far would have to be reprinted with the new table of contents and with added or rearranged information. The latter problem persists with the electronic format, but improving on the structure is much easier and no reprinting is necessary although printouts are of course always possible. As Comrie (1998: 14) rightly points out it is important that new advances in linguistic theory and our understanding of cross-language variation can be more readily incorporated into the framework and that existing descriptions can be rather easily supplemented in the relevant respects.[4]

The second advantage lies in the organization of the information in the database. Here the CRG project has opted for a systematics or ontology of linguistic phenomena that is mainly based on two kinds of relations, taxonomic and meronomic ones. Therefore the database structure has the form of a tree with three kinds of edges: BE-edges for the taxonomic relations (a negative clause is a clause), HAVE-edges for the meronomic relations (a negative clause must have a negation marker) and optional edges for the rest (a negative clause may have a secondary negation marker).

The third advantage lies in the relative independence of the way the information obtained from the database is displayed from the organization of the information in the database. Whereas the information in, e.g., the Descriptive Grammars is primarily organized by languages, and only secondarily (via the shared table of contents) by linguistic subsystems and phenomena, a database can handle this 'vertical' kind of organization with the same ease as a 'horizontal' kind of organization where, e.g., vowel inventories are described across languages and then consonant inventories. With the migration to an electronic database difficult publication decisions (grammars of entire languages versus comparative studies of subsystems) turn into simple display options which can be ranked at will.

2. Language description and the challenge of general comparability

Some theoretical linguists tend to look down at mere language description. Explanatory adequacy is more ambitious than descriptive adequacy, therefore it seems to be more interesting.[5] But that does not mean that descriptive adequacy can be neglected. On the contrary: It is pointless to explain data taken from a descriptively inadequate grammar. And until today the number of really good descriptive grammars and therefore the number of really well-described languages is very limited.

But whenever one speaks of standardizing language descriptions across language types, taking up the challenge of general comparability, the spectre of Procrustes enters the room and scares the discussants. Procrustes, as is well known, used brute force in making different customers alike, stretching the short ones and cutting off the feet of the taller ones. Wouldn't a general framework for language description be like Procrustes? Here the typological bias problem mentioned in section 1.1. above raises its ugly head: Any general framework for language description has been developed on a rather small sample of languages. So chances are this sample is typologically biased and therefore the framework is helpful for the description of languages that conform with the bias and it may be more of a hindrance for the description of other languages. The only solution to the problem is to set up the sample used in the framework development in such a way that it contains languages that are maximally apart from one another in the different dimensions of typological variation. The example presented in section 6 below illustrates such a long distance comparison in the dimension of analyticity/syntheticity. It is left to the reader to judge if the descriptive apparatus is biased towards one language or the other.

Once the typological bias problem is solved, a more adequate picture should replace the one of Procrustes. It would be the picture of a person who simply measures. So instead of saying these two languages are rather similar in a given respect, say their vowel inventory, one could come up with an objective value on a scale.

One problem with the comparative description of languages so far is the following: There are what may be called familiarizers, linguists who try to show that all languages are basically the same and therefore tend to play down the differences, and there are exoticizers, linguists who try to prove that their language is incommensurable with all others and therefore tend to play down the commonalities. Both attitudes are of course exaggerations,

but without measurements it will be hard to find a non-arbitrary balanced position between the two extremes.

Once the challenge of general comparability has been taken up and the prospects for an adequate treatment are good, it makes sense to ask: What is a general comparative grammar? According to the conception adopted for the CRG project, a General Comparative Grammar is a grammar that describes each phenomenon of each individual language by assigning it its systematic place in the typological space, i.e. the universal space of possible linguistic phenomena. Simply by being assigned its place in this space each phenomenon is automatically compared with all other phenomena in it. The space of possible linguistic phenomena is an *n*-dimensional space, where *n* is the number of dimensions of variation in which linguistic phenomena can be assigned a place (value). It is assumed that lexical phenomena (in the sense of the static lexicon) can be characterized by a set of finitely valued basic dimensions of variation and that characterizations of phenomena defined by the grammar proper (dynamic lexicon, i.e., productive word-formation, and syntax) result from adding to this set two further (infinitely-valued) dimensions of variation: word complexity and phrase complexity.

3. The theoretical background of language description

3.1. Why boring theoretical assumptions are more interesting than interesting ones

The third problem stated in section 1.1. above is the theoretical bias problem. One may ask: Why is theoretical bias a problem at all? Why not pick one's favorite theoretical framework and start from that? Wouldn't that have the nice side-effect of promoting this framework and giving it an advantage over its competitors? Reflections on the theoretical underpinnings of CRG have revealed an interesting paradox: Strong and interesting theoretical assumptions are good for advancing our understanding of human languages and the forces that have shaped them and continue to make them what they are. But they are not good as a basis for describing linguistic data and the framework that has been chosen for this purpose has no advantage over its competitors.

On the contrary: No ambitious explanatory theory should strive to be included in the theoretical basis of a cross-linguistic reference grammar data-

base. Why? Because explanatory theories are empirical theories and empirical theories strive for falsifiability. But it is impossible to find data that falsify a theory whose assumptions are built into the very description of that data. To give a simple example: Whoever bases his descriptions on a theory that postulates that every sentence has a subject is unable to describe subjectless sentences.[6]

So a high-ranking maxim for the development of the theoretical background of the CRG project was the following: Whenever there is any hope that a hypothesis can be tested against the data in the database, its validity should not be assumed by the theory underlying the database.

3.2. General assumptions

The comparability of human languages is based on their rough functional equivalence: No signalling system qualifies as a language in the intended sense, if it does not provide its users with the means for making assertions, asking questions, making requests, referring, predicating, restricting, modifying etc. Except for the distinction between grammatical and semantic components of the inferable content nothing should be stipulated by the basic assumptions. Among other assumptions the question of the universality of the verb-noun distinction (cf. e.g. Broschart 1997) should be left open.

In his monograph *The Rise and Fall of Languages* (1997: 132) Bob Dixon speaks about what he calls Basic Linguistic Theory, "the fundamental theoretical apparatus that underlies all work in describing languages and formulating universals about the nature of human language." I am not sure if such a theory can be identified or whether this is just a cover term for a wealth of overlapping but different sets of basic assumptions used in the work of 'theory neutral' descriptions in linguistics. In this respect I am more skeptical than Matthew Dryer (this volume), but the preceding section should have made clear that I agree with Dryer in emphasizing the importance of distinguishing between descriptive and explanatory theories and that for the former something resembling standard practice can be useful. I think, however, that it is useful to not just appeal to such a practice, but to spell out the assumptions, shared or not, which one takes for granted in the descriptions one is making.

3.3. Special assumptions

The following basic assumptions and terminological stipulations are currently in use in the CRG enterprise; they are taken to be acceptable for a broad majority of linguists:

1. Every human *language* is a system that defines and thus provides its users with an open set of linguistic signs. The openness of this set implies that only some of them can be memorized, while others have to be constructed and interpreted on the fly.
2. A *linguistic sign* is an abstract conceptual entity, the pairing of a reproducible perceivable form together with a conventionally associated inferable content.
3. Each *token of a linguistic sign* is therefore a concrete situated instantiation of such a concept: a perceivable instantiation of the form produced together with an inferable instantiation of the content. (The concept of a written linguistic sign token is a little more complicated and will not be spelled out here.)
4. A linguistic sign is *complex* if components of its perceivable form correspond to components of its inferable content, else it is a simple sign or a *simplex*.[7] (Thus German *rot* 'red' is a simplex whereas *Röte* 'redness' has two components one of which, the nominalizer, displays a discontinuous shape (umlaut and suffix). It is a matter of debate whether the noun *Rot* is complex or simple: if analyzed as containing a zero nominalizer it is complex, but if treated, together with the form-identical adjective, as a polycategorial sign it is simple.)
5. It is a 'fundamental design feature' (Talmy 2000: 21) of human languages that they have two interlocking subsystems, the grammatical and the lexical, and it is therefore helpful to distinguish between grammatical (form-related, structural) and semantic components of the inferable content of a linguistic sign. *Semantic components* are conceptual categories whereas *grammatical components* are formal categories; the latter are either semantically anchored, i.e. indirectly related with conceptual categories (e.g. number with cardinality), or purely formal (e.g. inflexion classes). (Thus the inferable content of the English adjective *red* has both semantic and grammatical components – the conceptual category of the corresponding color and the semantically anchored grammatical

category adjective – whereas the inferable content of the English suffix *-ness* of *redness* has only a grammatical component: that of the semantically anchored grammatical category deadjectival nominalization.)

6. The encoding use of language (henceforth '*linguistic action*') is the situated production of linguistic sign tokens, i.e. the production of perceivable form tokens together with inferable content tokens. The situation in which a linguistic action is performed will be called the *production situation*. Only the current speaker can be in a production situation. Aspects of the production situation like identity of speaker and addressee, time and location are substantial factors in the determination of the inferable content token.
7. The decoding use of language (henceforth 'linguistic understanding') is the situated interpretation of linguistic sign tokens. It consists in perceiving a situated form token and inferring from this a situated content token. The situation in which this linguistic understanding is performed will be called the *interpretation situation*. Any speaker of the relevant language can be in an interpretation situation. Aspects of the interpretation situation can be factors in the determination of the inferable content token only insofar as they can be anticipated by the respective speaker.
8. The production of a linguistic sign token is a complete linguistic action or speech act only if its situationally inferable content includes a specification of the conventional role it is intended to play in the interpretation situation (illocutionary force). A complete linguistic action is called an *illocution*.
9. In addition to coding illocutionary force most illocutions (but for instance not uses of interjections) include a propositional act or at least an act of reference.
10. Every human language *L* defines an open set of linguistic signs whose inferable content includes a semantic component. These signs can be used as the core of a predication; they will be called *predicative signs of L*. The semantic component of their inferable content will be called a *predicative concept of L*. If an entity instantiates such a concept it is *predicatively characterized* by any corresponding sign of *L*. (The letters you are reading now are predicatively characterized by the English adjective and predicative sign *black* because they instantiate the coded color concept, which is a predicative concept of English.)

11. Every human language *L* defines a relatively small closed set of linguistic signs with an inferable content that lacks a semantic component and consists entirely of semantically anchored grammatical content. These signs cannot be used as the core of a genuine predication[8], and they will be called *sortal signs of L*. The semantic anchor of the relevant grammatical component of their inferable content will be called a *sortal concept of L*. If an entity instantiates such a concept it is *sortally characterized* by any corresponding sign of *L*. (Consider the letters in these parentheses. They are sortally characterized by the English pronoun this sentence starts with because of the sortal concept of plural cardinality that anchors the grammatical component of plural number included in its inferable content.)
12. Every human language provides means for *predicating*, i.e. signs that in a production situation include in their inferable content both a predicative concept of that language and a grammatical component that relates this concept to a given entity called a *referent*. Linguistic signs used for predicating characterize their referent predicatively (and in general also sortally). An act of predicating will also be called a *predication*.
13. Every human language provides means for *referring*, i.e. signs that in a production situation include in their inferable content a referent. A possible referent in a production situation is any entity that is either already accessible for predication in the intended interpretation situation or is made accessible by the speaker by introducing it into that very situation. Therefore, acts of reference are either acts of *referent maintenance* or acts of *referent introduction*. Linguistic signs used for reference characterize their referent sortally and often also predicatively. This will be called restricting characterization of referents or *restricted reference*.[9]
14. Every human language provides means for *quantifying*, i.e. signs that in a production situation include in their inferable content a generalization over virtual referents. Therefore, quantifying sign tokens are non-referential. Like referring signs they characterize their referents sortally and often also predicatively. This will be called restricting characterization of virtual referents or *restricted quantification*.
15. The combination of a predication with an act of either referring or quantifying yields an *elementary propositional act*. The inferable

content of a propositional act is called an *elementary propositional content* and consists of the situation it is about (global reference, frame) a situation type. The framing situation is called the *object situation*, whereas both the production situation and the interpretation situation are called *metasituations*. The object situation is the location of the referent of referential sign tokens and the domain of quantification of non-referential ones. If the object situation is specific enough to make the corresponding propositional content true or false, then it is an *elementary proposition*, else an *elementary near-proposition*. An elementary proposition is called *categorical* if it includes an act of referent maintenance, else it is called *thetic*.[10]

16. Elementary propositional contents cannot occur alone. They must be embedded either directly or via embedding higher propositional contents in an *illocution* (cf. 8 above).[11] The propositional content of an illocution is always the highest propositional content it includes. Assertive illocutions require propositions as contents and are true if their proposition is[12], directive illocutions are pointless in that case[13], other illocution types like erotetic illocutions (questions) require near-propositions as contents and are therefore neither true nor false.[14]

4. Some corollaries

4.1. The primacy of onomasiology

In section 3.2. it has been stated that the comparability of human languages is based on their rough functional equivalence and that form-related issues like the universality of the verb-noun distinction should be left open. Assuming that the prototypical use of verbs lies in predication and that of nouns in restricted reference, the lack of such a distinction would amount to having a single category of predicate (as in standard predicate logic). According to assumption 13 such a language would simply lack the possibility of an immediate predicative restriction of its referents, i.e. something like a relative clause or desentential attribute would be needed for that purpose.

Generalizing from considerations like this one readily comes to the conclusion that for cross-linguistic grammatography the semasiological (decoding) and the onomasiological (encoding) perspective are not on a par, but that the latter has priority over the former: If comparison is based on

assumptions like 'there must be a way of expressing roughly this content', it is safe, but if it is based on assumptions like 'there must be a copula or a noun-verb distinction', it is not. Unfortunately, as Ulrike Mosel (this volume) points out, existing reference grammars are almost exclusively organized from a semasiological perspective.

4.2. The inseparability of grammatography and lexicography

The primacy of onomasiology also explains why CRG is conceived as an integrated lexicogrammatical database. A look at some coding means for the concept 'causation of the state of being dead' shows that they can be found in very different parts of a systematic language description:

(1)	English	*kill*	in the simplexicon (monomorphemic signs)
(2)	German	*töten*	in the d-complexicon (derived polymorphemic signs)
(3)	German	*totmachen*	in the c-complexicon (compound polymorphemic signs)
(4)	English	*let die*	in the phrasicon (phrasal signs)

(1)-(3) should be listed in the lexicon, (2) and (3) also in the word formation part of the grammar (dynamic lexicon), and (4) in the syntax part of the grammar. A separation of grammatography and lexicography and hence of grammar and lexicon would impede insight into potentially important connections.

5. The interlinear representation format (IRF)

The starting point in developing the example data structures of CRG was the tradition of interlinear morpheme glossing combined with translations that is familiar from typological literature, but it was clear from the outset that not only the descriptive, metalinguistic vocabulary is in urgent need of standardization, but also that a much richer structure is not only desirable but also feasible as soon as the data are represented in an electronic format. A richer structure means among other things more lines and so a structure emerged that partly reminds one of a musical score, where the different lines or parts are synchronized by bars. (Mismatches of syllable and morpheme boundaries resemble then a syncopated rhythm.)

The basic dividing line in such an interlinear representation format corresponds to the very notion of a linguistic sign and separates the signifier or perceivable form (above) from the signified or inferable content (below). Here is the IRF-structure of a spoken language sign:

+7	audiovisual data (recording)
+6	coding of **co-linguistic elements**
+5	phonetic transcription of linguistic elements
+4	representation of higher-level suprasegmentals (intonation etc.)
+3	autosegment representation (tones etc.)
+2	phonological segment and syllable representation
+1	morphophonemic representation
-1	morpheme gloss with GRAMMATICAL, *semantic* and **co-linguistically induced** components
-2	higher morphological structure
-3	syntactic structure
-4	meaning structure (with co-linguistically induced elements in **boldface**)
-5	literal translation into quasi-English
-6	free English translation

(The justification for having three different levels of meaning representation, meaning structure, literal and free translation, will be given in connection with an illustrative example in the following section.)

The IRF-structure of written linguistic signs has the same negative levels but the positive levels have a simpler signifier structure:

+IV	reproduction of writing with included elements (**illustrations**) and including situation (**wall**)
+III	standardized representation of original script with coding of **co-linguistic elements**
+II	empty, if +III is roman, else transliteration of +III into roman-based orthography
+I	+III (or +II, if non-empty) with morpheme boundaries

The IRF-structure of sign language signs is of course a matter of much debate, but it seems plausible that basically the same structure as for spoken language signs can be used.[15] (It has to be admitted, though, that in both cases the notation of paralinguistic components remains a challenge.) Here are the representation levels for a sign language sign:

+7	audiovisual data (recording)
+6	coding of **co-linguistic elements**
+5	phonetic transcription of linguistic elements (HamNoSys)[16]
+4	representation of non-manual sign components
+3	phonological representation of mouthings
+2.w	phonological representation of weak hand sign components
+2.s	phonological representation of strong hand sign components
+1	morphophonemic representation

Since there is no widely accepted counterpart for IPA in sign linguistics, the choice of the phonetic transcription system must be more or less arbitrary. The Hamburg Sign Language Notation System, HamNoSys, has the advantage of being highly iconic and not referring to national diversified fingerspelling. It is, however, not very well developed with respect to non-manual components and does not include an adequate representation of mouthings, visible elements from spoken language articulation accessible for lip-reading, which need to be represented on a separate level. Mouthings are important for an adequate representation of many sign languages including DGS (German Sign Language) or JSL (Japanese Sign Language). An interesting difference between the two modalities shows up in the relation between the level +1 and higher levels: Since signs may include sev-

eral simultaneously articulated morphemes, at level +1 an arbitrary linearization of these morphemes has to take place.

6. An example of cross-linguistic description

For the following illustration of the idea of cross-linguistic description two typologically diverse languages have been chosen, languages that are rather far apart on a very prominent dimension of linguistic variation, that of analyticity. Polysynthetic languages, those with polymorphemic and very complex word forms, rank very low on this scale while other languages where the ratio of morphemes to word forms comes close to one rank very high. The former type is represented here by the Iroquoian language Seneca of East Northern America, the latter type is frequently illustrated by Chinese. German is often said to be between the extremes, but the example will show that it is much closer to the analytic end of the scale than to its opposite.

An obvious way of comparing languages is to look for translation counterparts. In the database this means to select level -6 (free translation) in an example and to look for other examples with the same content of level -6. (Looking for literal translation counterparts or matches on even higher negative levels such as meaning structure is possible as well, but will yield rapidly decreasing results.) The Seneca example is taken from a conversation recorded by Wallace Chafe in 1957 (personal communication).[17] The first part of that conversation is about a fisherman who catches a lot of bass. So the third person anaphor relates to this fisherman and the corresponding reference act is an act of referent maintenance in the sense of assumption 13 above. Comparing its description with that of the German translation reveals the commonalities as well as the differences between the two roughly equivalent linguistic signs.[18]

Seneca

+2	deʔ.ˈshos.dõʔ.ˈʃo.õh						
+1	teʔ-	-s-	-ho-	-stõʔshr-	-o-	-h-	- õh
-1	NEG-	-REP-	-3.S.M.PAT-	*-hook-*	*-be.in.water-*	-CAUS-	-STAT
-2	[PRFX	-[PRFX	-[PRFX-	-[[	V.BASE	]-	-SUFF]]]]]
-3	[ ]$_{DECL}$						

-4 *a* [ILL.TYPE(*a*): ASSERTIVE
PROPOSITION(*a*): < s_o,
NEG
(REPETITIVE
(*p* [REFERENT(*p*): *x* [s_i-ACCESSIBLE, NON-s_p-SAP, SIMPLEX, MALE.PERSON]
PREDICATE(*p*): BE.EXPONENT
(e_1 [ASPECTUALITY(e_1): STATE
TYPE(e_1): CAUSING(e_2 [TYPE(e_2): *be.located.in.water*
EXPONENT(e_2):*y* [*hook*]])])])>]

-5 It is not the case that again he is in the state of causing a hook to be in water.

-6 He doesn't have his hook back in the water yet.

German[19]

+II	Er hat seinen Haken noch nicht wieder im Wasser						
+2	eːr hat saɪ̯.nən ˈhaː.kən nɔx nɪçt ˈviː.dər ɪm ˈvas̯ər						
+1	eːr	hab	-t	saɪ̯n-	-ən	haː.kən	
-1	PERSP.3.S.M.NOM	*have.V*	-3.S.IND.PRES.ACT	POSSP.3.S.M	-S.M.ACC	*hook.N*.S.M.ACC	
-3	[[SBJ]	[[PRED.CORE]		[	DIR.OBJ		]
		nɔx	nɪçt	viː.dər	ɪn-m	vas̯ər	
		CONT PRTCL	NEG PRTCL	REP PRTCL	*in.P*-DEF.S.N.DAT [PRED.EXT.LOC	*water.N*.S.N.DAT	
			]]]$_{DECL}$				

-4 *a* [ILL.TYPE(*a*): ASSERTIVE
PROPOSITION(*a*): < s_o,
CONTINUOUS
(NEG
(REPETITIVE
(*p* [REFERENT (*p*): *x* [s_i-ACCESSIBLE, NON-s_p-SAP, SIMPLEX, MALE.PERSON]
PREDICATE(*p*): BE.AGENT
(*e* [TYPE.CORE(*e*): *disposing.of.entity.located.at z*
TYPE.RESTR(*e*): *z* [*in.water*]
UNDERGOER(*e*): *y* [POSSESSED.BY(*x*), SIMPLEX, *hook*]])))>]

-5 He has his hook still not again in the water.

-6 He doesn't have his hook back in the water yet.

The comparison shows first a striking difference in compactness: The Seneca version has seven morphs coded in five syllables, whereas the German translation requires twice as much effort: thirteen syllables to code twelve morphs. In terms of word tokens the difference is even more striking: The Seneca sentence consists of one (phonological and grammatical) word form, the German counterpart of nine. Only three of the German word forms are complex. Level -2 (higher morphological structure) has therefore been omitted in the German example.

Another interesting difference is in the division of labor between grams with their sortal concepts (marked by small caps) and lexemes with their lexical concepts (marked by italics): Seneca combines eight sortal concepts with two lexical ones, German has four lexical concepts associated with four different part of speech categories and many grams and sortal concepts that occur more than once due to several cases of agreement. This shows a higher degree of redundancy and abstractness: The grammatical features third person and singular on the German verb form help only identify the referent of the predication, the corresponding sortal concepts have nothing to do with the predicate concept itself. Only two of the six occurrrences of gender features in the example reflect a sortal concept: The feature 'masculine' both in the personal pronoun and in the stem of the possessive pronoun restricts the respective referent by characterizing it as a male person, the other four occurrences of 'masculine' (with *Haken* 'hook') and 'neuter' (with *Wasser* 'water') are purely formal.

Both sentences are declarative sentences coding an assertive illocution with a categorical proposition as content. The German syntax shows a prototypical transitive construction with a subject, a direct object and a predicate consisting of a finite verb and a locational extension having the form of a prepositional phrase. Three particles modify the propositional content.

The core of the Seneca word structure is the intransitive locational root 'be in water' that is transitivized by the causative suffix and intransitivized again by incorporating the nominal root 'hook'. The whole stem or verb base is then marked as a stative predicate by a corresponding suffix. Therefore, the referential person prefix appears in the patient form since states do not trigger agent forms in Seneca (they are, as it were, not active enough). Two additional prefixes code propositional aspectuality and polarity.

These two different grammatical structures result in different semantic structures. The illocution type 'assertive', unmarked in both languages, is in both cases the same, but the proposition structures are different: In the Seneca sentence, the proposition is first negated and then aspectuality-marked

as repetitive, coding the concept of 'not again', in the German counterpart aspectuality comes first (*noch* 'still'), negation (*nicht* 'not') second, and another aspectuality marker third (*wieder* 'again), coding the concept of 'still not again'.

The reference parts of the propositional cores are the same, but the inner structure of the predicates differs. The Seneca predication characterizes its referent as the exponent of some stative causation eventity[20] that is indirectly characterized as having the effect that some hook is located in water. So it decomposes the predication core into two causally related subevents with one participant each.

The German predication is different in characterizing its referent as the agent of a semantically transitive, i.e. relational, eventity whose undergoer is some hook that is functionally related (as *possessum*) to the referent of the predication. So the relation between the person and the hook is not mediated by their participation in two related eventities, but directly expressed in their participation in the same eventity, albeit in different roles. Here complexity shows up in a different place: The relational eventity of having (roughly 'being able to control in one way or the other') that serves as predicate core is specified by the location where the control is exerted, serving as predicate extension.

There are of course many details that can be debated and analyzed in a different way[21], but the basic idea of fine-grained language comparison that such a framework makes possible should have become clear.

The example presented above can be used at several locations in the grammar, e.g., in the chapter on negation, but also under aspectualities, elementary declarative sentences etc.

Just one final remark on the functionality of the database: The type of query chosen for the illustration, i.e. looking for translation equivalents is of course not the only one that is possible. In principle all lines in the IRF, single ones or combinations thereof, can be selected and matching complete examples can be obtained. So if one is interested in higher morphological structures with the pattern [PREF-[PREF-[PREF-[[VERB.BASE]-SUFF]]]] one can search for this as well as for declarative sentences in general (with the syntactic structure [ ]$_{\text{DECL}}$).

7. Outlook

Currently the system is being tested in the Munich International Doctoral Program in Linguistics (LIPP) 'Language Theory and Applied Linguistics'. A guiding principle in its development is the double responsibility for each cell in the database, that results from two orthogonal dimensions of its organization: The vertical dimension is the traditional one that takes care of the consistency and coherence of the descriptions of different subsystems of one and the same language. Responsibility for a column in the database thus corresponds to the notion of authorship of a traditional grammar.

The horizontal dimension is the cross-linguistic one and it is specific to the CRG enterprise. It is here where the balance has to be held between over- and understating the differences and commonalities. Those who are responsible for the rows ought to be specialized in the corresponding subfields like segmental, suprasegmental and phrasal phonology, static and dynamic lexicology, grammar in the sense of syntax and inflectional morphology, decompositional and compositional semantics and pragmatics.

The division of labor that is reflected in this grid structure of the database makes it easy to predict conflicts between a column-related language internal view and a row-related cross-linguistic perspective on the same phenomenon. It is an important advantage of the electronic format that it supports a policy of not only permitting but even encouraging competing descriptions of the same phenomenon (for arguments why this is an advantage cf. Zaefferer 2004).

A central motivation for the CRG project is the firm conviction that the very notion of comparability is of prime importance for the mutually stimulating effects that developments in language description and advances in theory formation could and should have for one another.

A Popperian sequel to Humboldt's dream will be the use of the database query system as a means for finding counterexamples to any theory that is compatible with the one proposed here as a basis for description. And this does not mean naive falsificationism as long as there are attempts to explain away putative counterexamples by describing them in a different way. If the new description turns out to be better on independent grounds, both theory and description will have gained.

An open-ended project like the one outlined above requires of course the collaborative efforts of many linguists. It is therefore conceived of as an internet database system that after the test phase will be opened to the inter-

ested linguistic community. It is hoped that this outline will inspire many colleagues to take part in this great enterprise.

Notes

1. I am grateful to Nick Evans for offering me the opportunity to write about my favorite project in such an appropriate context. I am also deeply indebted both to him and to Alan Dench for a host of valuable questions and comments which were of great help to me in revising this paper and to Andrea Schalley for carefully checking and commenting on the revised version. All remaining errors and mistakes are therefore not their fault, but exclusively mine.
2. "...[man] hat aber auch diese [sc. die allgemeine Grammatik] ... nie als eine allgemein vergleichende Grammatik behandelt ... Zu noch größerem Unglück hat man fast überall daran [sc. an die zusammengetragenen Materialien] Urteile geknüpft, denen man es nur zu sehr ansieht, daß es ihnen an der sicheren Grundlage gehörig aufgestellter leitender Ideen fehlt." (Humboldt 1996: 14)
3. For recent documentations of the software architecture and the linguistic categories see Nickles (2001) and Peterson (2002), respectively. Their work as well as that of the other project members was supported by grants Za 111/7-5 and Za 111/7-6 from the DFG (German Research Association) to the author, which are hereby gratefully acknowledged. The location of the project's homepage is: http://www.crg.lmu.de
4. This is not meant to imply that the problem of version tracking and maintaining consistency is trivial.
5. Alan Dench points out (p.c.) that reaching descriptive adequacy can be rather challenging. One might add that any increase in the quality of a phenomenon's description corresponds to a decrease in the difficulty of its explanation.
6. This does not mean that there is no way to correct assumptions that are built into the very description of the data: They cannot be literally falsified but if they turn out to yield very contrived descriptions this may lead to their revision.
7. The independence of the degree of complexity of the perceivable form from that of the entire sign (simple signs tend to have complex, multisegmental forms) is often referred to as double articulation.
8. This proviso serves to exclude identification, which is also sometimes subsumed under predication. Sortal signs can be used as the core of identificational predications. In the English sentence "It's me." the topical phenomenon is identified with the speaker and both are only sortally characterized. (I am indebted to Leonard Talmy (p.c.) for the nice example.)
9. Note that the restrictive predicative characterization of an entity in an act of reference as in 'This woman' is different from predicating the same concept

of a referent as in 'This is a woman', as can be seen in cases like 'This woman is not a woman', where the predication wins over the restriction if the sentence is not interpreted as contradictory.

10. The usefulness of Brentano's distinction between the thetic and the categorical judgement has been discovered for linguistics by Kuroda (1972), cf. also Sasse (1987), Ladusaw (1994).
11. This assumption is further developed and spelled out in Zaefferer (2001).
12. This involves a slight shift in reference: Illocutions are actions and even with assertions one would not say: 'What you have done is true', but rather: 'What you have said is true'.
13. Imagine someone saying 'You guys be quiet!' to a silent audience.
14. Cf. Zaefferer draft.
15. Cf. Zaefferer (2003).
16. Cf. Prillwitz et al. (1989) for version 2.0, for later versions see: http://www.sign-lang.uni-hamburg.de/Projects/HamNoSys.html
17. My deep gratitude goes to Wallace Chafe who not only let me use his material but also willingly answered my email questions on the syllabification and interpretation of this example.
18. A few remarks on the notation (abbreviations are spelled out in the appendix): Levels +2 and +1: Ambisyllabic segments are underscored; level -1: Small caps gloss grammatical components, semantic components are represented in italics and their categories in small caps italics, the factors of polyfactorial morphemes are separated by dots; level -4: *a* is an action variable followed in square brackets by conditions on its illocution type and propositional content; s_o is the object situation of the proposition, followed by its type; *p* is a variable for an elementary proposition type followed in square brackets by conditions on its referent and predicate; *x*, *y*, *z* are individual variables followed in square brackets by predicates they instantiate; *e*, e_1, e_2 are eventity (cf. fn. 19) variables followed in square brackets by partial characterizations of their aspectuality, type, and participants. 'exponent' designates the unspecified participant role. The variables are intended to be interpreted like discourse referents, i.e. as existentially bound.
19. Note that the orthographic level is not part of the example proper, it has been added to the phonological and morphophonological ones only for the sake of convenience.
20. 'Eventity' is a term meaning 'event or similar entity' and is preferred by the author over 'eventuality', which is used in linguistic circles with the same meaning, but has the disadvantage of already being lexicalized in the sense of 'possibility'.
21. Among others, the Interlinear Representation Format is intended to be a framework for competing descriptions of the same data.

Abbreviations

3	third person
ACC	accusative
ACT	active
CAUS	causative
CONT	continuative
DAT	dative
DECL	declarative
DEF	definite
DIR.OBJ	direct object
EXT	extension
ILL.TYPE	illocution type
IND	indicative
LOC	locational
M	masculine
N	neuter
N	noun
NEG	negation
NOM	nominative
P	pre- or postposition
PAT	patient
PERSP	personal pronoun
POSSP	possessive pronoun
PRED	predicate
PRES	present tense
PRFX	prefix
PRTCL	particle
REP	repetitive
S	singular
s_i-ACCESSIBLE	accessible in the interpretation situation s_i
s_o	object situation
s_p-SAP	speech act participant in the production situation s_p
SBJ	subject
STAT	stative
SUFF	suffix
V	verb

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The organization of reference grammars: A typologist user's point of view

Sonia Cristofaro

1. Introduction: language description in a typological perspective

This paper addresses the issue of the organization of reference grammars from a user's point of view.

Literature on the organization of reference grammars (see among others Lehmann (1980) and (1998), Schultze-Berndt (1998), Mosel, this volume, and Zaefferer, this volume) usually addresses this issue from the author's point of view, and focuses on matters such as what topics should be necessarily covered in a reference grammar, how information should be distributed across the various parts of the grammar, what type of information (e.g. morphological as opposed to syntactic information) should be provided first, and the like. A related problem is also whether a grammar should take a form-to-function (semasiological) or a function-to-form (onomasiological) approach, that is, whether the description should select particular functional domains, and show how they are expressed in the language, or it should select particular forms, and describe the range of functions associated with these forms.

These issues are obviously of interest not only to authors, but also to users. There are however various respects in which a user's perspective may differ from an author's perspective, with regard both to the topics that should be covered in a grammar and the way in which these topics should be presented. In particular, this paper aims to provide the perspective of a particular type of user, namely the typologist who uses grammars for the purposes of cross-linguistic comparison, and is interested in the cross-linguistic manifestations of some grammatical phenomenon rather than some particular language as a whole.

Before proceeding to discuss the specific needs of such an user, it is worth pointing out that language description has experienced some signifi-

cant methodological changes over the past decades, ones that have been directly influenced by typological research. For example, it was not uncommon for grammars written until about the '80s to privilege phonology and morphology over syntax. Thus, several grammars written in that period have long and detailed sections about noun and verb structure, while the space devoted to sentence structure is comparatively limited (see, for example, many of the grammars in the 'University of California Publications in Linguistics' series, such as LeCron Foster 1969 or Langdon 1970, as well as other grammars such as for instance Fortune 1942, Abraham 1985 or Arokhianatan 1987).

From the '80s on, the range of topics covered in reference grammars has become increasingly balanced and diversified. More and more attention has been devoted to syntax in general as well as to a whole host of topics that are now regarded as crucial for language description, such as passive constructions, alignment patterns (including phenomena such as ergativity and split intransitivity), or evidentiality. This expansion in perspective has been largely influenced by typological studies, that have revealed the existence and cruciality of a number of previously unobserved phenomena in more and more languages (Dryer, this volume).[1]

At the same time, the vast cross-linguistic variation revealed by typological studies has reinforced the idea (ultimately of structuralist origin) that each language should be described in its own terms, rather than in terms of categories tailored for European languages. As repeatedly pointed out in the typological literature (see for instance Keenan and Comrie 1977; Stassen 1985: 14–15; Croft 1990: 11–18), languages do not display the same categories, intended as the combination of particular morphosyntactic structures and particular semantic or pragmatic functions. The same structures are not associated with the same functions cross-linguistically, and, conversely, the same functions are not associated with the same structures. It follows that individual grammatical categories cannot help being language-specific (Dryer 1997; Croft 2001).

This has led to an increased awareness that grammatical categories should be postulated for each language independently of the categories postulated for other languages, and they should be motivated in distributional terms. As a result, detailed discussions of the distributional criteria used to identify individual grammatical categories can now be found in most grammars. For example, until the '80s most grammars would take for granted that the language being described should have a subject and a direct object category.[2] As a result, the criteria used to identify these categories in

each language would not be discussed, even in languages where these notions are more problematic, such as ergative languages (see for example Saltarelli 1988: 146–148 on the morphological marking of grammatical relations in Basque). On the other hand, many grammars now include a detailed discussion of the evidence avalable in the language to postulate categories such as subject and direct object (see for example Foley 1991: 195–200 on grammatical relations in Yimas).

As is observed by Dryer (this volume), the influence of typological research on language description has also led to growing convergence in the descriptive frameworks adopted in reference grammars. Grammars written in the period of around 1965 to 1975 display considerable variation in their theoretical framework[3]. On the other hand, the practice of using the notions and descriptive apparatus basically drawn from traditional grammar has become increasingly widespread in language description[4]. The use of a descriptive framework based on traditional grammar has a number of advantages, in that such a framework will presumably be familiar to most readers, and so there will be no need for the reader to work out the notions and terminology used in the grammar before being able to access the data being described.

These changes have all contributed to set user-friendlier and typologically more adequate standards for reference grammars, resulting in increased awareness about which topics should be covered in a grammar, and the descriptive tools that should be employed in describing them. Thus, the typologist user can now count on more complete grammars, that often provide an accurate picture of the way in which the grammatical categories of the language are similar or different from the grammatical categories of other languages.

This does not mean, of course, that all grammars conform to the same standards, cover the same range of topics, or adopt the same theoretical framework. In fact, any grammar user is probably familiar with the feeling that a particular grammar doesn't cover exactly the topic they are interested in, or fails to cover it in an appropriate way. This is virtually unavoidable, because grammar writing usually takes place under severe time and space constraints, so no grammar can probably be fully comprehensive (see Mosel, this volume). However, more and more grammars now conform to typologically oriented standards, and there are general expectations that a good grammar should cover at least some topics, and it should cover them in a certain way.

Nevertheless, there still are a number of respects in which even grammars that on the whole conform to typologically oriented standards may not be fully adequate for the purposes of cross-linguistic comparison. In what follows, this issue will be discussed with respect to the following points:

i. The distribution of information across different parts of a grammar, with regard to form-to-function approaches as opposed to function-to-form approaches to language description.
ii. The parameters taken into account when providing information about the categories described in the grammar.
iii. The criteria used in identifying the categories described in the grammar.

Each of these points is discussed in detail in the following sections. The discussion is meant to contribute some general methodological insights about the organization of reference grammars, based on specific examples concerning grammatical domains such as clause linkage and tense, aspect, and mood. Some of these examples were collected while carrying out typological studies of the relevant grammatical domains (Cristofaro 2003 and 2004), and they were selected for their general methodological implications, rather than the overall theoretical relevance of the specific linguistic phenomena involved. This means that the reason why I will focus on particular phenomena (such as for example the expression of modal and phasal notions, or purpose relations) is not that I regard them as more interesting or more important than other phenomena that might be described in a grammar. Rather, I have chosen these phenomena because they provide a clear illustration of a number of general problems about the organization of reference grammars, ones that are potentially relevant to any linguistic phenomenon described in a grammar. As a result, the discussion in the following sections should be understood as pertaining to the question of how a grammar should present individual phenomena, rather than what phenomena exactly it should cover.

2. Form and function in language description

As illustrated by Mosel (this volume), there is a long-standing debate in the linguistic literature as to whether language description should proceed from particular forms, and describe the range of meanings associated with these

forms, or rather particular functional domains, and describe the range of forms that can be used to encode them (see also Comrie 1998).

Although the necessity of a function-to-form approach to language description was argued for as early as von der Gabelentz (Mosel, this volume), and repeatedly advocated ever since, the overwhelming tendency for grammars has always been to take the form-to-function approach. There are several reasons for this. The most obvious one is that the form-to-function approach gives an immediate idea of what the language is like, and how its grammatical system works. In this respect, the form-to-function approach is a more natural and direct way to describe a language than the function-to-form approach, which is based on semantic and pragmatic domains defined independently of the target language. Also, as is observed by Mosel (this volume), a function-to-form approach may fail to show the similarities between the various uses of individual forms, thus leading the user to miss potential polysemic links between these uses.

Proponents of the function-to-form approach have given various motives for this approach. A general theoretical reason advocated in early discussions of the function-to-form approach such as von der Gabelentz's and Jespersen's (Mosel, this volume), is that the function-to-form approach and the form-to-function approach reflect two distinct processes: the encoding process that takes place in the speaker's mind, on the one hand, and the decoding process that takes place in the hearer's mind, on the other. Both approaches are therefore essential to language description.

Typological praxis suggests that there are also empirical reasons for taking a function-to-form approach. A distinguishing feature of the functional-typological approach adopted by most typologists is the assumption that at least certain aspects of language structure depend on, and can be explained in terms of, language function. Functional-typological research is therefore crucially interested in the correspondence between particular structures and particular functional domains. However, languages display tremendous variety with respect to their morphosyntactic structures and the functional domains with which these structures are associated. In particular, individual morphosyntactic features need not occur in exactly the same combinations cross-linguistically, nor be present in all languages. Therefore, if cross-linguistic comparison is based on particular morphosyntactic features or combinations thereof, a number of languages that lack these features or that do not combine them in the required way will have to be left out. As a result, the typologist will not be able to say anything about the way the selected functional domains are encoded in those languages.

On the other hand, all languages presumably have means to encode the same range of functional domains. Thus, if cross-linguistic comparison is based on particular functional domains, all languages can be included within the analysis, and the typologist will be able to investigate form-function correspondences in all languages. For this reason, typologists generally believe that cross-linguistic investigation should select particular functional domains, and examine how they are encoded across languages, rather than select particular morphosyntactic structures, and examine their functional correlates cross-linguistically (see among others Stassen 1985: 14–15; Croft 1990: 13–16 and 2001: chap. 1; Cristofaro 2003: 9–14; Zaefferer, this volume).

In principle, examination of the ways in which a particular functional domain is encoded in a particular language is quite independent of the way the description of that language is organized. If the grammar takes a form-to-function approach, one can browse it in order to find out what constructions are used to express the relevant functional domains.

The major problem with this procedure, however, is that the user has to guess where the relevant information can be found, and this may be difficult if one doesn't have previous knowledge of the range of constructions that can be used to express a given functional domain. This means that, unless one browses the whole grammar in search for any bit of information that may be relevant, one may miss part of the information.

For example, in a number of languages, modal notions such as possibility, necessity, and ability are expressed by means of complement clauses introduced by a main predicate (so called modal predicates: Noonan 1985). The main predicate describes a modal condition on some situation, while the complement clause describes the situation for which the modal condition holds. This is illustrated in the Gulf Arabic sentence in (1) below:

Gulf Arabic (Afro-Asiatic, Semitic; Arabian Gulf)

(1) *ma **yigdar** yishiil hal-kooma bruuHah*
not 3M:SG:can 3M:SG:remove this:the:pile by:self:his
'He can't remove this pile by himself.' (Holes 1990: 201)

Modal conditions, however, can also be expressed by special affixes on the verb describing the situation for which the modal condition holds, or by independent particles. Gulf Arabic, for example, expresses the notion of necessity by means of the independent particle *laazim*:

Gulf Arabic (Afro-Asiatic, Semitic; Arabian Gulf)

(2) ***laazim*** *akammil* *il-baHth* *gabilla* *asaafir*
must 1SG:finish the:research before 1SG:travel
'I must finish the research before I travel.' (Holes 1990: 201)

A third morphosyntactic option is illustrated by West Greenlandic, where necessity is expressed by means of the verbal affix *-sariaqar-*:

West Greenlandic (Eskimo-Aleut, Eskimo; Greenland)

(3) *imir-niru-**sariaqar**-putit*
drink-more-must-2SG:IND
'You must drink more.' (Fortescue 1984: 292)

A similar situation is found with phasal notions such as 'start' or 'finish', desiderative notions such as 'want', and causativity. In a number of languages, these notions are expressed by specific predicates, that take clausal complements describing the situation to which the phase, desire, or act of causation refers:

Lango (Nilo-Saharan, Eastern Sudanic; Uganda)

(4) *ògwàŋ* ***ócàkò*** *bùccò* *òpíô*
Ogwang 3SG:start:PERF yell:INF Opio
'Ogwang started to yell at Opio.' (Noonan 1992: 225)

Lezgian (North Caucasian; Daghestan, Azerbaijan)

(5) *Ada* *ča-w* *ixtilat-ar* ***aq̃wazar-iz***
he-ERG we-ADEL conversation-P stop-INF
ta-da-j
cause-FUT-PAST
'He would make us stop the conversations.' (Haspelmath 1993: 358)

In other cases, however, these notions are expressed by means of verbal affixes:

Tangkhul Naga (Sino-Tibetan, Tibeto-Burman; India)

(6) *i ukrul wa-**nAy***
I Ukrul go-DES
'I want to go to Ukrul.' (Arokhianatan 1987: 83)

West Greenlandic (Eskimo-Aleut, Eskimo; Greenland)

(7) *akiuti-**usaar**-puq*
resist-keep.on-3SG:IND
'He continued resisting.' (Fortescue 1984: 282)

Japanese (Japanese, Japan)

(8) *Boku wa Mary ni o wakar**(s)ase**ru*
I TOP Mary to OBJ understand:cause
'I will make Mary understand this.' (Kuno 1973: 139)

In Kayardild, the notion of desire can be expressed simultaneously by the potential verbal inflection and oblique case marking on NPs. This is an instance of a more general pattern whereby case marking is used to express temporal, aspectual and modal notions (so-called 'modal case': Dench and Evans 1988; Evans 1995).

Kayardild (Australian, non-Pama-Nyungan; Australia)

(9) *ngada warra-da ngarn-kiring-**inj***
1SG:NOM go-DES beach-ALL-MOBL
'I would like to go to the beach.' (Evans 1995: 108)

In principle, all of the constructions exemplified in (1)-(9) are potentially relevant to a cross-linguistic investigation of the expression of possibility, necessity, causativity etc. Information about these constructions may however be quite difficult to recover from a form-to-function description of the relevant language, since the various constructions would normally be described in different parts of the grammar. For example, in Noonan (1992), the construction exemplified in (4) is described in the chapter on complementation, while Fortescue (1984) describes the construction in (7) in the section on continuous aspect. Now, a researcher may not know in advance what constructions are used to express possibility, necessity, causativity etc. in a given language. So, unless they browse the whole grammar, they might not find out what parts of the grammar deal with the expression of the notions they are investigating. As a result, they might miss some of the relevant constructions.

Another case in point is provided by the expression of purpose. Purpose relations are usually expressed by linking two clauses that describe the two events involved in the purpose relation, that is, an event that is brought about with the goal of obtaining the realization of some other event, and the

event whose realization is desired. This is exemplified in the following sentences from Ika and Cubeo:

Ika (Chibchan, Aruak; Colombia)

(10) *monu* *tšai-n* *ʌn-zožа-na*
monkey shoot-IMPFV REF-go-DIST
'He went (in order) to shoot monkeys.' (Frank 1990: 107)

Cubeo (Tucanoan, Central Tucanoan; Colombia)

(11) *jɨ̃-RE* *xɨ̃ejo-kɨ̃-RE* *epe-Ibã* *xi-bɨ̃ˈkɨ̃-wA*
1SG-OBJ child-M.SG-OBJ put-N/H.3PL 1SG.POSS-adult-PL
bue-I-Rõ-I *xi* *bãxi-kijepe*
teach-STVZ-IN.SG.NMLZ-LOC 1SG.POSS know-PUR.DS
a-Iwɨ́ *ape-Rõ* *xi*
say-NFUT.PL.NMLZ other-IN.SG.NMLZ 1SG.POS
bãxi-bE-Rõ-RE
know-NEG-IN.SG.NMLZ-OBJ
'From (when I was) a child, my parents put me in a school in order that I learn something that I didn't know.' (Morse and Maxwell 1999: 175)

In some cases, however, purpose relations may be expressed by fusing the two verbs. For example, Cubeo has a second purpose construction that is used with motion verbs. In this construction, the motion verb takes affixes agreeing with the subject in gender and number, and is encliticized to the verb expressing the event whose realization corresponds to the purpose of motion:

Cubeo (Tucanoan, Central Tucanoan; Colombia)

(12) *oko-kobe-I* *ɨ̃-ko=**R**ɨ̃-bIko*
water-CLS:hole-LOC get-NFUT:F:SG:NMLZ=go-3F:SG
oko-RE
water-OBJ
'She recently went to get water at the well' (Morse and Maxwell 1999: 65)

In the only existing grammar of Cubeo (Morse and Maxwell 1999), the two purpose constructions of Cubeo are described in different parts of the grammar, with no cross-references between these parts, and no subject index. The construction in (11) is described in the section on subordination,

while the construction in (12) (which is labeled 'independent purpose clause') is described in the chapter on verbs, under 'auxiliary verb constructions'. The reader is unlikely to know in advance that purpose in Cubeo is expressed by means of these two constructions, particularly because the construction in (12) appears to be quite rare cross-linguistically. So, unless they browse the whole grammar looking for constructions used to express purpose, they are most likely to disregard one of the two constructions, particularly the construction in (12).

A similar problem is encountered with languages using the same construction to express a variety of meanings that must be inferred from the context. For example, in Mandarin Chinese, purpose relations are expressed by means of a construction involving clause juxtaposition. This construction can be used to express a variety of relations between events, that must be inferred at the contextual level. This can be seen from the two possible readings of the sentence in (13):

Mandarin Chinese (Sino-Tibetan, Chinese; China)
(13) *Nǐ guì-xialai [qiú Zháng-san]*
you kneel.down beg Zhang-san
'You knelt down and begged Zhang-san/ You knelt down in order to beg Zhang-san.' (Li and Thompson 1973: 98)

In cases like this, the construction only conveys a very general meaning (for example, in the case of the serial verb construction in Mandarin Chinese, the fact that two events are related), and any more specific meaning is inferred from the context. As a result, grammars are most likely to define the construction in terms of its formal properties, rather than in terms of the functional domains it encodes. These properties, however, cannot always be readily related to the functional domains expressed by the construction. For example, the Mandarin Chinese construction in (13) is described in Li and Thompson 1981 in a section called 'serial verb constructions'. Once again, however, the reader is unlikely to know in advance that the constructions defined in this way are used in Mandarin Chinese to express purpose relations, and so runs the risk of missing the relevant construction.

It is quite clear that in all of these cases it would be much more convenient for the typologist user if the grammar were organized in terms of functional domains such as 'necessity', 'possibility' 'ability', 'desire' (or possibly 'modality' in general), 'inception', 'purpose' and the like. Such an approach would however have a number of problems. First, as was pointed

out above, a form-to-function description gives a more immediate idea of how the language works, so it should be included in a grammar anyway. This means that if a function-to-form approach were also taken, the grammar would involve quite a lot of redundancy.

Thus, neither the form-to-function approach nor the function-to-form approach are free from problems. A number of compromise solutions between the two approaches are however available. One obvious solution is inclusion within the grammar of detailed subject indexes, referring both to the constructions and the functional domains being described. In this way, the reader is able to immediately identify all of the places in the grammar where the functional domain under investigation is discussed. In fact, many grammars, for example those published in the Mouton Grammar Library, do have detailed subject indexes including functional categories such as causativity, desire and the like. However, many other grammars lack subject indexes altogether (this is for example the case with many of the grammars in the Pacific Linguistics series and the SIL series). Also, some grammars have subject indexes, but these are organized in terms of formal categories, or a mixture of formal and functional categories. This may make it difficult to retrieve the relevant information. For example, Fortescue's grammar of West Greenlandic (1984) has a subject index including entries such as 'aspect', 'mood', and 'verbal inflection'. Verbal inflection is a formal category. Aspect and mood are semantically based categories, but they pertain to one specific way of expressing the underlying semantic notions, namely in terms of verb paradigmatic categories. As the affixes illustrated in (3) and (7) fall under 'mood' and 'aspect' respectively, and they are part of verbal inflection, information about where these affixes are described in the grammar can be found under the corresponding index entries. However, once again, modal and phasal notions are not always expressed in terms of verb-paradigmatic categories or by means of verbal inflection cross-linguistically, and the reader may not know in advance how they are expressed in West Greenlandic, for example. So they may fail to realize what the relevant index entries are.

Another solution to the problem of recovering information from the various parts of a grammar is the one envisaged by Comrie (1998) and Zaefferer (this volume), namely the creation of electronic grammars. In an electronic grammar, access to information is in principle independent of the linear ordering of the various topics, or the collocation of individual topics in specific parts of the grammar. For example, an electronic grammar may have links between individual functional domains and all of the construc-

tions used to express these domains in the language, or individual constructions and all of the functional domains associated with that construction. In this way, the limitations imposed by the linear and hierarchical structure of paper grammars may be overcome (Comrie 1998: 14–15).

Finally, grammars could be provided with resumptive tables matching constructions and functional domains. Some grammars provide tables illustrating the range of functions associated with a given construction (see for example Evans 1995: chap. 11). However, there could also be tables illustrating the range of constructions expressing a given function, with references to the appropriate parts of the grammar. Such tables would be expanded versions of subject indexes, while at the same time avoiding the redundancy involved by treatment of the same topic from both a form-to-function and a function-to-form perspective in different parts of the grammar.

All of these solutions provide the reader with useful tools to identify the whole range of constructions used to express a particular functional domain in a language. It should also be pointed out, however, that subject indexes, electronic grammars and resumptive tables do not completely solve the problem of information recoverability in a grammar. A general problem is that the functional domains selected for discussion in a grammar cannot always be defined in a straightforward way. For example, phasal notions such as 'begin', 'continue' etc. pertain to the internal temporal development of events, and are therefore related to aspectuality (intended as a functional category, that may be expressed differently in individual languages, for example by means of verbal affixes or phasal predicates). However, as pointed out by Siewierska (1991: 118), these notions are semantically quite different from aspectual categories such as perfective, imperfective and the like. As a result, it is not clear whether they should be described under aspectuality, or under a separate category. On the other hand, strict delimitation of the boundaries of a particular functional domain may end up in a proliferation of the functional domains that should be taken into account in the grammar. Although there probably is no ready solution to this problem, awareness of it may lead to greater accuracy and typological adequacy in defining and treating these functional domains.

3. Information about interacting parameters

Grammars are often centered around categories identified in terms of specific features. However, these categories usually present a great deal of internal differentiation, in that their structural properties may vary depending on an often large number of interacting parameters. For example, complement clauses are generally defined as clauses that function as an argument (subject or object) of a main predicate. However, as first pointed out by Givón (1980) (see also Noonan 1985; Cristofaro 2003), the form of complement clauses may vary to a considerable extent depending on the semantics of the complement-taking predicate. For example, particular complement-taking predicates are more likely than others to take complements with reduced verbal inflection, and the same complement-taking predicate can take different complement types in different semantic contexts. Similarly, relative clauses are usually defined as clauses that function as adjectival modifiers of a head noun in the main clause. However, as shown by Keenan and Comrie (1977) and Lehmann (1984), the form of relative clauses may vary depending on the syntactic role of the relativized item.

Failure to recognize this fact often leads to incomplete and typologically inadequate descriptions of individual categories in particular languages. For example, descriptions of complement clauses often provide information about only a few complement-taking predicate types, or possibly even just one. This is for instance the case with Reh's (1985) grammar of Krongo, where the description of complement clauses is supported with examples involving complements of utterance, knowledge and desiderative predicates, and nothing is said about whether or not the relevant complement types can also be used with other predicate classes. Similarly, Arokhianatan's (1987) grammar of Tangkhul Naga only provides information about complements of utterance predicates.

In cases like this, it is impossible to gain a complete overview of the complementation system in the language, because the fact that a particular predicate type takes a particular complement type tells very little, or possibly nothing, about what complement types combine with the other predicate types, or even the same predicate in different semantic contexts. A related problem is that the same complement-taking predicate may take different complement types when used in different semantic contexts. This means that, when describing a particular combination of complement type and complement-taking predicate, the grammar should ideally specify

whether the relevant complement-taking predicate can also take other complement types, and, if yes, under what circumstances. Failure to do so may make it impossible for the reader to use the data provided by the grammar. This can be illustrated with an example from Bhatia's (1993) grammar of Punjabi. Bhatia (1993: 144) argues that perception predicates such as 'see' take indicative complements introduced by a complementizer. However, the only example of perception complements provided in the grammar is the following:

Punjabi (Indo-European, Indo-Iranian; India)

(14)	*tad*	*ó* *ne*	*vekhiaa*	*ki*	*ciRii*	*uaDDii*
	then	he ERG	see:PAST:M:SG	that	bird:F:SG	fly:PAST:F:SG

'Then he saw that a bird flew.' (Bhatia 1993: 44)

The English translation of this sentence does not entail that the action described by the complement-taking predicate is one of sensory perception. The perceiver might have realized that a bird flew without actually seeing the bird y (for example, he might have had indirect evidence that a bird flew by seeing the branches of a tree move, or the like). In this case, the predicate does not function as a sensory perception predicate, but rather as a predicate of acquisition of knowledge, not unlike 'realize', 'understand' or the like. Neither the description provided by the grammar nor the example glosses specify whether or not the Punjabi construction involves sensory perception. Since the example is not part of a text, this information cannot be retrieved from the context either[5].

In a number of languages, however, predicates like 'see' may be used both as sensory perception predicates and predicates of acquisition of knowledge, and may then take different complement types accordingly. One such language is English, where constructions such as 'he saw the bird fly' can only be used if the predicate describes an act of sensory perception. Another one is Ancient Greek, where predicates such as *horân* 'see' take participial or indicative complements depending on whether they denote sensory perception or acquisition of knowledge (Cristofaro 2003: 106). This is illustrated by the contrast between (15a) and (15b) below:

(15) a. *ka ē gunè̓ eporaî min*
and the woman see:IMPF.3G 3SG.ACC.SG
exiónta
go.out:PRES.PTCPL:ACC.M.SG
'And the woman saw him go out.' (Herodotus, 1.10.6)

b. *horaîs ō Melḗte hōti*
see:PRES.IND.2SG VOC Meletus that
sigaîs kaí ouk écheis
be.silent:PRES.IND.2SG and not have:PRES.IND:2SG
eip-eín?
say.AOR:INF
'Do you see, Meletus, that you are silent and cannot tell?' (Plato, Apology, 24d)

This means that, in the absence of further specification, one cannot make any assumption about the actual distribution of the Punjabi construction. Moreover, in cases like this one cannot know whether the grammar does not provide any specification about the distribution of the relevant construction because that's the only possible construction, or simply because other possible construction types were not taken into account. So the information provided in the grammar cannot actually be used to determine the complementation pattern of perception predicates in Punjabi.

Cases like this are quite common in reference grammars. For example, as is well-known, in a number of languages accessibility to relativization is restricted to some syntactic roles only. When describing relativization strategies in a language, grammars often do not specify to what syntactic roles a particular relativization strategy applies, and the examples provided concern some syntactic roles only, usually the ones more accessible to relativization such as subject and object. This is for example the case in Morse and Maxwell (1999: 151–159). When describing relativization strategies in Cubeo, this grammar only mentions relativization of subjects, objects, and place adjuncts, without noting whether relativization of other roles is possible.

This possibly originates from the fact that relative clauses formed on more accessible roles are more frequent at the discourse level (Fox 1987; Fox and Thompson 1990), and easier for speakers to comprehend and produce. Hence it is easier to collect data about the relativization of more accessible roles than about the relativization of other roles. In the absence of any specification, however, it is not possible for the reader to establish

whether the relevant relativization strategies apply to all syntactic roles, or only to those that have been exemplified, and, in the latter case, whether the other roles are relativizable at all, and if so, how. Thus, explicit specification should be provided both about what roles are accessible to relativization in the language, and how these roles are relativized.

Particularly crucial in this area is a more general problem regarding the balance of corpus and elicited data in the grammar. If the data are from naturally occurring discourse, it may be the case that the corpus includes no examples of a particular phenomenon (such as for example relativization of a less accessible role) because that phenomenon is less frequent at the discourse level, not because it is altogether impossible in the language. On the other hand, if the data were elicited, and no examples of the relevant phenomenon could be obtained from elicitation, the reader may reasonably conclude that that phenomenon is impossible in the language. This implies that ideally, if data from naturally occurring discourse provide no evidence about some particular grammatical phenomenon, the relevant evidence should be sought through elicitation[6]. In fact, although the issue of elicited as opposed to naturalistic data is an object of debate among fieldworkers (Rice, this volume), reference grammars are often based on a mixture of data from naturally occurring discourse and elicited data (see for example Frank 1990: 2; on the other hand, Heath 1984 provides an example of a grammar ostensibly based just on natural material).

A similar situation is encountered in descriptions of the constructions used to express notions such as purpose and desire that something takes place. In many languages, these constructions vary depending on whether or not the events being described share a participant. For example, in Retuarã, desiderative predicates have complements with verbs not inflected for person under identity of subject between main and complement clause, while the verb takes person agreement affixes when the subject of the complement clause is different from the subject of the main clause.

Retuarã (Tucanoan, Western Tucanoan; Colombia)

(16) a. *waʔa eʔe-ri-ka* *ko-yapa-nu*
she get-DVBLZ-NT 3:F:SG-want-PRES
'She wants to get fish.' (Strom 1992: 160)

b. *waʔa* ***yi****-eʔe-ri-ka* *ko-yapa-nu*
she 1:SG-get-DVBLZ-NT 3:F:SG-want-PRES
'She wants me to get fish.' (Strom 1992: 160)

When describing particular constructions used to express purpose or desire, grammars often provide no information about whether the use of these constructions is related to sharing of participants between the linked events, or motion (see the discussion of Cubeo in connection with examples (11) and (12)). In many cases, though, the examples provided only concern particular cases, typically ones involving same subject between main and dependent clause, and, as far as purpose is concerned, motion. For example, Cubeo has desiderative suffixes that can be attached to verbs. In all of the examples provided in the grammar, the entity that desires the realization of some situation is the same one that brings it about:

Cubeo (Tucanoan, Central Tucanoan; Colombia)

(17) *'dɨ̃-wa-ij-Rɯɨ́-bU* *Mitú-I*
go-ACST-DES-NFUT.PL.NOMLZ-be Mitú-LOC
'They customarily want to go to Mitú.' (Morse and Maxwell 1999: 28)

The notions of purpose and desire involve an element of will, or an interest in the realization of some event. Someone's desires or interests are more likely to concern the occurrence of events involving themselves rather than events in which they play no role. Therefore, there is reason to believe that sharing of participants between the events being described is the prototypical situation for purpose and desire constructions. This is presumably the reason why the data provided by grammars usually concern cases where the linked events share a participant. Once again, however, in the absence of further specification, one cannot assume that the relevant constructions are also used when the relevant events share no participants. So, for example, Morse and Maxwell (1999) provide no information about whether desiderative suffixes can also be used in Cubeo when the entity that desires the realization of some event is different from the entity that brings about that event, nor about how this situation is encoded otherwise. Conversely, purpose relations involving motion imply that the motion event and the event representing the purpose of motion share a participant, while other types of purpose relation have no such implication. The Cubeo construction in (11) is not used with motion verbs. When describing this construction, however, the grammar only provides examples involving no sharing of participants. As a result, there is no information about whether or not this construction can also be used under sharing of participants between the linked events, and, if not, how this situation is expressed in Cubeo.

Another domain in which grammars fail to provide adequate information about the parameters interacting with a particular category is the expression of tense, aspect and mood. For example, cross-linguistic investigation shows that the expression of habitual aspect is sensitive to whether the habitual situation is located in the present or the past. In many languages, present habituals are zero-marked, while past habituals are marked overtly (Bybee, Perkins, and Pagliuca 1994: 158–160). Also, habituals are sometimes expressed by means of the same constructions used to express various types of unrealized situation, but this phenomenon seems to involve past rather than present habituals (Cristofaro 2004). It follows that, when describing habituality, a grammar should ideally specify how past and present habituals are expressed. In many cases, however, this is not specified, and the examples provided (if any) only concern present habituals (this is for example the case with many of the grammars used in Cristofaro 2004; see Cristofaro 2004: table 1 for details).

Also, grammars often fail to provide information about what restrictions there are (if any) on the tense, aspect and mood of particular clause types. In many languages the verb forms used in particular clause types are inflected for tense, aspect and mood, but the examples provided by the grammar involve verb forms displaying just one tense, aspect or mood value. In the absence of further specification, this makes it impossible for the reader to find out whether or not the relevant verb forms may also have other tense, aspect and mood values. For instance, when sensory perception predicates allow complements with verb forms inflected for aspect, the examples provided by grammars usually involve imperfective verb forms. This is the case in the following sentence from Huallaga (Huánuco) Quechua:

Huallaga (Huánuco) Quechua (Quechuan, Quechua; Peru)

(18) *Aywa-**yka**-q-ta* *rika-shka-:*
go-IMPFV-SUB-OBJ see-PERF-1
'I saw him going.' (Weber 1989: 116)

Imperfective verb forms are exactly what one would expect to find in complements of sensory perception predicates, because sensory perception predicates imply that the event being perceived is ongoing at the moment the act of sensory perception takes place. If the grammar does not provide explicit information about whether or not there are semantic restrictions on the aspect value of the complement clause, however, one cannot be sure

whether the forms attested in the examples are the only possible ones, or whether other possibilities are also allowed.

What all these cases show is that selection of a particular distinctive criterion to identify a given category (such as the fact that a certain clause is a relative clause or a purpose clause) does not imply that the structural properties of that category will always be the same. For example, there will be different types of relative or purpose clauses, different habitual forms, and the like. As a result, when describing a particular category in a language, as many interacting parameters as possible should be taken into account. The choice of the interacting parameters is of course an empirical matter, in that the linguist basically will tend to notice that a particular parameter is or is not relevant to the structural properties of the category being described. Previous knowledge of the parameters that may be relevant to a particular category, based on descriptions of other languages or general typological observations, may however be of help in deciding what parameters one should focus on when collecting data on the relevant category.

4. Identifying categories

Grammars usually identify the categories they describe in terms of particular structural features, or a combination of structural features and functional properties. For example, particular verb forms are identified in terms of features such as the presence vs. absence of inflectional distinctions, the presence vs. absence of nominal morphology, or the ability to occur in independent clauses. Particular clause types are identified in terms of presence of particular verb forms (e.g., finite vs. nonfinite clauses, nominalized clauses, serial clauses), or their syntactic function vis a vis other clauses (for example, coordinate vs subordinate clauses, and, within subordinate clauses, complement, adverbial, and relative clauses). Grammatical relations such as subject or object are usually identified in terms of a combination of morphosyntactic properties, such as case marking, verbal agreement, or ability to undergo particular syntactic operations, and semantic properties such as agentivity.

As was observed in section 1, cross-linguistic research has shown that categories identified in terms of particular structural features, or combinations of particular structural features and particular functions, turn out not to be cross-linguistically robust. For example, many of the criteria traditionally taken as distinctive for subjects identify different argument roles in

different languages (A+S in nominative as opposed to S+O in ergative: see, among others, Dixon 1994). Similarly, the various properties taken as distinctive for non-finiteness (such as lack of verb inflectional distinctions, presence of nominal morphology on the verb, or inability of the verb form to occur in independent clauses) do not combine in the same way cross-linguistically, or even across different verb forms within the same language (Koptjevskaja-Tamm 1993).

This has a number of consequences for the definition of the categories described in a grammar. Since individual categories are language-specific, it is essential that the information provided by the grammar show in what ways they are similar and in what ways they differ from the categories that can be identified in other languages. A major implication of this is that the grammar should always provide as much information as possible about the criteria used to identify a particular category (such as for example subject, direct object, nonfinite verb forms etc.). As was mentioned in section 1, most authors are now quite aware of this, so more recent grammars usually provide detailed discussions of the criteria followed for establishing at least some categories. This is especially true for categories such as subject or direct objects, or parts of speech, due to the huge theoretical debate on these issues over the past decades.

In other cases, however, the existence of particular categories in the language is simply taken for granted, and the grammar does not specify whether there are language internal criteria to identify them, or they are identified on the basis of similarities with categories identified in other languages. This is often the case, for example, with the arguments vs. adjunct distinction. Adjuncts (or obliques, peripheral constituents, or satellites, as they are variously called) are usually identified as a distinct category with respect to arguments on the basis of morphosyntactic criteria such as for instance presence vs. absence of case markers or adpositions. In some cases, however, the distinction between arguments and adjuncts may be blurred, at least at the morphosyntactic level. In Anejom̃, for example, certain time and place adjuncts are zero marked just like objects, intransitive subjects, and inanimate transitive subjects. On the other hand, animate transitive subjects are marked in the same way as certain types of adjuncts (Lynch 2000: chap. 6). However, Lynch (2000) distinguishes between a peripheral phrase category, including all types of adjuncts, and a core argument category, including subjects and objects. Given the structural similarities between certain types of peripheral phrases and certain types of core arguments, it is not clear whether these two categories are identified on the

basis of language internal criteria (for example, structural properties that are common to all members of either category, and which make it possible to distinguish them from members of the other category), or just the fact that languages are generally assumed to have an argument vs. adjunct distinction[7].

Another important consequence of the language-specificity of individual categories concerns the labels used for these categories.

Grammars display an overwhelming tendency to use the same labels, often deriving from traditional grammar (see section 1) for categories that display some similarities across languages; as these categories are not entirely overlapping, however, it is essential that the labels be used so as to reflect as much as possible the extent to which the various categories are alike and the extent to which they differ. This is often not the case.

For example, some languages display a variety of constructions consisting of a string of juxtaposed verbs with no intervening conjunctions. These verbs usually refer to events that are understood to be related in some way, and are often part of the same event frame. Individual verbs in the series may have a variety of forms. In some cases, each verb is fully inflected for the categories allowed to verbs in the language, may have independent arguments, and there are no specific restrictions as to the time reference, aspect and mood value of the events being described. This is in fact the case with the Mandarin Chinese construction exemplified in (13) above (Li and Thompson 1981: chap. 21). Another example from Anejom̃ is provided in (19).

Anejom̃ (Austronesian, Malayo-Polynesian; Vanuatu)

(19) *Ekrau* *edou ajamrau,* *ek* *ap̃ahni*
1EXL.DL.AOR roam we.EXL.DL 1SG.AOR go.everywhere
añak *era-i* *iji-teptag* *asga*
I LOC-CS COL-nakamal all
'We wandered around and I went to every single *nakamal.*'[8] (Lynch 2000: 141)

In other cases, there are structural and semantic constraints on individual verbs. For example, in Berbice Dutch Creole each verb is fully inflected, but tense, aspect, mood, person and illocutionary force usually must be the same for all verbs (Kouwenberg 1994: 388–407).

Berbice Dutch Creole (Creole, Dutch based; Guyana)

(20) *Titijo* *koma* *nau* *o* *reja,* *reja*
time:3:SG come:IMPFV now 3:SG ride:IMPFV ride:IMPFV
koma *nau*
come:IMPFV now
'When he comes, he rides, comes riding.' (Kouwenberg 1994: 388)

Sometimes, only one verb in the series is fully inflected for the categories that are relevant to verbs in the language, and the other verbs depend on this verb for the expression of these categories. This is the case in the Anejom̃ example below.

Anejom̃ (Austronesian, Malayo-Polynesian; Vanuatu)

(21) *is* *ãm* *lecse-i* *uwu-n* *aan* *imy-athut*
3SG.PAST and take-PL-TR POSS.G-his he COM-run
awapãwapã *imy-apan* *a-nworen* *iyiiki*
tiptoe COM-go LOC-place DEM.AN.SG
' … and he took his and ran on tiptoe and brought it to that place.' (Lynch 2000: 151)

In this sentence, only the first verb is specified for tense and person, while the following verbs only bear the comitative marker *imy-* and depend on the first verb for the identification of their time reference and the person of the subject.

A similar situation is found in the following sentence from Kobon.

Kobon (Trans-New Guinea, Main Section; Papua New Guinea)

(22) *Yad* *ma* *rɨb-em* *dokta* *wös* *uŋan* *g-aŋ*
1.SG foot cut-SS:1SG doctor sore parcel do-IMP:3SG
a *g-em* *ausik* *ar-bin*
QUOTE do-SS:1SG aidpost go-PERF:1SG
'Because I cut my foot, I went to the aidpost so that the doctor could bandage the sore.' (Davies 1981: 38)

In this case, only the last verb in the series is inflected for tense, aspect and mood, and the other verbs depend on it for identification of their time reference and their aspect and mood value.

These constructions are described in the literature under two major labels, 'verb serialization' and 'clause chaining'. However, these labels are often used quite inconsistently from one grammar to the other. 'Clause

chaining' is usually used for constructions such as the Kobon one, where only one verb in the series is fully inflected for the categories relevant to verbs in the language. However, Lynch (2000) labels as 'clause chaining' also the construction in (19), where all verbs are fully inflected and could occur independently. Similarly, 'verb serialization' is used for constructions where all verbs are fully inflected and quite independent from each other, as in Mandarin Chinese (Li and Thompson 1981: chap. 21). However, this label is occasionally used also for constructions where either some of the linked verbs have reduced inflection, as in the Anejõm example in (21) (Lynch 2000: 150–152), or they are fully inflected but not independent of each other, as in Berbice Dutch Creole (Kouwenberg 1994: 388). Use of the same labels for these various constructions presumably originates from the fact that they all involve a string of juxtaposed verbs. It would however be more consistent if use of labels reflected the internal differentiation within constructions displaying this property. For example, constructions where all of the linked verbs are fully inflected, such as the ones in (13) and (19), should be labelled in the same way, and distinguished from constructions where verbs display reduced inflection, such as the ones in (21) and (22). These two construction types should in turn be labeled differently from constructions where verbs are fully inflected but not independent from each other, as in (20).

Another problem is that grammars sometimes use highly idiosyncratic labels to describe categories that are similar to categories found in other languages, and could be described by using traditional labels familiar to most linguists. For example, in Morse and Maxwell (1999) clause linkage types in Cubeo are divided into relative clauses, temporal adverbial clauses, locative adverbial clauses, 'logical adverbial clauses', and 'event clauses'. One such division appears to be based on a mixture of traditional grammatical notions (relative clause, adverbial clause) and semantic notions (logical clauses, locative clauses, event clauses). The labels 'logical clause' and 'event clause' are however highly idiosyncratic, and in fact they cover clause types for which more traditional and better-known labels are available, for example clauses expressing purpose, cause, concession, conditions, and comparison. In fact, these labels are used in subsections describing the various types of logical clauses, but subsections are not listed in the table of contents, and the grammar has no subject index. So, in order to know that logical clauses correspond to well-known clause types such as purpose clauses and the like, the reader has to read the whole section on

'logical clauses', and they may have no reason to do so if they don't realize that logical clauses actually correspond to these clause types[9].

In this case, a problem similar to the one described in section 2 arises. A reader interested in particular grammatical phenomena (for example, purpose clauses, conditional clauses, or the like) may not know in advance what labels are used in the grammar to designate these phenomena. If the labels used in the grammar do not allow easy identification of these phenomena, they may not realize where the phenomena are described in the grammar, thus missing the relevant information.

A similar situation is found in the aforementioned chapter on serial verb constructions in Li and Thompson's (1981) grammar of Mandarin Chinese. In Mandarin Chinese, serial verb constructions may function as complement constructions, for example with predicates of acquisition of knowledge (23a). In this case, the linked clauses need not share any arguments. However, serial verb constructions are also used with complement-taking predicates involving sharing of arguments between main and complement clause, such as 'tell to' (23b).

Mandarin Chinese (Sino-Tibetan, Chinese; China)

(23) a. *wǒ méi xiǎng dào nǐ zhù zài Nánjīng*
I not think arrive you live at Nanjing
'I didn't realize you lived in Nanjing.' (Li and Thompson 1981: 599)

b. *tā jiào wǒmen qǐng shǎo shuō huà*
s/he tell we please little speak speech
'S/He told us please not to talk too much.' (Li and Thompson 1981: 610)

The two cases in (23a) and (23b) are described in different sections of the chapter. (23a) is described in a section devoted to constructions where one of the two clauses is the subject or object of the other. (23b) is described in the section on pivotal constructions, that is, constructions where the same noun phrase is simultaneously the subject of the second verb and the direct object of the first verb. This distinction blurs the fundamental similarity between these two cases, that under most analyses would probably be grouped together as instances of complement constructions (albeit semantically different ones). In fact, the label 'pivotal construction' is a generic one that cannot readily be associated with complement constructions, so,

once again, the reader may fail to realize that some of the complement constructions of Mandarin Chinese are actually described in this section.

Of course, inconsistent use of labels from one grammar to the other, or use of highly idiosyncratic labels, may not represent a major problem as long as the grammar specifies what the exact properties are of the categories designated by the label. In fact, use of idiosyncratic labels has been encouraged within structuralism, in an effort to capture what were felt as unique properties of every linguistic system. Once typological research has shown that cross-linguistic variation is not unlimited, and reflects ordered and universally valid patterns, this perspective has been abandoned, and the need has been increasingly felt for more standardized terminology in language description.

It is however clear that inconsistent use of labels and use of idiosyncratic labels make it more difficult for the reader to find out what the differences and similarities are between the categories being described and comparable categories in other languages. Thus, a standardization in the labels used to denote particular categories would result in greater comparability of the data provided by different grammars, and a concomitantly greater typological adequacy of the grammars themselves. Such a standardidazion would require that choice of the labels used in the grammar should be based both on the labels used in other grammars, and typological praxis in general.

5. Concluding remarks

In the previous sections, two basic problems in the organization of reference grammars were outlined. First, the organization of the grammar may lead the user to miss pieces of information that actually are there, but are located in parts of the grammar where they may be not easily recoverable (section 2). Second, the grammar may actually fail to provide complete and typologically adequate information on the phenomena being described. This may be for two reasons. On the one hand, the grammar may fail to take into account parameters that interact with the categories being described and may determine variations in the structural properties of these categories. This results in incomplete information about the relevant categories (section 3). On the other hand, the description may be organized so as to fail to reveal the differences and similarities between the relevant categories and comparable categories in other languages, thus resulting in

lower typological adequacy of the information provided by the grammar (section 4).

A number of solutions to these problems were proposed. Recoverability of information from different parts of the grammars may be enhanced by tools such as subject indexes, resumptive tables or, in the case of electronic grammars, links between the various parts of the grammar. These solutions are empirical ones, and they are in principle independent of the theoretical orientation of the author of the grammar, and the theoretical and methodological choices made in describing particular categories. On the other hand, whether or not the grammar provides complete and typologically adequate information about particular categories is crucially related to the author's degree of awareness about the way in which comparable categories are treated in descriptions of other languages, and cross-linguistic research on these categories. This means that the description of individual languages is crucially tied to knowledge about other languages, both knowledge about the way in which other languages are described, and knowledge about the general properties displayed by individual grammatical phenomena cross-linguistically.

The paper has taken the perspective of a typologist user interested in cross-linguistic comparison. The needs of one such user may not completely overlap with the needs of other user types. For example, the remarks in section 2 about recoverability of information from the various parts of a grammar imply that ideally a typologist would like to be able to find the information they need without having to read the whole grammar. This is in fact a practical necessity. Given the size of typological samples, that often include hundreds of languages, it is not always feasible for a typologist to read the whole grammar for each of the languages they take into account. On the other hand, the problem of information recoverability is less crucial for a user who is interested in a specific language, because such a user will probably read the whole grammar, and will therefore be able to find specific pieces of information anyway.

Another domain in which the needs of the typologist user may not overlap with those of other user types is terminology. While standardization of the terminology used in reference grammars enhances the cross-linguistic comparability of the data provided by the grammar, there may be a number of reasons for using nonstandard terminology, including the existence of established terms peculiar to the study of a particular language or language family, motivating a terminology that may be more familiar to readers interested in the language as such, rather than in cross-linguistic comparison.

Also, typologists, with their need for linguistically standardized data, need to rely on elicited data more than other types of user. As typologists are interested in the cross-linguistic manifestation of some grammatical phenomenon, rather than some particular language as such, it is crucial, from their point of view, that the grammar provide data about that phenomenon. However, as illustrated in the discussion on relativization in section (3), data from naturally occurring discourse may provide no data about the relevant phenomenon. In this case, it is desirable, from the typologist reader's point of view, that the relevant data be obtained through elicitation.

In sections 2–4 a number of proposals were put forward that are meant to enhance the typological adequacy of grammars, such as organization of the content of a grammar in terms of functionally based categories, compliance with the results of typological research in terms of parameters taken into account in the analysis, use of elicited data as a means to supplement data from naturally occurring discourse, and standardization of the descriptive framework and terminology adopted in individual grammars. These proposals are primarily of interest to the typologist user. However, as the discussion in sections 2–4 should have made clear, compliance with these proposals should also result into greater completeness of the information provided in the grammar, and greater generality of the descriptive assumptions made in the grammar. This is of course of interest to any type of reader.

6. Notes

1. The expansion in the range of topics covered by reference grammars has also been crucially influenced by generative grammar, see Rice (this volume).
2. Two notable exceptions are Schachter and Otanes (1972) and Dixon (1972), where the notion of subject is deliberately eschewed because of the problems in applying this notion to Tagalog and Dyirbal respectively.
3. For example, some grammars (e.g. Arnott 1970; Walker 1982) seem to assume little beyond the concepts of traditional grammar. French grammars, such as for example Thomas (1963), Dez (1980), or Cloarec-Heiss (1986), are usually written within the framework of French structuralism. Some American grammars, for example Allin (1976), are written within the framework of tagmemics, while others (e.g. Vitale 1981) assume some version of transformational-generative grammar.

4. Indeed, investigators like Dixon (1997) have gone so far as to suggest this be dignified by the label 'Basic Linguistic Theory' to stress that this builds on a multimillennial theoretical tradition in linguistics.
5. In fact, in some cases information missing in a grammar can be recovered if the grammar has a collection of texts as an appendix. For example, it may be the case that a grammar does not say anything about whether or not a particular construction can be used in a particular semantic context, but the grammar is supplemented with texts where the construction is actually used in the relevant contexts. This is the case with Weisshar and Illius (1990), where a rather sketchy description of the grammar of Shipibo-Conibo is supplemented with texts including examples of categories not taken into account in the description itself, for example temporal clauses. It is however clear that the information that can be obtained in such a case is based on the reader's inferences and intuitions about the language, rather than on direct evidence about the use of a particular construction. Ideally, therefore, texts should supplement explicit discussion about particular phenomena, rather than replace it.
6. For a similar perspective see Rice (this volume) on the role of generative theory in driving systematic elicitation in fieldwork.
7. For a detailed discussion about the impossibility of establishing a clear-cut distinction between arguments and adjuncts in some cases, see Glinert (1989: chaps. 15 and 21) on the distinction between objects and adjuncts in Hebrew.
8. In Vanuatu, a *nakamal* is a traditional meeting house where kava (an herbal drink) is served and consumed.
9. For similar observations about the use of idiosyncratic labels in language description, see Hill's discussion (this volume) of Benjamin Whorf's grammar of Hopi.

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8. Abbreviations

ACC	accusative
ACST	accustomed
ADEL	adelative
ALL	allative
AN	anaphoric
AOR	aorist
CLS	classifier
COL	collective
COM	comitative
CS	construct suffix
DEM	demonstrative
DES	desiderative
DIST	distal
DL	dual
DS	different subject
DVBLZ	deverbalizer
ERG	ergative
EXCL	exclusive
FUT	future
G	general
IMP	imperative
IMPF	imperfect
IMPFV	imperfective
IN	inanimate
IND	indicative
INF	infinitive
LOC	locative
M	masculine
MOBL	modal oblique
N/H	nonrecent past/ present habitual
NEG	negative
NFUT	nonfuture
NMLZ	nominalizer
NOM	nominative
NT	neuter

OBJ	object
PAST	past
PERF	perfect
PL	plural
POSS	possessive
PRES	present
PTCPL	participle
PUR	purpose
QUOTE	quotative
REF	point of reference
SG	singular
SS	same subject
STVZ	stativizer
SUB	subordinator
TOP	topic
TR	transitive
VOC	vocative

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Calculus of possibilities as a technique in linguistic typology

Igor Mel'čuk

1. The problem stated: A unified conceptual system in linguistics

A central problem in the relationship between typology and the writing of individual grammars is that of developing a cross-linguistically viable conceptual system and a corresponding terminological framework. I will deal with this problem in three consecutive steps: First, I state the problem and sketch a conceptual system that I have put forward for typological explorations in morphology (Sections 1 and 2). Second, I propose a detailed illustration of this system: a calculus of grammatical voices in natural languages (Section 3). And third, I apply this calculus (that is, the corresponding concepts) in two particular case studies: an inflectional category known as antipassive and the grammatical voice in French (Sections 4 and 5). In the latter case, the investigation shows that even for a language as well described as French a rigorously standardized typological framework can force us to answer questions that previous descriptions have failed to resolve. I start with the following three assumptions:

1) One of the most pressing tasks of today's linguistics is *description of particular languages*, the essential core of this work being the writing of grammars and lexicons. A linguist sets out to describe a language as precisely and exhaustively as possible; this includes its semantics, syntax, morphology and phonology plus (within the limits of time and funds available) its lexicon.

2) Such a description is necessarily carried out in terms of some *predefined concepts* – such as *lexical unit, semantic actant, syntactic role, voice, case, phoneme,* etc.

3) For the grammars/lexicons of different languages to be coherent and comparable, they must be developed within a *general conceptual framework*. The concepts used in linguistic description have to be: first, univer-

sal, i.e., naturally applicable to any language; second, sufficiently specific, i.e., naturally covering any linguistic phenomenon, no matter how idiomatic; and third, organized in a flexible system that naturally allows for the creation of new, 'finer-grained' concepts, if need be, by a regular procedure.

Such a framework can come only from linguistic typology joining forces with general linguistics. Taken together, these two disciplines must offer linguistic practitioners a general descriptive scheme involving universal concepts, in terms of which a particular grammar/lexicon could be written. This must be a unified conceptual apparatus and a metalanguage for linguistics, sufficiently rich and formalized to serve as a tool in language description. In terms of the broader questions of scientific inquiry and methodology, this task can be characterized with respect to two names and two achievements: Mendeleev in chemistry and Bourbaki in mathematics.

The Russian chemist D. Mendeleev, by creating (in 1869) the Periodic Table of elements, thereby demonstrated the strength of the *deductive approach* – namely, the famous 'empty cells' of the system that predict the existence of new elements. Mendeleev's technique was the construction of a calculus of logical possibilities anchored in the knowledge of some basic facts.

The French mathematician N. Bourbaki[1], who never existed, nevertheless created (between 1930 and 1950) a common unified metalanguage for all divisions of modern mathematics and thus ensured considerable progress in the field.

Mendeleev's deductive calculus and Bourbaki's unified metalanguage are intimately related: each unavoidably implies the other. I believe that these two approaches, properly combined, constitute the main framework for linguistic thinking today. Promoting them leads to two productive feedback loops. On the one hand, typology feeds on descriptive grammars, while descriptive grammars put to work the conceptual apparatus developed in typology: they verify, complete and correct it. On the other hand, general linguistics develops theories that embody concepts coming from typology and organizes them into systems, while typology tests these concepts and systems 'experimentally' – against the set of languages around the world. To sum up:

> Our aim is to develop a conceptual system for linguistics such that its concepts are constructed deductively based on a few previously selected linguistic facts and then can be proven typologically valid.

2. Conceptual system proposed: A set of definitions

I will start by formulating the requirements on which the linguistic conceptual system proposed is based. This system is nothing but a set of rigorous definitions, or a kit of systematically organized names for linguistic phenomena. I have to characterize these definitions – first substantively, and then formally. (A full-fledged system of linguistic concepts for morphology is presented in Mel'čuk (1993–2000), where 248 morphological concepts are defined, illustrated and discussed. The interested reader may refer to this book for more details on my approach.)

2.1. Substantive aspect of the definitions

The definitions considered here have the following three *substantive characteristics*: strictly deductive character, maximal separation of defining features, and orientation towards prototypical cases.

Deductive character of the definitions proposed

Suppose I have to define rigorously a concept *C* that is intuitively more or less clear, especially in some obvious cases; however, in many border cases it is confusing and unsatisfactory. First of all, I have to find and define the *most general concept* of which *C* is but a particular case. I emphasize: the most general concept, not *genus proximum* ≈ 'closest genus'. In other words, I begin by specifying the most general class to which the phenomena P_i covered by *C* belong, but which also includes many other phenomena Q_j not covered by *C*, but presumably related to P_i. Then I partition this class into the biggest subclasses available, ideally – into two subclasses, in such a way as to have all the P_i in one subclass; I repeat this operation again and again, until I get exactly the subclass containing *all and only* P_i – phenomena covered by *C*. (In this way, I establish the exact place of *C* among other similar concepts.) This approach is of course deductive: it proceeds from the most general to the most particular.

Let me illustrate with two brief examples: the concept of morph and that of ergative construction.

THE CONCEPT OF MORPH. Consider the following imaginary situation: the term *morph* is applied to (1) radicals[2] and suffixes (e.g., *cat-* and *-s*), to (2) meaningful alternations (e.g., *oo* ⇒ *ee*, as in *goose* ~ *geese*) and to (3)

prosodic markers (e.g., the tones that express different verbal tenses in some languages of the Sudan).[3] Is such a use valid or should we introduce better concepts and better terminology? The most general *classI* to which all three types of elements belong is 'elementary linguistic sign.' This *classI* is naturally subdivided in two subclasses: signs whose signifiers are segmental and suprasegmental *entities*, and signs whose signifiers are *operations*, also segmental and suprasegmental (there exist tonal alternations). Thus we obtain *classI.1* that contains radicals, suffixes and prosodic markers, and *classI.2* that includes all meaningful alternations. *ClassI.1* is further subdivided into segmental (*classI.1a*) and suprasegmental (*classI.1b*) signs; as a result, we need a common name for radicals and suffixes together, but to the exclusion of suprasegmental markers. What is more convenient than to call them *morphs*? (Signs of the *classI.1b* can be named *supramorphs*/*suprafixes*, etc.) It becomes clear then that to use *morph* for the three types of elements mentioned above – that is, for segmental entities, suprasegmental entities and operations – is a bad practice. It is better to NARROW the range of the term *morph* and apply it only to *segmental* elementary linguistic signs.

An important remark is in order here. Since my proposal concerns only the use of a name rather than some linguistic facts, it cannot be proven or disproved – in the strict sense of this term. I can only indicate why the proposed terminological use is more convenient. Thus, it is logically possible to keep applying the term *morph* to segmental and suprasegmental signs, distinguishing them by modifiers: *segmental morphs* vs. *suprasegmental morphs*. But then the class of most widespread and typical linguistic signs (= segmental elementary signs) and the class of relatively rare and rather 'exotic' signs (= suprasegmental elementary signs) will have formally similar complex names; it seems preferable to use a short and versatile name *morph* for the first class and coin a new term for the second. Note that such is nature of my whole endeavor: I propose a set of names ('glued' to corresponding concepts) that – hopefully – form a unified system and contribute to a better logical analysis of real linguistic phenomena.

THE CONCEPT OF ERGATIVE CONSTRUCTION. Traditionally, the ergative construction is defined as a 'finite transitive verb construction in which the Direct Object [= DirO] is expressed in the same way as the Subject of an intransitive verb.' However, I cannot accept such a formulation for a purely terminological reason: it covers no more than a particular case of a finite verb construction. The most general class of finite verb constructions (in case languages) that includes all instances of what is currently

called *ergative construction* is the predicative construction in which the Subject is marked by a case other than the nominative. I propose that it is just this construction which should be called *ergative construction*. Then I proceed to define its particular cases, among which we find an ergative construction whose DirO is formally identical to the Intransitive Subject. This is the most widespread and best known variety of ergative construction; yet logically and terminologically it is but a particular case. In this case, it is better to WIDEN the range of the term under analysis. Among other things, such a definition has the advantage of subsuming under ergative construction the construction with tripartite case marking (the Transitive Subject, the Intransitive Subject and the Direct Object are marked by three different cases).[4]

Observing the principle that concepts should be deduced from the most general class guarantees the strictly hierarchical character of the conceptual system developed.

Separation of defining features

Modern linguistics tends to describe a complex linguistic phenomenon P by a 'multifaceted' definition, which leads to a cluster concept, aimed at capturing the sum of properties that accrue to P. In contrast, I lay emphasis on separating as much as possible the defining features of P, thus creating fine-grained concepts each of which characterizes P only partially. That is, I include into a concept as little as I can. Not that I am against cluster concepts in general – on the contrary, on many occasions they cannot be avoided, and I am quite willing to use them. But first I will try to separate the properties of the phenomenon P as much as this separation will go and then define P by the minimal set of properties, that is, by a set of concepts rather than by one single complex concept. Thus, instead of trying to define grammatical voice by its function and by its form taken together, I separate them. As a result, I cannot say, for instance, that "[the Algonquian] inverse construction cannot be considered a voice at all, *since it is not an option chosen to express one pragmatic nuance or another*" (Payne and Laskowske 1997: 423; emphasis added – IM.): I do not consider the function of expressing pragmatic information to be a defining property of voice, in this case of the passive. Therefore, I can have both: passives that fulfill pragmatic functions and passives that do not. This is so because expressing communicative factors is typical of a number of inflectional categories, not

only of voice; while permuting the syntactic actants with respect to the semantic ones characterizes the passive only. (See Section 3 for more details.)

Observing this principle enhances the flexibility of the conceptual system, as well as its 'resolution power:' it uses, so to speak, simpler and more general concepts.

Orientation towards prototypical cases

I try, to the best of my ability, to preserve traditional linguistic notions as they arose 100 or more years ago, departing from the prescientific interpretation only where logic requires certain extensions or reductions. Therefore, the proposed morphological concepts are not very different *in substance* from those employed in mainstream traditional morphology. The novelty is basically *in form*: the concepts are rigorously defined, and these definitions are rigorously applied to a variety of phenomena. The essence is, however, the same as it has been in most traditional definitions: to analyze and define *prototypical instances* of the phenomenon under study. (See Taylor (1989) and Wierzbicka (1989) on the role of prototypes in linguistic description.)

My approach is basically identical with what Hockett (n.d.) proposed some 50 years ago for the concept of grammatical case, namely – to define case strictly on the basis of a prototypical case system, for instance, that of Latin or Ancient Greek, and then to generalize reasonably, so that new phenomena subsumed under the definition thus obtained will be sufficiently similar to, say, the Latin case.

Let me emphasize that no Eurocentrism is implied in this methodology. What I am saying is not that the Latin concept of case should be imposed on a phenomenon of a completely different language. I am insisting only on using the name *case* strictly for such phenomena that are close enough to the Latin case. If the phenomenon considered is not sufficiently similar to what we call *case* in Latin it simply should not be called *case*.

This stand allows me to solve problems of the kind formulated by Shibatani (1985: 836, ex. (39)). According to his description, the Mayan language Mam expresses the Patient in an active transitive clause as the Surface-Syntactic Subject ("[Mam is] a syntactically ergative language"), and in a passive clause, the same Patient is the Subject again:[5]

(1) a. *Ma* *Ø- jaw* *t-tx'ee7ma-n* *Cheep* *tzee7*
REC.PAST 3SG.ABS-DIR 3SG.ERG-cut-DIR José tree
'José cut the tree' [*tzee7* 'tree' is claimed to be the Subject]

vs.

b. *Ma* *Ø-tx'eem-**at*** *tzee7* *t-u7n* *Cheep*
REC.PAST 3SG.ABS-cut-**PASS** tree 3SG-by José
'The tree was cut by José' [*tzee7* again is claimed to be the Subject].

How then can one propose a general definition of the passive as a voice that promotes the Patient to be expressed by the Subject, as it happens, for instance, in Latin, and that would cover the Mam form in question? I think I have an answer: One cannot. We have to choose.

Either we accept, with Shibatani, that TZEE7 'tree' is the Subject in both (1a) and (1b); then the verbal form in (1b) should by no means be called passive, since this form is not at all similar in its behavior to the prototypical Latin/English passive, where the Object becomes the Subject. As prototypical passives do, the Mam form in **-at** (in (1b)) also serves to 'defocus' the Agent, but does it in a way that is diametrically opposed to how the prototypical passive works. If Shibatani's description of the SSyntS of the sentences in (1) were correct, the form in **-at** would be a *detransitivative*, see Section 4, and not a passive.

Alternatively, we accept that the form ***tx'eem-at*** is a passive. Then we have to reject the analysis under which TZEE7 'tree' is the SSynt-Subject in both sentences: in (1a), it must be a DirO.

(Personally, based on England's (1988) description of the voices in Mam, I think that the second alternative is correct: in (2a), TZEE7 'tree' is the DirO, because, as far as I can judge from the data available to me, the Mam Subject must linearly precede all other dependents of the verb.)

2.2. Formal aspect of the definitions

From the stand of their *formal aspect*, I try to formulate the definitions in such a way as to satisfy the following four general conditions (cf. Apresjan 1982: 175):

A definition should be:
(a) FORMAL: it should be applicable automatically, i.e., literally.

(b) RIGOROUS: it should contain only concepts which either have been defined prior to it or else are undefinable and listed as such; more precisely, it should be a definition of axiomatic type: *per genus proximum et diferentia specifica*, i.e., literally, 'by the nearest kind and specific differences', as formulated by Boetius (480–524 AC, minister of the Ostrogoths' king Theodoric the Great), who was following the ideas of Aristotle).

(c) SUFFICIENT and NECESSARY: it should cover all the phenomena that are perceived as being subsumable under the corresponding concept, and nothing but such phenomena.

(d) UNIVERSAL: it should be applicable to any relevant phenomena of any language.

More specifically, the construction of a linguistic concept *C* and of the corresponding definition consists of the following six steps.

Suppose we consider a class of observable linguistic phenomena P_i, our pretheoretical set of data. We think that all P_is can be subsumed under *C*. How should we proceed?

(1) First of all, establish a 'kernel' subclass P_j of the class P_i ($P_j \subset P_i$), i.e., isolate such phenomena among all the P_is that we would like to have covered by our definition under any circumstances. These P_js correspond to the most typical particular case of *C*, that is, to a *prototypical C*, symbolized as *c*. They constitute the empirical basis of our future definition and are chosen quite intuitively; this choice must be taken as a postulate.

(2) Analyze *c* to find its CONSTITUTIVE COMPONENTS.

(3) Develop a CALCULUS of all logically possible cases of *c*, presumably covered by *C*. To do so, combine the constitutive components of *c* in all possible ways; try to explain the impossibility of the combinations that are banned by the language.

(4) Formulate the definition of *C* by GENERALIZATION of the concept *c*; extract all underlying concepts vital for this definition and make sure that these can be defined in their turn.

(5) REVIEW THE WHOLE FIELD by applying the definition of *C* to the phenomena in the difference '$P_i - P_j$,' i.e., to less clear-cut, fuzzy or dubious items, in order to see whether all relevant phenomena have been covered.

(6) DISCARD similar but essentially different phenomena *C'*, delimiting them with respect to *C*; sketch a definition for *C'*, to make sure that this can be done in a reasonable way.

Now the definition of *C* is ready. We have to make sure that it:

(i) covers *all* items which are intuitively sufficiently similar to P_js (cf. Kuipers (1975) on the importance of intuitively felt similarity for linguistics);
(ii) rejects all items which are intuitively sufficiently dissimilar to P_js;
(iii) produces results for all intermediate domains where our intuition balks – results that can be supported by further arguments.

When we are finished with the concept, the problem of the choice of an appropriate term should be dealt with: could we use one of the existing terms associating it with the concept we have just defined or had we better coin a new term? As mentioned above, this is a difficult question that must be answered with delicacy and caution. What we do depends on the particularities of the term under analysis. Sometimes it is better to keep the term *t* as it is, i.e., apply it to the old concept and invent a new term for the new concept; sometimes, on the contrary, it pays off to use *t* for the new concept and to name the old one by *t* plus a modifier. Unfortunately, I do not know of any formal criteria to guide our choice.

3. An illustration: The concept of grammatical voice

I will illustrate my point with one example: a definition of grammatical voice as an inflectional category and a deductive calculus of possible grammatical voices – grammemes of this category. The whole discussion is carried out within the framework of the Meaning-Text linguistic theory, from which I have to borrow the general approach and some crucial concepts (Mel'čuk 1974, 1981, 1988, 1997a, 2001: 4–10, Mel'čuk and Pertsov 1987). However, I try my best to make this presentation as theory-independent as possible.

3.1. Introductory remarks

The concept of voice is developed following the six steps sketched above.

(1) As the prototypical cases on which the definition of voice is to be based I take the opposition 'active ~ passive' in Latin and English – well-studied and relatively clear representatives of what I would like to call *voices*.

(2) The main defining feature of the Latin or English passive is that it modifies the correspondence between the semantic roles foreseen by the meaning of the verb and the syntactic roles of the phrases that fill in these roles. Thus, the verb [*to*] EAT introduces two semantic roles: the living being who absorbs the food (= Eater), and the substance being swallowed (= Food). In the active, the Eater phrase is the Subject and the Food phrase a DirO (*Nick ate the steak*), in the passive, the Food is expressed by the Subject, while the Eater phrase becomes an Agentive Complement [= AgCo] (*The steak was eaten by Nick*). It is this *chassée croisée* of semantic/syntactic roles that is taken to be the very foundation of the concept of voice.

To proceed, I have to formalize first the pretheoretical notion 'correspondence between semantic and syntactic roles;' to do this, I introduce the concepts of *Semantic/Deep-Syntactic Actants* and then that of *diathesis*, see 3.2. These are the constitutive components of the concept of voice.

(3) A complete calculus of all possible modifications of the basic diathesis of a verb is developed; a formally marked modification of the diathesis is called a voice.

(4) The definition of voice as an inflectional category of the verb is then formulated.

(5) The relevant data known to me are checked in order to draw subtler distinctions between genuine voices and voice-like phenomena.

(6) Some phenomena close to voice but nevertheless different from it are analyzed and separated from voice (I give an example of such a phenomenon: detransitivative, 4). In this way, the borders of the concept of voice become sharper.

3.2. Auxiliary concepts

The concepts of Semantic Actant [= SemA], Deep-Syntactic Actant [= DSyntA] and diathesis are crucial for the definition of voice, so that I need to introduce them. On the other hand, they are fundamental for linguistic theory in general and very complex, so that I cannot introduce them in an appropriate way – this would require too much space. Therefore, I have to compromise and limit myself to a very sketchy characterization, hoping that the goodwill of the readers and the examples will prove sufficient (see, however, Mel'cuk 2004a, b).

Semantic actants

A SemA L´ of a lexical unit L is an argument of the predicate which represents L's meaning, so that if L´ semantically depends on L, this means that L denotes a predicate and L´ is one of its arguments: if L´←**sem**–L, then 'L(...; L´; ...)', and vice versa. A SemA is represented by a variable in the lexicographic definition of L; for instance:

(2) *X rents Y from Z for W for T*
'X obtains from Z, who owns Y, the right to use Y during time T for money W that X pays to Z.'

Simplifying the real picture, I can say that SemAs possess two important properties:

(a) If a SemA of L is "subtracted" from the meaning 'L', what remains cannot be called L anymore. Thus, if we subtract 'money W' from the meaning in (2), we obtain '[to] borrow' rather than '[to] rent'; by subtracting 'time T' we get '[to] buy'.

(b) A SemA of L can, generally speaking, be expressed in the sentence alongside L – as a clause element syntactically linked to L, not necessarily directly.

Deep-Syntactic actants

DSyntAs are introduced as a convenient 'interface' between SemAs and Surface-Syntactic Actants [= SSyntAs].[6] A DSyntA is a generalization for a set of such SSyntAs that can correspond to the same SemA (I mention here only verbal DSyntAs). Roughly speaking:

DSyntA **I** corresponds to what is on the surface a SSynt-Subject (and to all its 'transforms'[7]):
John←**I**–*sleeps*, *John's*←**I**–*sleep*, *John's*←**I**–*arrival*, *her*←**I**–*love*

DSyntA II corresponds to what is on the surface:

- a DirO (and all its 'transforms'): [*She*] *loves*–**II**→*John*, [*her*] *love*–**II**→*for John*
- the most important Indirect Object [= IndirO] of L—if there is no DirO (and all its 'trans–forms'): *belong*–**II**→*to John*, *John's*←**II**–*belongings*

DSyntA **III** corresponds to what is on the surface an IndirO/Oblique Object (in case there is a DirO as well):

sends–**III**→*John a letter*, [*a letter*] *sent*–**III**→*to John*,
[*He*] *punched* [*John*]–**III**→*on the nose*

DSyntAs **IV** to **VI** correspond to what are on the surface even more Oblique Objects:

rented–**IV**→*for $300*, *rented*–**V**→*for two weeks*

The following three conventions also affect the numbering system in our representations. In the Government Pattern [= GP] of a lexical unit L in a given morphological form, L's DSyntAs must be numbered as follows:

1. Consecutively (= without gaps): **I**, **II**, **III**, etc.; the GPs with such numberings as *__I__, **III** or *__I__, **II**, **IV** are disallowed.[8]
2. Beginning with **I** or **II**—or having no DSyntAs at all; the GPs with such numberings as *__III__, **IV** are disallowed.[9]
3. Without repetitions: the GPs with such numberings as *__I__, **I** or *__I__, **II**, **II** are disallowed.

Let it be emphasized that the above requirements concern the numbering itself, not the linear order in which L's DSyntAs appear in its GP or in the sentence.

Respecting these conventions may have interesting consequences. Thus, consider the sentence *Nick*←**I**–*ate*–**II**→*the steak*; its passive counterpart is *The steak*←**I**–*was.eaten*–**II**→*by Nick*. As we see, the Agentive Complement [= AgCo] is represented as the DSyntA **II**, since gaps in numbering of DSyntAs are disallowed. This formal result seems substantially quite natural: even if a DirO and an AgCo differ largely by their SSynt-properties, they are related: each one of them is the closest DSyntA of the verb after its DSyntA **I**.

Diathesis

The *diathesis* of a lexical unit is the correspondence between its SemAs and its DSyntAs. For instance, the English verb [*to*] LIKE and the French verb PLAIRE '[to] like' have the same meaning (roughly, "X has pleasant feelings whenever X is experiencing Y") and therefore the same SemAs. But they have different diatheses, as shown below.

(3a) *I* [**I**] *like him* [**II**].
(3b) *Il* [**I**] *me* [**II**] *plaît*.

[*to*] LIKE	
X	Y
I	**II**

PLAIRE	
X	Y
II	**I**

3.3. Voice and voice grammemes

The definition of voice is based on the concept of *inflectional category* and its *grammemes*. These two important concepts cannot be introduced here, so that the reader has to be satisfied with examples. Thus, an important inflectional category of the English noun is number, with grammemes 'SINGULAR' ~ 'PLURAL'; the Russian noun has two inflectional categories: number (also with the grammemes 'SINGULAR' ~ 'PLURAL') and case (with the grammemes 'NOMINATIVE' ~ 'GENITIVE' ~ 'DATIVE', etc.). An inflectional category is a set of mutually opposed grammemes, each of which has its set of markers.

Now *voice* can be readily defined:[10]

> *Voice* is an inflectional category whose grammemes specify such modifications of the diathesis of a verb that do not affect its propositional meaning.

This definition draws a line between voice and such phenomena as the following three:

(a) the *causative* (adds to the propositional meaning 'L(X)' of the verb the component 'Z causes [that L(X)]');
(b) the *applicative* (adds to the meaning 'L(X)' the component '[L(X)] involving Z');
(c) and the *decausative* (subtracts from the meaning 'L(X)', which is of the form 'X causes that P(Y)', the component 'X causes').

A modification of a given diathesis is obtainable by the following three operations: (1) permutation of DSyntAs (with respect to SemAs); (2) suppression of DSyntAs; and (3) referential identification of SemAs. Note that suppression means the impossibility of expressing the suppressed DSyntA (optional omissibility of a DSyntA in the text is not suppression); and referential identification of SemAs presupposes suppression of at least one DSyntA.

When used separately, permutation produces, roughly speaking, *passives*, suppression *suppressives*, and identification *reflexives*.[11] These operations can also be combined.

Let there be a bi-actantial verb, such as, for instance, [*to*] *dress* or [*to*] *shave*, with a basic, or lexicographic, diathesis as follows:

X	Y
I	**II**

For such a binary diathesis, there are 11 possible modifications (= derived variants) plus a zero one. Here are all logically possible binary diatheses obtained by mechanical application of the three above operations to the basic diathesis of a bi-actantial verb plus this basic diathesis itself (patterns 1-4 are formed by possible permutations of two DSyntAs; patterns 5-16, by suppressing first the expression of Y, then the expression of X, and then the expressions of both Y and X; patterns 17-20 represent referential identification of X and Y with the suppression of one or both of their expressions):

1.
X	Y
I	**II**

2.
X	Y
II	**I**

3.
X	Y
III	**II**

4.
X	Y
II	**III**

5.
X	Y
I	—

6.
X	Y
II	—

*7.
X	Y
III	—

8.
X	Y
II	—

9.
X	Y
—	**II**

10.
X	Y
—	**I**

11.
X	Y
—	**II**

*12.
X	Y
—	**III**

13.
X	Y
—	—

14.
X	Y
—	—

15.
X	Y
—	—

16.
X	Y
—	—

17.
X = Y
I

18.
X = Y
II

*19.
X = Y
III

20.
X = Y
—

The shadowed variants are 'illegitimate:' they either violate numbering conventions for DSyntAs (the asterisked ones) or else they coincide with some other variant, already on the list. (It is of course irrelevant which of the two repeats is retained; I simply take the first one.) The subtraction of illegitimate variants gives us 12 logically possible binary diatheses: the starting one (which is associated with the basic, or lexicographic, form of the verb) and 11 'derived' ones; this means 12 diathesis modifications, in-

cluding a zero modification. As a result, ideally, 12 grammemes of voice for a binary diathesis are possible and will be considered in what follows.

To refer to particular voice grammemes, I propose the following terminology. For the passive:

(a) *Full* [= bilateral], if the passive affects both DSyntAs (**I** ⇒ **II** and simultaneously **II** ⇒ **I**).
(b) *Partial* [= unilateral], if the passive affects only one DSyntA (e.g., **I** ⇒ **III**, while **II** remains in place and no DSyntA becomes **I**).
(c) *Promotional*, if the passive promotes the DSyntA **II** to **I**, automatically demoting the former DSyntA **I**. ('Promoting' means giving a DSyntA a smaller number, 'demoting' being the opposite.)
(d) *Demotional*, if the passive simply demotes the DSyntA involved, without promoting anything.
(e) *Agentless*, if the passive does not allow for the expression of the Agent, i.e., it does not admit the AgCo. (The other name, current in the literature, is *truncated*, or *short*, passive.)
(f) *Patientless*, if the passive does not allow for the expression of the Patient.

For the suppressive and the reflexive I propose the following terminology.

(g) *Subjectless*, if the suppressive/the reflexive cannot have the Subject (= DSyntA **I**).
(h) *Objectless*, if the suppressive/the reflexive cannot have the Object (= DSyntA **II**).
(i) *Absolute*, if the suppressive blocks the expression of both DSyntAs.

For instance, the *objectless reflexive* denotes a reflexive form which admits the expression of the Agent as the Subject only (Fr. *Il se rase* 'He shaves himself'), while with the *subjectless reflexive*, the Agent is expressed as a DirO or an AgCo (see below, 3.3.11, example (13)).

In the examples, the name of the voice and the corresponding marker are boldfaced. The subsection number corresponds to the numbered cell in the voice paradigm above, for example 3.3.1 will exemplify cell 1. of the paradigm.

3.3.1 'ACTIVE': zero modification of the basic diathesis.

X	Y
I	**II**

⇒

X	Y
I	II

A Latin example is:

(4) *Xenoph n-Ø* *agricultur-am* *lauda-ba-t-**Ø***.
Xenophon-SG.NOM agriculture-SG.ACC praise-IMPF-3SG-**ACT**
lit. 'Xenophon [**I,** Subj, NOM] [the] agriculture [**II**, DirO, ACC] praised [**ACT**].'

3.3.2 'FULL PROMOTIONAL PASSIVE': bilateral permutation of DSyntAs.

X	Y
I	**II**

⇒

X	Y
II	**I**

An example, again from Latin:

(5) *A Xenoph nt-e* *agricultur-a* *lauda-ba-t-**ur***.
by Xenophon-SG.ABL agriculture-SG.NOM praise-IMPF-3SG-**PASS**
lit. 'By Xenophon [**II**, AgCo] [the] agriculture [**I**, Subject, NOM] was-praised[**FULL.PR.PASS**]'.

3.3.3 'PARTIAL DEMOTIONAL PASSIVE': pure demotion of the DSyntA **I** (to **III**), with the DSyntA **II** retained in place ('[It]is-shaving Alan by-John').

X	Y
I	**II**

⇒

X	Y
III	**II**

This type can be illustrated from Ukrainian:

(6) *Mn-oju bu-l-o* *spla e-**no***
I-INSTR be-PAST-SG.NEU pay-**PART.DEM.PASS**

c-ju *sum-u*.
this-FEM.SG.NOM sum-SG.ACC

'This sum was paid by me.', lit. 'By-me [**III**, AgCo, INSTR] [it] was paid [**PART.DEM.PASS**] this sum [**II**, DirO, ACC]'.

3.3.4 'FULL DEMOTIONAL PASSIVE': pure demotion of both the DSyntAs **I** and **II** ('[There] is-shaving by-John at-Alan').

X	Y
I	**II**

⇒

X	Y
II	**III**

I have not found actual examples of this voice. It might be due simply to the insufficiency of my data – or to the unwarranted psychological complexity of double demotion. This is a good example of the situation where an uninstantiated cell in the calculus raises challenging questions.

3.3.5 'SUBJECTLESS SUPPRESSIVE': suppression of the DSyntA **I**, i.e., of what should become the Subject ('There-is-shaving Alan').

X	Y
I	**II**

⇒

X	Y
—	**II**

Estonian offers an example of this type:

(7) *Ehita-**ta**-kse* *sild-a.*
build-**SBJL.SUPPR**-PRES bridge-SG.PART

'A bridge is being built.', lit. 'Be-building [**SUBJLESS.SUPPR**] bridge [**II**, DirO, PART]'.

3.3.6 'OBJECTLESS SUPPRESSIVE': suppression of the DSyntA **II**, i.e., of what should become the DirO ('John is-shaving [somebody]').

X	Y
I	**II**

⇒

X	Y
I	**—**

Apapantilla Totonac illustrates this type, in which no object is possible:

(8) a. *ø-ø-tamāwá* *pancín.*
3SG.SUBJ-3OBJ-buy bread
'[He] buys bread.'

b. *ø-tamāwa-**nán**.*
3SG.SUBJ-buy-**OBJ.SUPP**
'[He] buys [OBJLESS.SUPPR].'

3.3.7 'ABSOLUTE SUPPRESSIVE': suppression of both DSyntAs **I** and **II** ('There-is-combing').

X	Y
I	**II**

⇒

X	Y
—	—

This type occurs in German:

(9) *Hier wird viel ge-les-en.*
here becomes much PAST.PTCP-read-PAST.PTCP
'(People) read a lot here.', lit. 'Here becomes much read.'

3.3.8 'AGENTLESS PROMOTIONAL PASSIVE': permutation of DSyntAs, with suppression of the 'new' DSyntA **II** – the one which should correspond to X ('Alan is-being-shaved').

X	Y
I	**II**

⇒

X	Y
—	**I**

This type is illustrated by the following Arabic example, in which no AgCo is possible.

(10) *Al-dʒisr-u j-**u**-bn-**a**-ʕ-u*
DEF-bridge-NOM 3SG-**PASS**-build-**PASS**-build-3SG.MASC
'The bridge is being built.'

3.3.9 'PATIENTLESS DEMOTIONAL PASSIVE' : permutation of DSyntAs, with suppression of the 'new' DSyntA **I** – the one which should correspond to Y ('[It] is-being-shaved by-John').

X	Y
I	**II**

⇒

X	Y
II	—

German illustrates this type:

(11) *Von Politiker-n **wird** hier **geg**-ess-**en.***
by politician -PL.DAT becomes here PAST.PTCP-eat-PAST.PTCP
'Politicians eat here.', lit. 'By politicians [**II**, AgCo] becomes here eaten.'

3.3.10 'OBJECTLESS REFLEXIVE': referential identification of the SemAs, with suppression of the DSyntA **II** ('John is-self-shaving').

X	Y	⇒	X = Y
I	**II**		**I**

This type can be illustrated by Russian:

(12) *Otec-ø* *pri ësyva-ø-et-**sja**.*
father-SG.NOM comb-PRES-3SG-**REFL**
'Father is combing his hair.', lit. 'Father is-combing-self.'

3.3.11 'SUBJECTLESS REFLEXIVE': referential identification of the SemAs, with suppression of the DSyntA **I** ('By-John [it] is-self-shaving').

X	Y	⇒	X = Y
I	**II**		**II**

Lithuanian can illustrate:

(13) *Jon-o* *su-**si**-šukuo-**t**-a.*
Jonas-SG.GEN comb-REFL-comb-PASS.PART-NEU.SG
'Jonas has combed his hair.', lit. 'By-Jonas [**II**, AgCo, GEN] been-self-combed [**SUBJLESS.REFL**].'

3.3.12 'ABSOLUTE REFLEXIVE': identification of the SemAs, with suppression of both the DSyntAs **I** and **II** ('There-is-self-shaving').

X	Y	⇒	X = Y
I	**II**		**—**

This type is found in Polish:

(14) *Uczesa-**no*** ***się**.*
comb-**SBJL.SUPPR** REFL
'Some people have combed their hair.', lit. 'Has-self-combed'.

This inventory of possible voice grammemes constitutes a convenient background for a study of particular voice systems. It is a general schema against which particular voices of particular languages can be checked and

in terms of which they can be characterized. Of course this inventory does not eliminate all the difficulties; on the contrary: due to the fine-grained analysis it introduces, more unresolved problems become visible. I'll mention three of the most serious ones.

Firstly, in some languages some voice grammemes can combine within one word-form – which argues for *several distinct* voice categories. Thus, in (13), the passive participle marker *-t-* combines with the reflexive marker *-si-*; together they express the subjectless reflexive. If one is to follow a strictly logical approach, then passives, suppressives and reflexives have to be distinguished as different inflectional categories, such that the term *voice* should apply to the opposition 'active ~ passive' only. But since combinations such as those in Lithuanian are not widespread, maybe it is worth trying to keep all the grammemes described in one ideal inflectional category, using it as a 'measuring stick' for specific descriptions? Thus, in French or Russian, it does not make sense to distinguish 'ACTIVE' ~ 'PASSIVE' and 'NON-REFLEXIVE' ~ 'REFLEXIVE' oppositions as two different inflectional categories, since the passive and the reflexive cannot be combined in one wordform. However, in German the passive and the reflexive do combine: *Es* ***wird sich*** *um eine Lösung bemüh****t***, lit. 'It is self trouble-taken for a solution' = 'Much trouble was taken in order to find a solution' or *Hier* ***wird sich*** *jeden Tag rasier****t***, lit. 'Here is self shaved every day' = 'Here, one shaves every day'. Therefore, for this language, one has to postulate the category of voice and a separate category of reflexivity.

Secondly, our requirement that voice should not affect the propositional meaning of the verb is of course too rigid. Thus, clear-cut cases of passives that imply 'human activity', 'absence of control', or else 'adverse effects' are well-known. We need a more flexible formulation that bans *major* changes of propositional meaning, supplied with a definition of what constitutes a major change – as opposed to a minor change (admissible for voice).

Thirdly, the above calculus has been developed for binary diatheses only, while voice in principle can apply, on the one hand, to monovalent verbs (i.e., to intransitives: the demotion **I** ⇒ **II** and the suppression **I** ⇒ **–**) and on the other, to plurivalent verbs with ternary and even more complex diatheses (thus, in 5.2 we find a French voice – the indirect reflexive – that is possible for a ternary diathesis only). Therefore, a richer version of the calculus is needed.

In order to show how the proposed concepts help the researcher solve some practical problems in morphological description, I will now present

two case studies. First, I consider a phenomenon that is similar to voice and is often treated as such, while according to my definition of voice it is not (I mean the so-called 'antipassive'). Second, I sketch the system of voices in French.

4. A voice-like inflectional category: Detransitivation (a.k.a. 'antipassive')

Let me start with an example, borrowed from the Chukotka-Kamtchatkan language Chukchee (Kozinsky *et al*. (1988); parentheses indicate optional clause elements):

(15) a. *Гəm-nan* *tə-ret-ərkən-ø*
I-INSTR 1SG.SUB-transport-PRES-3SG.OBJ

kimitʔ-ən (*tomγ-etə*).
load-SG.NOM friend-SG/PL.DAT

'I [= **I**] transport a-load [= **II**] (to-friend(s) [= **III**])': I actually do this.

b. *Гəm-ø* *t-**ine**-ret-ərkən*
I-NOM 1SG.SUB-'antipassive'-transport-PRES

(*kimitʔ-e*) (*tomγ-etə*).
load-SG.INSTR friend-SG/PL.DAT

'I [= **I**] transport (a-load [= **II**]) (to-friend(s) [= **III**])': I am a transporter (this is my occupation).

(15a) shows an ergative construction, obligatory in Chukchee for an active transitive verb: the Subject 'I' is in the instrumental, and the DirO 'load', in the nominative. (NB: In current descriptions of Chukchee, my nominative is often called absolutive, and my instrumental, ergative.) (15b) manifests a nominative construction, which is possible only for intransitive verbs: the Subject, which remains 'I', is in the nominative; the DirO '[a] load' of (15a) has become an Obl(ique)O in the instrumental, thus losing its salience; the two objects here are optional. The change in the valence of the verb is marked by the prefix *ina-/ine-*, which is currently called 'antipassive' (the notion and the term go back to Silverstein (1972)). This name is

due to the belief that the modification marked by *ina-/ine-* is the inverse of the passive: while the passive demotes the Subject, the 'antipassive' demotes the DirO; at the same time, both the passive and the 'antipassive' turn a transitive verb into intransitive. As a result, the 'antipassive' is taken to be a voice. However, if the data in (15b) are checked against our definition of voice, one sees that the 'antipassive' is not a voice at all: it does not change the diathesis of the verb. In (15b), the DSyntA **I** still corresponds to X – the semantic Actor, and the DSyntA **II** to Y – the Object Moved, as in (15a). What the 'antipassive' does is change 1) the surface-syntactic realization of the DSyntA **II** (instead of a very prominent DirO, it is implemented by a non-prominent OblO) and 2) the morphological form of the Subject (instead of the instrumental, it is marked by the nominative). As a result, we have to accept that the 'antipassive' is a grammeme of an inflectional category other than voice. It could be called, e.g., DETRANSITIVATION, with two grammemes: {'TRANSITIVATIVE', 'DETRANSITIVATIVE'}. The 'antipassive' is then a detransitivative (cf. a presumed case of detransitivative in Mam, 2.1, (1b)). The term *antipassive* is better abandoned, since it entails unnecessary confusion, for the following three reasons.

Firstly, the 'antipassive' is not the functional inverse of the passive: even for those who defend the term, the passive necessarily demotes the Subject, and the 'antipassive' also demotes – the DirO; both the passive and the 'antipassive' being demoters, the term *ANTIpassive* seems unwarranted.

Secondly, the terms *passive* and *antipassive* do not have the same extension: the passive can also apply to intransitive verbs, while for the 'antipassive' this is impossible by definition (the 'antipassive' demotes the DirO, and an intransitive verb does not have a DirO).

Thirdly, the passive applies at the DSynt-level, while the 'antipassive' applies at the Surface-Syntactic one.

For more clarity, let me quote another example of detransitivative, this time from the Daghestanian language Dargwa.

(16) a. *Neš-li* *gazet-ø* *b-učʿ-uli*
mother-SG.ERG newspaper-SG.NOM OBJ.SG.NON.HUM-read-GER

sa-ri
be-SUB.SG.FEM
'Mother is reading [a] newspaper.'

b. *Neš-ø* (*gazet-li*) *r-učʿ-uli*
mother-SG.NOM newspaper-SG.ERG SUB.SG.FEM-read-GER

sa-ri
be-SUB.SG.FEM
'Mother is reading (a newspaper).'

Here the verb is transitive, the Subject 'mother' is in the ergative and the DirO 'newspaper', in the nominative. The verb agrees – in nominal class – with both the Subject (via its auxiliary part, i.e. the suffix *-r(i)* on the copula) and the DirO (via its lexical part, i.e. the prefix *b-* on the gerund); the DirO cannot be omitted. This is a typical ergative construction, the only one available in Dargwa for a transitive verb with a DirO.

In (16b), the verb is intransitive, the Subject (again, 'mother') is in the nominative, while 'newspaper', which became an OblO (but still is a DSyntA **II**), is in the ergative. The verb agrees only with the Subject, now via both its parts (the suffix *-r(i)* on the copula and the prefix *r-* on the gerund); the OblO is optional. This is a nominative construction; verbs that appear in it are intransitive. (The sentence **Nešli ručʿuli sari* 'Mother is reading' is ungrammatical. The sentence *Nešli bučʿuli sari* means 'Mother is reading **it**': its syntactic structure contains an object pronoun, which, although it is (quasi-)obligatorily elided on the surface – in any context where the referent is obvious, is reflected by the objectal prefix *b-* on the lexical part of the verb.)

(16b) presents another case of detransitivative: the Government Pattern of the verb changes, but not its diathesis, so that the grammeme in question cannot be a voice. This detransitivative, very typical of Daghestanian languages, is expressed by a morphological conversion (= a change in the verb's syntactics: the feature "trans" is replaced by "intrans").

5. Voice in French

5.1. Pronominal verbs in French

To establish the set of voices in French you have first to examine French 'pronominal' verbs, that is, verbs accompanied by what is known as a form of the reflexive pronoun SE ≈ 'oneself'. It is necessary in order to show that a 'pronominal' verb is, in point of fact, a voice form rather than a verb with a pronominal Object. Compare two French sentences in (17):

(17) a. *Je* ***me*** *rase.*
'I shave (myself).' lit. 'I shave me'.

b. *Jean* ***me*** *rase*
'John shaves me.'

In (17a) and (17b) we see two different wordforms *me*, which are both pronominal clitics of the 1st person singular, but belong to two different lexemes:

In (17a), *me* is a lex of the lexeme SE, which (although it is commonly called reflexive pronoun) is not a pronoun in the strict sense of the term, see immediately below;

In (17b), *me* is a lex of the lexeme MOI 'I' – a real personal pronoun. In (17b), *me* is a DirO of the verb; in (17a) this is not the case. Here, *me* is but a marker of an inflectional form of RASER '[to] shave' – namely, the reflexive voice; it is not a real pronoun, but an 'auxiliary' word. (This fact was established in Grimshaw 1982: 107.)

Distinguishing the two wordforms *me* boils down to distinguishing 'real' pronouns MOI, TOI, LUI, ..., on the one hand, and the lexeme SE, on the other. This view can be buttressed by the following seven differences in the behavior of the pronoun wordforms and the SE wordforms:

1. The auxiliary ÊTRE. One *me*, but not the other (i.e., SE, but not the real pronouns), requires that the analytical verb form should use the auxiliary ÊTRE '[to] be' rather than AVOIR '[to] have'. In French, a transitive verb is inflected in the compound tenses with the auxiliary AVOIR, but in (17a), the auxiliary must be ÊTRE:

(18) a. *Je me* ***suis*** *‹*a› rasé.*
'I have [lit. am] shaved myself.'

b. *Jean m'****a*** *‹*est› rasé.*
'John has shaved me.'

2. Coordination. In (17b), *me* – under the tonic form *moi* – can be conjoined with a noun, but not in (17a):

(19) a. **Je nous rase,* ***moi*** *et mon frère.*
'I shave myself and my brother.'
[the correct expression is: *Je me rase, et je rase mon frère*].

b. *Jean nous rase,* ***moi*** *et mon frère.*
'John shaves me and my brother.'

(The perfect grammaticality of the English gloss in (19a) shows that in English MYSELF is a normal element of the clause – a DirO coreferential with the subject; there is no question of a particular inflectional form of the verb.)

3. Focalization. In (17a), *me* cannot be focalized, either by a cleft or by *ne ... que* 'only', while *me* in (17b) can, cf. (20):

(20) a.**C'est moi que je rase. /*Ce n'est que moi que je rase.*
'It is me who I shave.' / 'I shave only me.'

b. *C'est **moi** que Jean rase.* / *Jean ne rase que **moi**.*
'It is me who John shaves.' / 'John shaves only me.'

The incapacity of *me* in (17a) to undergo focalization naturally follows from the fact that it is not an element of the clause and does not have an independent referent: there is, so to speak, nothing to focalize.

4. Causative Construction. In French, if a transitive verb V appears in a causative construction with FAIRE '[to] make', its DirO remains the DirO of the causative construction, while the Subject of V becomes an IndirO or an OblO of the causative construction. That is what we see for sentences of (17b) type, but not for those of (17a) type:

(21) a. *Marie **le** fait se raser.*
[*le* = the Subject of *Il se rase* 'He shaves']
'Mary makes him shave himself.'
or

b. *Marie fait se raser **Jean**.*
'Mary makes John shave himself.'
‹**Marie **se** fait raser Jean.*›
vs.

c. *Marie **le** fait raser à/par Jean.*
[*le* = the DirO of *Jean le rase* 'John shaves him']
'Mary makes John shave him.'
or

d. *Marie fait raser **Alain** à/par Jean.*
'Mary makes Jean shave Alan'
‹**Marie fait **le** raser par Jean.*›

SE RASER behaves as an intransitive verb, its Subject becoming the DirO of the FAIRE-construction. At the same time, the lexes of SE must be posi-

tioned between FAIRE and the infinitive of the lexical verb – as in (21a), while genuine pronominal clitics can only precede FAIRE, as in (21b). This is yet another indication that in (17a), *me* ∈ SE is not a DirO of the transitive verb, but a voice marker. (Cf. Grimshaw 1982: 120.)

5. 'X does so too' Construction. In French, *me* in (17b) can be targeted separately by the French equivalent of the 'X does so too' expression, but not *me* in (17a):

(22) a. *Je* ***me*** *rase tous les matins, et Alain aussi ‹tout comme Alain›.*
'I shave myself every morning, and Alan does so too ‹like Alan›.'
(this means that Alan shaves HIMSELF, not me.)

b. *Marie* ***me*** *rase tous les matins, et Alain aussi ‹tout comme Alain›.*
'Mary shaves me every morning, and Alan does so too ‹like Alan›.'
(this means that together with Mary, Alan shaves ME).

6. Impersonalization. In French, a verb with a DirO cannot appear in the impersonal construction, available to a large class of intransitive verbs, including the passives; but a verb with a lex of SE impersonalizes easily, which shows again that SE is not a DirO (see Grimshaw 1982: 113):

(23) a. *Des milliers de pélerins se baignent dans le Gange.*
'Thousands of pilgrims bathe in the Ganges.'

b. *Il se baigne dans le Gange des milliers de pélerins.*
'There bathe in the Ganges thousands of pilgrims.'
(lit. 'It bathes itself in the Ganges thousands of pilgrims.')

c. *Les mères baignent leurs enfants.*
'Mothers bathe their children.'

d. **Il baigne les mères leurs enfants.*
(lit. 'It bathes mothers their children.')

7. Subject Inversion in a Completive Clause. In French (Wehrli 1986: 273), an intransitive verb without Objects or Complements admits linear inversion of the Subject in a subordinate clause (24a,c), while a verb with an Object, even a clitic one, does not (24b,d).

(24) a. *Je me demande comment s'est rasé Paul.*
'I wonder how Paul has shaved himself.'
b. ??*Je me demande comment les a rasés Paul.*
'I wonder how Paul has shaved them.'

c. *J'ignore où se rencontreront nos amis.*
'I do not know where our friends will meet.'
d. ??*J'ignore où les rencontreront nos amis.*
'I do not know where our friends will meet them.'

The seven above properties of personal pronoun lexes and of SE lexes show that the SE lexes are by no means separate elements of the clause, i.e., pronominal objects; rather, they are analytical markers functionally similar to affixes. Since the semantic and syntactic relations between RASER et SE RASER are 100% regular (they are the same as in HABILLER ~ S'HABILLER, LAVER ~ SE LAVER, PEIGNER ~ SE PEIGNER, PROTÉGER ~ SE PROTÉGER, etc.), these two verbs cannot be considered as two different lexical units: they are different inflectional forms of the same lexical unit RASER. We can say that all French 'pronominal' verbal forms are voice forms, although it remains to be seen of what voice(s).[12]

Crucially, SE is impossible with adjectives (cf. Gaatone 1975: 205–206):

(25) **Jean **s**'est fidèle ‹antipathique, reconnaissant›.*
'Jean is faithful ‹disagreeable, grateful› to himself.'
[the correct expression: *Jean est fidèle ‹antipathique, reconnaissant› à lui-même*].

This follows immediately from SE being a voice marker: the adjective does not have the category of voice and thus cannot accept a voice marker.

5.2. French voices

Based on the calculus of voices presented in 3.3, I can state that all in all, the French verb has SIX grammatical voices (for rich data and references on French voices, see Gaatone (1998)). More precisely, the inflectional category of voice in French includes the following six grammemes:

(1) active
[item 1 in the list of voice grammemes, 3.3] : *Jean a rasé Alain.* 'J. has shaved A.';

(2) full promotional passive
[item 2 in the list of voice grammemes]: *Alain a été rasé par Jean.* 'A. has been shaved by J.';

(3) partial (= agentless) promotional passive
[item 8 in the list of voice grammemes]: *Une barbe de deux jours se rase sans difficulté*, lit. 'A two-day beard shaves itself without difficulty';

(4) partial demotional passive
[item 3 in the list of voice grammemes]: *Il a été procédé par le gouvernement au licenciement des fonctionnaires*, lit. 'It has been proceeded by the government to firing officials';

(5) direct reflexive
[item 10 in the list of voice grammemes]: *Je me rase* 'I shave (myself)' (see (17a)), *Alain s'est rasé* 'A. has shaved himself';

(6) indirect reflexive
[not in the list of voice grammemes, since it exists only for three-actantial transitive verbs]: *Alain s'est rasé la barbe* 'A. shaved his beard', lit. 'A. has shaved the beard to-himself'.

No French verb distinguishes all the six voices: thus, a transitive verb cannot have the partial demotional passive, while an intransitive verb cannot have the full promotional passive. This is allowed by the definition of inflectional category (Mel'čuk 1993–2000, vol. 1: 263; 2006: 22): it foresees the existence, on the one hand, of defective paradigms and, on the other, of partial grammemes (*idem*, p. 269), which are applicable only to some lexemes of a given lexemic class. Cf. partial cases – the partitive and the locative – in Russian: only some nouns have one of them, and only a handful of nouns have both of them (ČAJ 'tea', MEL 'chalk').

This description of the French voice system is a practical application of the general calculus of voice grammemes, presented in 3.3. No matter how strange it may sound, no descriptive grammar or manual of Modern French gives an answer to the simple question: 'How many voices does French have and what are these?'; you don't find an answer even in the fundamental study by Gaatone (1998). Now this answer is supplied, each French voice is logically fully characterized, and the soil is cleared for the detailed description of their usage. In turn, the exhaustive theoretical calculus of voices becomes possible with our definition of voice, which is constructed on the basis of principles formulated in 2. Thus, our study comes full circle: I start by introducing some postulates that the definitions of important morphological concepts should respect; in accordance with these postulates, the definition of voice is introduced; a calculus of possible voices is developed;

and then it is applied to French – in order to demonstrate its viability and, at the same time, to solve a descriptive problem faced by specialists of French.

Notes

1. *Bourbaki, Nicolas*: pseudonym under which a team of French mathematicians wrote a series of treatises on different branches of mathematics. Bourbaki members had all been associated with the École Normale Supérieure in Paris at some point in their careers; among them most prominent were Henri Cartan, Claude Chevalley, Jean Dieudonné, and André Weil. The principal aim of the Bourbaki treatises is to provide a UNIFIED foundation for the whole body of modern mathematics. The method of exposition is axiomatic: abstract, logically coherent and rigorous; normally it proceeds from the general to the particular, i.e., it is essentially deductive. Bourbaki's series of treatises began with *Éléments de Mathématiques* in 1939; other books on algebra, set theory, topology, etc. have followed. Many books in the series have become standard references.
2. I prefer *radical* to *root* for the following two reasons: 1) *Root* is often understood in the etymological (= diachronic) sense (thus, the root of the English noun **restaurant** is **stā*, while its radical is *restaurant-*). 2) It is counterintuitive to apply the term *root* to a quasi-elementary sign, such as **institution**, while the term *radical* applies here quite naturally.
3. This imaginary situation is very close to what was normal in American structural linguistics of the 1940's and 1950's, with the only difference being that the term used in this way (for instance, in Nida (1961: 62, 71, 75) was *morpheme* rather than *morph*.
4. Note that in many Australian languages the Intransitive Subject and the Direct Object have different case-marking (at least for some types of nominals); without the proposed definition, the corresponding predicative construction will not be accepted as ergative – which contradicts the intuition of Australian language specialists. (Thanks to N. Evans for this remark.)
5. The examples from 'exotic' languages, which do not have a commonly known spelling system (as Mam or Chukchee), are given in phonological transcription.
6. SSyntAs are taken here for granted. They are defined by sets of observable syntactic properties: omissibility, multiple presence, pronominalizability, relativizability, word order, agreement, control (of reflexives, gerunds and some particles), gapping, etc.; cf. Keenan 1976, Iordanskaja and Mel'čuk 2000. Let it be emphasized that in the examples I accept the most traditional and com-

monly suggested description of the SSyntAs; it is of course impossible to justify each decision here.

7. I mean here SSynt-phrases that semantically correspond to a Subject-predicate phrase: 'John's arrival' = 'John arrives'.
8. Dummy syntactic elements do not interfere with this principle: like all grammatical words, they do not appear on the DSynt-level and therefore are not counted. Thus, consider the Spanish idiom *diñárse**la** a* N, lit. '[to] give-itself-**it** to N' = '[to] swindle N', while DIÑAR = '[to] give' [coll.]. In the SSyntS, LA (= 3SG feminine pronoun in the accusative) is the DirO of DIÑAR, but this is only a dummy DirO: it does not appear at all in the DSyntS, where the DSyntA **II** of DIÑÁRSELA is the phrase '*a* N': DIÑÁRSELA **II**→*a* N.—In the actual DSynt-structure of a sentence, actantial 'gaps' are of course possible, because of the optional non-expression of some DSyntAs: *John* [= **I**] *rented his apartment* [= **II**] *for a year* [= **V**].
9. **Main Verbs without the DSyntA-slot I**

   This requirement is due to the fact that in several cases a verb has no DSyntA **I** (but has DSyntA **II**). I will quote four such cases.

   1. Some semantically monoactantial verbs such that their only DSyntA is realized on the surface as a DirO and thus must be treated as the DSyntA **II** (in most cases, it denotes the Experiencer): Rus. TOŠNIT´, lit. '[to] nauseate N'; Lat. PUDERE, lit. '[to] shame N'; Germ. FRIEREN, lit. '[to] freeze N'; or Fr. FALLOIR, lit. '[to] need V_{inf}/N'. Cf.:

   TOŠNIT´$_{(V)ind,\ pres}$ o-**II**→ o L(Y) [*Menja*$_{ACC}$ *tošnit* 'I have nausea']

   PUDERE$_{(V)ind,\ pres}$ o-**II**→o L(Y) [*Pudet me*$_{ACC}$ 'I am ashamed', *taedet me*$_{ACC}$ 'I am disgusted', *piget me*$_{ACC}$ 'I am bored', *poenitet me*$_{ACC}$ N_{gen} 'I repent N']

   FRIEREN$_{(V)ind,\ pres}$o-**II**→o L(Y) [*Es friert mich*$_{ACC}$, lit. 'It freezes me' = 'I am cold']

   FALLOIR$_{(V)ind,\ pres}$o-**II**→o L(Y) [*Il faut des livres*, lit. 'It needs some books']

   This situation, which is rather exotic in Indo-European, is very typical of numerous languages that regularly have transitive static verbs that denote physiological or psychological states and govern the name of the Experiencer as a DirO.

   2. Idioms that contain their own Surface-Syntactic subject, for instance:

   The cat's got Y's tongue ⇔ THE CAT HAS GOT TONGUE o **II**→o L(Y)

   Fr. *La moutarde monte au nez à Y* ⇔

   LA MOUTARDE MONTE AU NEZ o **II**→o L(Y)

   lit. 'The mustard goes-up to-Y to the nose' = 'Y flares up'.

   Fr. *Le torchon brûle entre Y et Z* ⇔

   LE TORCHON BRULE o **II**→o L(Y) **COORD**→o ET **II**→o L(Z)

   lit. 'The rag is burning between Y and Z' = 'There is a running battle going on between Y and Z'.

At the DSynt-level, such an idiom is represented by one node, and no branch numbered **I** leaves it.

3. Interjections of the type *Down with Y!*: DOWN [with] o-**II**→o L(Y).

4. Any verb in the form of subjectless suppressive (in a language where this voice exists, see below):

Fr. *Il se vend des Y*, with the DSyntS VENDRE $_{\text{subj-suppr,ind,pres}}$ o **II**→o L(Y).

These examples show that one can have diatheses in which the numbering of DSyntAs does not begin with **I**, but with **II**.

On the other hand, no diathesis can begin with DSyntA **III**: this follows from the fact that DSyntA **II** stands for the most important (= main, central) or only Object (not necessarily for the DirO).

10. The literature on voice is huge; I will limit myself to a few of the most recent references (about the last 15 years): Siewierska (1984), Geniu iene (1987), Shibatani (1988), Brus (1992), Gross (1993), Kemmer (1993), Mel'čuk (1993, 1997b), Fox and Hopper (1994), Givón (1994), Dixon and Aikhenvald (1997). The present definition develops the ideas put forth in Mel'čuk and Xolodovič (1970).
11. A reflexive in a particular language can express different meanings: 'genuine' reflexive (acting upon oneself), reciprocal, etc. In the present context, this fact is ignored.
12. This opinion is by no means shared by all researchers. Cf., e.g.: "the essential characteristic of this [= pronominal verbal – IM.] construction lies in the co-referentiality manifested between the subject NP and the CLITIC VERBAL COMPLEMENT" (Burston 1979: 147; emphasis added – IM.), "the pronominal construction embodies essentially one type of clitic verbal complement – AN OBJECT PRONOUN" (*idem*: 150); "in quite a few so-called intransitives the OBJECT FUNCTION OF SE is reasonably transparent [*Elle a besoin de* ***se*** *reposer*]" (*idem*: 160). In the same way, Le Goffic (1993: 309*ff*) treats all forms of SE under the heading of 'Clitic Complements.' However, in most cases, it is believed that, for instance, in SE RASER, the clitic SE is a DirO and, at the same time, that SE RASER is a form of the reflexive voice. This is a contradictory viewpoint, which is logically impossible. On the other hand, cf. Wehrli (1986 : 283), who says that 'the process of reflexivization in Romance ... appears to be closer to an affixation process,' meaning affixation that signals 'a modification of the argument structure associated with a predicate (p. 274);' or Wierzbicka (1996: 402*ff*), who demonstrates that the Polish reflexive pronoun SIĘ, syntactically similar to the French SE, is not an element of the clause, i.e., not a Noun Phrase in the role of an object.

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Abbreviations and Notations Used in the Paper

AgCo	Agentive Complement	L	Lexical Unit
DirO	Direct Object	OblO	Oblique Object
DMorphS	Deep-Morphological Structure	REC	Recent Past
DSyntA	Deep-Syntactic Actant	SemA	Semantic Actant
GP	Government Pattern	SemS	Semantic Structure
		SSyntS	Surface-Syntactic Structure

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Descriptive theories, explanatory theories, and Basic Linguistic Theory[1]

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1. Introduction

Linguists often distinguish work they characterize as descriptive from work they characterize as theoretical. Similarly, linguists often characterize certain work as atheoretical. This label is sometimes applied, not only to descriptive work on particular languages, but also occasionally to crosslinguistic typological work. I argue in this chapter that this way of talking represents a fundamental confusion about the relationship between theory and description. First, there is no such thing as atheoretical description. Second, although it is confused to talk about theory and description as contrastive notions, it does make sense to talk about a contrast between description and explanation. I further argue that there is a need for both descriptive theories and explanatory theories. Descriptive theories (or theoretical frameworks) are theories about what languages are like[2]. They are theories about what tools we need in order to provide adequate descriptions of individual languages. Explanatory theories (or theoretical frameworks), in contrast, are theories about *why* languages are the way they are.

The distinction between descriptive theories and explanatory theories is not widely recognized in linguistics, although it is not hard to identify the historical explanation for this. First, pregenerative theories, such as American structuralism, explicitly disavowed the goal of constructing an explanatory theory. As such they were examples of descriptive theories, but the underlying assumption was that that was the only type of theory needed. Generative grammar, in contrast, has aimed at being an explanatory theory. Furthermore, a central tenet of generative grammar, especially clear in the work of Chomsky since the mid-1970s (e.g.

Chomsky 1973), has been the idea that a single theory can serve simultaneously as a descriptive theory and as an explanatory theory.[3] Such a view follows from Chomsky's ideas about innateness: if one believes that languages are the way they are because of our innate linguistic knowledge, then a theory about that innate linguistic knowledge will simultaneously serve as a theory about what languages are like and as a theory about why they are that way.

Curiously, however, many linguists who reject Chomsky's views about innateness seem to implicitly accept the Chomskyan view that a single theory will serve both theoretical goals. Many functionalists, in particular, propose kinds of explanations for why languages are the way they are that are radically different from those of Chomsky, yet they often see questions of how to describe languages as the domain of formal linguists, confusing issues of descriptive theory with issues of explanatory theory. In this chapter, I examine the implications of rejecting the Chomskyan view of a single theory serving both theoretical goals, and examine the question of what sort of theory will serve as an adequate descriptive theory. I argue that what Dixon (1997) calls "basic linguistic theory" will serve as such a descriptive theory.

This paper is primarily directed at linguists who can be construed as functionalist, using the term in a broad sense that includes most work in typology and work by descriptive linguists.[4] The central issue discussed in this paper is what sort of theory we need for linguistic description, if one adopts a functionalist view of language, which for the purposes of this paper can be characterized as the view that functional or grammar-external principles play a central role in explaining why languages are the way they are.

2. The history of linguistic description

Over the past quarter century, quite independently of developments both in formal theory and in functionalist theory, there has been a growing convergence in the ways in which languages are described. When one examines grammars written in the period of around 1965 to 1975, one finds considerable variation in the assumptions that authors make in what descriptive tools to employ. Some grammars assume little beyond the concepts of traditional grammar. Other grammars assume some version of structuralism, using that term in its traditional sense to denote theoretical

models, like American Structuralism, that predate the generative era. A number of grammars assume tagmemics, a "neo-structuralist" theoretical framework associated with Kenneth Pike and much of the descriptive work by members of the Summer Institute of Linguistics. Still other grammars from this period adopt the framework of transformational-generative grammar, generally some version close to that of Chomsky (1965). And many grammars assume some combination of these theoretical approaches.

The period from 1965 to 1975 represents what is probably the period with the greatest degree of variety in assumed theoretical approaches. After around 1975, this variety declined for a number of reasons. One reason for this is that there was a sharp decline in the use of generative grammar as a means of describing entire languages. The main reason for this sharp decline was the changes in thinking in Chomskyan generative grammar, the abandonment of the sort of transformational model assumed in the previous decade, and its replacement by a model in which rules played a lesser role and in which constraints on rules took a central role. The new generative approach was not practical as a theoretical framework for describing entire languages. For one thing, most of the generative literature dealt with phenomena that from the perspective of describing entire languages are rather peripheral, and the sorts of nuts and bolts that are central in describing a language became theoretically uninteresting to Chomskyan generative theory.

A second factor in the decline in the variety of approaches to describing language during the 1970's was that structuralist approaches were becoming increasingly out-of-fashion. Although structuralism had faded from centre-stage during the early 1960's as a significant approach to theoretical questions, especially in the United States, it had remained entrenched in many places among people whose central interests were descriptive, and as a result, it continued to have a major impact on language description well into the 1970's. Its eventual decline during the 1970's represented little more than the fact that people whose primary training was structuralist were increasingly retiring and younger linguists, even those whose interests where primarily descriptive, often knew less about structuralist approaches.

A third factor in the decline in the variety of approaches was the significant increase in work in linguistic typology and the attention paid to looking at languages from a typological perspective. Because, at least from a sociological point of view, linguistic typology represented an alternative to generative grammar, its work was of interest to descriptive linguists in a

way that generative grammar was not. In addition, descriptive linguists found work in typology very useful in helping them understand the languages they are working on. The impact of this on language description was that many linguists who in previous decades might have written descriptive grammars either from the perspective of traditional grammar or from a structuralist perspective allowed their mode of description to be influenced by typological insights. In a number of respects, typological work was (and is) closer to traditional grammar than to more formal theoretical approaches. This fact, the informal nature of typology, and the direct relevance of typology to the sorts of descriptive issues faced by descriptive linguists meant that typological work had a tremendous impact on descriptive work.

The tie of typology to traditional grammar was a natural one: Greenberg's classic 1963 paper on word order universals contrasts sharply with most other work at the time in assuming a set of descriptive notions that are to a large extent simply those of traditional grammar. While the typological work of the 1970's freely supplemented traditional grammar with notions required to describe many non-European languages, such as ergativity, an example of the link to traditional grammar was the bringing back to central stage of the notions of subject and object, notions which had not played an important role either in structuralism or in generative grammar. While the picture is complicated by the fact that the re-emergence of these as important descriptive notions was also partly due to relational grammar (e.g. Perlmutter 1983, Perlmutter and Rosen 1984), an offshoot of generative grammar, it also played a central role in the accessibility hierarchy of Keenan and Comrie (1977), one of the central results of linguistic typology during the 1970's.

3. Basic linguistic theory

The factors I have discussed have contributed to a convergence over the past quarter century in the descriptive tools assumed in descriptive grammars, to the extent that it is fair to say that a single descriptive theoretical framework has emerged as the dominant theory assumed in descriptive grammars. One of the few linguists to recognize that this has happened is Bob Dixon (1997), who refers to this theoretical framework as "basic linguistic theory".[5] Basic linguistic theory differs most sharply from other contemporary theoretical frameworks in what might be described as

its conservativeness: unlike many theoretical frameworks that assume previous ideas only to a limited extent and freely assume many novel concepts, basic linguistic theory takes as much as possible from earlier traditions and only as much as necessary from new traditions. It can thus be roughly described as traditional grammar, minus its bad features (such as a tendency to describe all languages in terms of concepts motivated for European languages), plus necessary concepts absent from traditional grammar. It has supplemented traditional grammar with a variety of ideas from structuralism, generative grammar (especially pre-1975 generative grammar and relational grammar), and typology.

Basic linguistic theory differs from traditional grammar most strikingly in its attempt to describe each language in its own terms, rather than trying to force the language into a model based on European languages. Conversely, the attempt to describe each language in its own terms reflects the major contribution of structuralism to basic linguistic theory. Another example of a major contribution of structuralism to basic linguistic theory is the notion of the phoneme. Various concepts from generative grammar, such as secondary predication, have made their way into basic linguistic theory. But the primary influence of generative theory on basic linguistic theory has been indirect: generative theory influenced much work in typology in the 1970's (since most typologists had training in generative grammar) and typology itself has been a major influence on basic linguistic theory. We can see this in the treatment of passive and passive-like constructions in various languages. The interest in passive constructions derives historically from their central role in early generative grammar, which in turn led to their being a matter of considerable attention in typology, and to an extensive literature discussing whether constructions in various languages really are or really are not passive constructions. Similarly, relative clauses have played a central role in typology, especially in light of the significance to typology of Keenan and Comrie (1977). This prominence in typology partly grew out of work in generative grammar stemming from Ross (1967) on extraction constraints. But in various other respects, work in typology has influenced basic linguistic theory in ways quite independent of generative grammar. Much of this involves substantive notions that have been recognized in a number of languages and which it is now common for descriptive grammars of languages exhibiting such phenomena to recognize. Such notions as ergativity, split intransitivity, internally-headed relative clauses, and evidentiality are notions that have become central to basic linguistic theory and which are

referred to frequently in descriptive grammars. Recurrent phenomena that had not been explicitly observed before continue to come up in the literature, such as the notion of mirativity (DeLancey 1997), and thus become added to the substantive concepts of basic linguistic theory.

Most descriptive grammars written within the past ten or fifteen years can be described as employing basic linguistic theory as their theoretical framework. If one compares recent grammars to grammars written over twenty-five years ago, the commonalities among the recent grammars and the differences from earlier grammars are often quite striking. The commonalities shared by these grammars also contrast sharply with recent generative approaches. However, it is not widely recognized, even among functionalists and descriptive linguists, that these commonalities represent a distinct theoretical framework. It is far more common for authors of such grammars to describe their work as atheoretical or as theoretically eclectic.

The idea that description can be atheoretical is simply confused. The analytical assumptions and the concepts one assumes necessarily constitute a set of theoretical assumptions. If all work in the field shared the same set of assumptions, the notion of theory might be unnecessary, but it would still be the case that all such work would be assuming the same theoretical framework. And when one sees the contrast between recent descriptive work and work in early generative grammar, recent Chomskyan generative grammar, tagmemics, and American Structuralism, among others, it is clear that what distinguishes the recent descriptive work from these other approaches is a very different set of theoretical assumptions.

The idea that such descriptive work is theoretically eclectic is also inaccurate, since the high degree of commonality among recent descriptive work means that this work by and large shares the same theoretical mix. But this theoretical mix simply reflects the historical eclecticism of basic linguistic theory: basic linguistic theory is traditional grammar modified in various ways by other theoretical traditions over the years.

4. The irrelevance of functional explanation to linguistic description

One reason why descriptive work is often viewed as atheoretical is that it is not explanatory. Both formal work and functionalist work in recent decades have focused on explanation, and the notion of theory has become entwined with that of explanation, so that for many linguists, a theoretical question is understood as one which involves explanation. The nature of functionalist

explanation is such that it is external to the grammar, not only in the sense that the theoretical concepts appealed to in the explanation lie outside of grammar, but also (and perhaps more controversially) because there is no way to build these explanations into the grammar itself. Under the view of this paper, functional explanations – explanations for why languages are the way they are – apply primarily at the level of language change. Functional factors or motivations exert "force" on linguistic change, encouraging certain changes and discouraging others. Such functional factors sometimes work together and sometimes work at odds with each other, in which case we have competing motivations (Haiman 1983, 1985; Croft 1990). But this competition is resolved at the level of language change: once one motivation "wins", then that is the way the language is, and when speakers learn the language, they learn the language that is the result of functional factors without any awareness of them, either conscious or unconscious. The grammatical knowledge that underlies their linguistic behaviour is the immediate explanation for their linguistic behaviour. There may be functional explanations for many features of the grammar, but these features are established before the speaker ever learns the language and long before they use it. Grammars are in this sense an emergent phenomenon, not in the sense of Hopper (1987), according to which grammars are always emerging, not crystallizing, but in the sense that the particular way these factors resolve themselves is not reducible to these explanatory factors (or a ranking of these factors), and in the sense that the grammar takes on a life of its own, so to speak, above and beyond the functional principles that have shaped it. A grammatical description of a language is thus not deficient or inadequate if it leaves out explanations for why the language is the way it is. In fact, in so far as grammars exist independently of explanation, there is a need for description independent of explanation.

The general point here is that functional explanation exists independently of grammars and of grammatical description. This point can be illustrated by reference to a number of examples of functional explanation. I first consider three alternative functional explanations for why languages have prepositions versus postpositions, then proceed to a briefer consideration of a functional explanation for why languages have zeroes in their systems of pronominal reference. No assumption is made here about whether these explanations are correct; all that is argued here is that if they are at least partially correct as explanations, then there is no reason to believe that these explanations are part of the description of the

language, that they are part of the speaker's representation of the grammar of the language.

4.1. An example involving grammaticalization

Consider first the role of grammaticalization in explaining why languages with noun-genitive order tend to have prepositions while languages with genitive-noun order tend to have postpositions. One of the primary diachronic sources for adpositions, particularly spatial adpositions, is head nouns in genitive constructions. English has a number of complex prepositions that represent various intermediate stages in this grammaticalization process. For example, the complex prepositional expression *in front of* historically involves a noun *front* so that historically in *in front of the house*, *front* is a head noun with *the house* as a genitive modifier. However, there is good reason to believe that the expression *in front of* now functions as a single lexical item, as a prepositional expression that takes *the house* as its object. The fact that the regular syntactic rules of English would require that it be *in the front of the house*, with a definite article, and the fact that it is often pronounced without the /t/ in *front*, as something like [ɪnfrʌnə], provide reason to believe that speakers are no longer treating *front* as a head noun. Other prepositions in English which are of similar origin but which have proceeded along this grammaticalization path further in that they do not require *of*, include *inside*, *beside*, and *behind*.

Crucially, the genitive construction from which *in front of* arose was one in which the head noun precedes its genitive modifier, so that the resultant adposition is a preposition rather than a postposition. In other words, the process of grammaticalization maintains the order of the two elements so that when a head noun in a genitive construction becomes an adposition, its position in the genitive construction relative to its genitive modifier will determine the order of the resulting adposition with respect to its object, simply because the relative order of the two elements will not change. In languages in which similar grammaticalization has taken place from constructions in which the head noun follows its genitive modifier, the resultant adposition will be a postposition. For example, in Ngiti, a Central Sudanic language of the Democratic Republic of the Congo, the noun *dzi* 'back' has grammaticalized along with the morpheme meaning

'on' to form a postposition *dzidɔ* meaning 'behind', as in (1), reflecting the original genitive-noun word order.

(1) *kà dzi-dɔ*
3SG back-on
'behind him' (Kutsch Lojenga 1994)

The effect of this type of explanation is that, ignoring other diachronic sources of adpositions, a language with noun-genitive order will end up with prepositions and one with genitive-noun order will end up with postpositions. Instances of deviations from this order might arise due to other sources of adpositions or from a change in the order of genitive and noun. For example, a language with noun-genitive order and postpositions would arise if the postpositions arose at a time when the language employed genitive-noun order but if the order has changed to be noun-genitive. This thus provides an explanation both for the general crosslinguistic correlation between noun-genitive order and prepositions and for specific instances of adpositions that have arisen in this way.

Assuming that this explanation is correct at least as part of the explanation for why the order of adposition and noun and the order of noun and genitive tend to correlate, let us ask what implications this has for the description of a particular language which has prepositions and noun-genitive order. The answer should be obvious: it has no implications whatsoever. The speaker of the language must learn that the language has prepositions and must learn the noun-genitive order in the genitive construction, but there is no plausible reason why the speaker should be aware that the fact that the prepositions are prepositions rather than postpositions is because they arose from head nouns in genitive constructions. It is especially clear that this is the case if the noun from which a particular preposition arose is no longer used, at least in a sense that is clearly related semantically to the preposition, as with the English noun *spite* and the grammaticalized preposition *in spite of*. If the noun from which a preposition arose is still used in a sense that is clearly related semantically to the preposition, it is perhaps less obvious that the historical relationship between the noun and the preposition is not part of the speaker's knowledge of the language. Consider the case again of the English noun *front* and the preposition *in front of*. The noun *front* can certainly occur in constructions that resemble its use as part of the preposition *in front of*, as in *at the front of the house*. But the very fact that

grammaticalization has taken place means that speakers are not treating the occurrence of *front* in *in front of* as a noun and means that they are learning the entire construction involving *in front of* independently of the noun. Thus at most speakers will be aware of the fact that there is something in common both in form and in meaning between the noun *front* and the preposition *in front of*, but like other nonproductive derivational relationships, there is no reason to believe that their knowledge includes any sort of rule. Furthermore, even if one wanted to claim that the two were related by some sort of rule, it seems unlikely that speakers would relate the preposition *in front of* to a noun phrase headed by *front* followed by a prepositional phrase with the preposition *of*. The orthographic word *of* in English has such a wide range of fossilized uses (e.g. *out of, off of, afraid of, know of, think of, ask a question of, a lot of*) that it seems questionable whether, if not for the influence of the writing system, speakers would ever think of *in front of* as containing the same *of* that occurs in *the front of the house*. Finally, even if speakers were to relate these, there would still be no reason to believe that speakers' grammars would represent the fact that *in front of* arose historically from a genitive construction with head noun *front*. The likelihood of speakers relating complex prepositions to genitive constructions becomes even less as one considers more grammaticalized examples, like *because of* and *in spite of*. In short, a grammatical description representing the results of grammaticalization is unlikely to say that these results are the results of grammaticalization. Grammaticalization is the explanation for the synchronic facts, but it is irrelevant to their description.

In fact, the primary reason why grammaticalization is of such paramount importance to linguistic theory is precisely because it is a type of explanation that undermines the principle central to Chomskyan generative grammar that explanation ought to be built into the description. It is a type of explanation that cannot be built into the description precisely because it explains synchronic facts in terms of diachrony. Unfortunately and ironically, some advocates of grammaticalization inadvertently downplay this theoretical significance by arguing that somehow the description itself ought to incorporate the grammaticalization explanation. Why would some advocates of grammaticalization claim this, when doing so would just make grammaticalization like other types of explanation that are claimed to be part of grammars? The explanation to this, I claim, is precisely the failure of many linguists to recognize the need for two types of theory, a descriptive theory and an explanatory theory. Many linguists

who reject much of the underlying ideas of Chomskyan generative theory still cling to this one fundamental tenet of generative grammar: the idea that explanation can be built into description and hence descriptions of what languages are like can incorporate explanations for why they are that way. However, once one separates out questions of how to describe languages from questions of explanation, it becomes clear that grammaticalization explanations are perfect examples of explanatory principles that are independent of synchronic grammars.

Grammaticalization also offers an explanation for idiosyncrasies in synchronic grammar: often words or constructions exhibit idiosyncratic properties that reflect grammaticalization sources. For example, when nouns grammaticalize as adpositions, they often continue to exhibit properties that date from the time when they are nouns. The position of such adpositions, as discussed above, is one example of this. However, there are others as well. For example, the postposition *k'anik* 'under' in Lezgian, a Daghestanian language of the Caucasus region, governs the genitive case, as in (2), not because its meaning is such that the genitive case is appropriate, but rather because it derives from a head noun (meaning 'bottom') in a genitive construction, while what is now the object of that adposition was originally a genitive modifier of that noun.

(2) *Vezuvija* *vulkan-di-n* *k'anik*
Vesuvio volcano-OBL-GEN under
'under the Vesuvio volcano' (Haspelmath 1993: 219)

Similarly, in Jakaltek, a Mayan language of Guatemala, adpositions occur with the same pronominal affixes that mark possessors, as illustrated by the first person singular prefix *w-* in (3).

(3) a. *w-atut*
1SG-house
'my house' (Craig 1977: 109)

b. *w-et*
1SG-to
'to me' (Craig 1977: 110)

One might capture this in the grammar by treating these words as a subclass of nouns, but it is probable that the actual explanation is that these adpositions came from head nouns in a genitive construction.

Often, the effect of grammaticalization is to leave certain features unchanged, while other features change, so that the overall array of features is somewhat messy. As far as the grammar is concerned, these are simply messy complex arrays of facts that speakers presumably learn as such. Grammaticalization may explain the fact that the words exhibit properties intermediate between nouns and adpositions and may even in some cases explain why certain properties are retained while others are lost. But it would be a mistake to think that the speaker's representation of these aspects of their language somehow includes these explanations.

Grammaticalization not only provides a good illustration of a type of explanation that is best not built into the grammar, but also the need to distinguish explanatory theories from descriptive theories. Grammaticalization is relevant to explanatory theory, not to descriptive theory. We need a descriptive theory that will provide adequate descriptions of linguistic phenomena, including phenomena that are the result of grammaticalization, and basic linguistic theory seems adequate to that task. Grammaticalization is relevant to descriptive theory only in so far as it reminds us that an adequate description need not capture all the patterns in the data, since some of those patterns will be fossil remains whose description should be messy but which make sense only at the level of explanation.

It is perhaps worth distinguishing what is in a grammar (in the sense of what needs to be included in an adequate description of the language) from what a linguist might choose to include in a grammatical description. It is not uncommon for linguists to make allusions in a grammatical description to historical explanations for idiosyncratic phenomena in a language, and this might include explaining some idiosyncratic synchronic fact in terms of grammaticalization. The claim here is that it may be appropriate to include such historical mentions but they are in some sense parenthetical to the grammatical description per se, precisely because they are an explanation for a grammatical fact and not part of the grammar itself. The claim that historical explanations are not part of grammars does not mean that such parenthetical remarks are inappropriate in a grammatical description, though the author of a grammar ought not to confuse the description with such parenthetical historical explanations.[6]

4.2. An example involving sentence processing

The second type of functional explanation for whether a language has prepositions or postpositions that I will discuss is one in terms of sentence processing. As proposed in Dryer (1992) and in similar but much more detailed proposals by Hawkins (1994), the tendency for VO languages to have prepositions and OV languages postpositions is motivated by maximizing structures that are easy to process. In the proposals of Dryer (1992), a VO language with prepositions will be consistently right-branching while an OV language with postpositions will be consistently left-branching, while the mixed types will have a mixture of left and right-branching, which I argued more often lead to more complex structures from a processing point of view.

If this line of explanation for the distribution of prepositions and postpositions is correct, at least as one factor, then again this is a type of explanation which should not be built into the description of languages. The force of this sort of explanation is again that it influences language change, that a language with mixed word order is more likely to change in the direction of consistent word order and a language with consistent word order is likely to remain consistent. A speaker of a VO language with prepositions does not produce sentences with VO order and prepositions because such structures are easier to process; rather they produce sentences with VO order and prepositions because the rules of their grammar define VO order and prepositions for their language. Processing explanations may play a role in explaining why the speaker's grammar is the way it is, but that is not part of the speaker's mental representation of the grammar of their language.

4.3. An example involving iconicity

A third type of explanation for whether languages have prepositions or postpositions is primarily associated with proposals within the framework of Functional Grammar (Dik 1978, 1989, 1997). According to these proposals, adpositions occur between the noun phrase they combine with and the verb as a type of iconicity principle: they are indicating a relationship between a noun phrase and a verb so they tend to be placed between the noun phrase and the verb. This predicts that languages which place adpositional phrases after verbs will tend to employ prepositions

while those which place them before verbs will tend to employ postpositions.

Once again, there is no need to believe that any such iconicity principle is part of the grammar itself. Such a principle could be playing a major role in explaining why grammars are the way they are, but the most plausible locus for such a role would again be at the level of language change. But if true, this means that we need some sort of theory about what grammars are like, independent of such functional principles.

4.4. A brief comparison with a generative explanation

It is worth comparing the above three functional explanations with what is the most common explanation in generative grammar for why languages which are VO and which employ noun-genitive order have prepositions rather than postpositions: all three orders are head-initial.[7] On this view, there is a single rule or parameter setting in the grammar which links the three orders. This explanation thus contrasts with the three functional explanations discussed above in that it assumes that the explanation resides in the grammar itself. But if one accepts one or more of the functional explanations discussed above, it is not necessary to posit general cross-categorial rules that refer to the position of heads independently of the particular category. There is, in fact, no reason to believe that speakers make such abstract generalizations. Part of the motivation for such crosscategorial generalizations in the work of generative linguists is to capture the sorts of generalizations reflected in languages with consistent word order. However, the fallacy of such work is that it ignores the possibility that there exist generalizations that have good explanations but that speakers do not form such generalizations as part of their grammars. In other words, the possibility of external or functional explanations obviates the need to express such generalizations as part of grammar. The existence of functional explanations of this sort make it possible to posit grammars that do not express such generalizations, and hence grammars that are less abstract than the sorts of grammars associated with generative grammar. It is not clear, in particular, that speakers make any generalizations across phrasal categories and hence it is not clear that there is any need for notions like ‘head’, ‘complement’, ‘adjunct’, or ‘specifier’. Again, the claim of this

paper is that the sort of grammars that use basic linguistic theory as their theoretical framework express a reasonable level of generalization.

It is also worth pointing out the implications of this line of argument to the classic argument by Halle (1959) and Chomsky (1964: 88–89) against the phoneme, based on the parallels between the allophonic and morphophonemic rules in Russian that are required in an account assuming a classical level of phonemic representation. The argument was that these two rules could be collapsed into a single rule if such a level was abandoned. However, the alternative view is that the grammar of Russian does contain two separate rules, but their similarity is captured by an explanatory theory independent of the grammar.[8]

4.5. An example involving economy

A final example of a type of functional explanation that is independent of the grammar itself is provided by markedness phenomena. Consider the fact that the verbal paradigm in Lakhota has a zero for third person singular, and non-zero forms for the other combinations of person and number, as in (4).

(4)	*wa-kaštaka*	'I strike'	
	ya-kaštaka	'you (singular) strike'	
	kaštaka	'he strikes'	
	uŋ-kaštaka-pi	'we strike'	
	ya-kaštaka-pi	'you (plural) strike'	
	kaštaka-pi	'they strike'	(Buechel 1939)

This pattern in Lakhota reflects two markedness patterns: it is common for singular to be unmarked relative to plural and it is common for third person to be zero relative to first and second person. Note that the longest forms are those that are marked both for number (plural) and for person (first or second). One hypothesis for these (and other) markedness patterns is that they reflect discourse frequency: the most frequent values are usually unmarked. With respect to the markedness feature of zero expression, the use of zero for high frequency values is motivated by the fact that hearers will tend to interpret utterances with information unspecified according to what is most frequently used. Overall, a system which uses zero expression for most frequent values will be most "economical" (cf. Haiman 1983,

1985; Croft 1990) and will conform to the principle of least effort (Zipf 1935).

But again, the fact that using zeroes in third person singular will be most efficient may explain an aspect of the grammar of Lakhota but will not itself be part of the grammar. When speakers of Lakhota produce zero forms to express clauses with a third person singular subject and nonzero forms to express clauses with other subjects, they do so, not because it is more efficient to do so, but because that is what the grammar of Lakhota specifies is the form for particular person-number combinations. Again, the locus of the functional explanation is primarily at the level of language change: a language is most likely to lose an overt morpheme in a paradigm if it is associated with third person singular, since in its absence, hearers are most likely to interpret utterances in terms of the most frequent category, something they do all the time in interpreting utterances. If a language were to start to use zero expression for some other person-number combination, there would be a greater probability of utterances being misunderstood.

Note, however, that as with other functional explanations, there may be a minority of languages which do not conform to the general pattern. The present tense in English employs an overt zero form in every form other than third person singular (*I walk, you walk, he/she walks, they walk*). At the level of grammar, English is no different from Lakhota; in both cases, the grammar spells out where zero is used and where it is not used. We need an explanatory theory independent of the grammar to spell out why languages like Lakhota are much more common than languages like English, but this has no bearing on the descriptions of the two languages. And basic linguistic theory is adequate to provide the relevant sorts of descriptions.

4.6. Theories of form versus formal theories

It is worth noting that arguments similar to those I have given here are given by Newmeyer (1998, 2002c) in arguing that functional explanations are outside of grammars and hence that functional explanations do not obviate the need for grammars. He points out for example (1998: 141–142) that certain properties of relative clauses in Swahili are plausibly explained by processing factors. However, the relevant processing explanation involves processing ease at an earlier stage of the language, when it was

SOV, and that the processing explanation no longer applies now that the language is SVO.

From his arguments that functional explanations are outside of grammars, Newmeyer argues that even someone espousing functional explanations needs what he calls a "formal theory" of grammar (1998: 337). Newmeyer's choice of the expression "formal theory" is unfortunate here because it is ambiguous. His arguments only show the need for a theory of linguistic form, or what is called here a descriptive theory (or theoretical framework); to that extent, his arguments are congruent with the arguments of this paper regarding the need for descriptive theories. However, the expression "formal theory" is generally interpreted in the field, not as a theory of form, but as a theory of a particular theoretical orientation, where "formal" contrasts with "functional", or with "substantive", or with "informal". Newmeyer concludes, apparently playing unconsciously on the ambiguity of "formal theory", that functionalists need some version of generative grammar as a theory of forms, to supplement their functional explanations. However, all that his arguments demonstrate is that functionalists need a theory of linguistic form, and he ignores the fact that functionalists already have a theory of linguistic form, namely basic linguistic theory. Basic linguistic theory is an *informal* theory of form, and none of Newmeyer's arguments argue for a *formal* theory of form.

5. Stipulative analyses

In much formal theoretical work, much of the effort expended in arguing for or against particular analyses is motivated by attempts to provide what are viewed as explanatory analyses. This often involves abstract principles or abstract analyses, the details of which are not motivated for each language but are posited on general theoretical grounds. The sorts of analyses posited in basic linguistic theory are viewed by many generative linguists as inadequate because they are seen as overly stipulative or ad hoc, requiring rules or aspects of rules that are motivated only for the phenomenon in question. Under a functionalist view, the fact that an analysis may be stipulative or ad hoc does not present a problem: the analysis can be stipulative and ad hoc without implying that there are not explanatory principles or motivations that underlie them. In fact, under a functionalist perspective, a highly stipulative analysis may in fact be a

virtue, since the evidence often suggests that speakers learn complex sets of grammatical rules without any awareness, conscious or unconscious, of the underlying motivations that led to those rules being the way they are before the speaker ever started learning the language.

Another way to make the same point is to say that grammars are an emergent phenomenon and are not reducible to explanatory principles, whether they be parameter settings, rankings of universal constraints, or functional principles. They reflect underlying explanatory principles of various sorts which resolve themselves, as competing motivations, at the level of language change. But the grammar itself is a complex system with considerable idiosyncrasies of various sorts. The goal of a descriptive theory is to provide a set of tools and concepts for providing adequate descriptions of each language in all its complexity and idiosyncrasy. The reason why Chomskyan generative approaches have found basic linguistic theory inadequate is not in general that it fails to provide adequate descriptions, but that it fails to provide adequate explanations. But if the description of a language is independent of explanation, then this is not a problem for basic linguistic theory.

6. Description as explanation

In describing the contrast between description and explanation here, I am following common parlance among functionalists in restricting the term explanation to explanations for why languages are the way they are. But there is a sense in which what I am calling descriptions are themselves explanatory at a different level. Namely, if the grammar is a representation of what is inside speakers' heads and hence what underlies linguistic behaviour, then the grammar itself can be viewed as part of the explanation for linguistic behaviour, and the grammar serves as an explanation for particular facts of the language. The reason that speakers of English do not say things like **My house is a house blue* rather than things like *My house is a blue house* is because the grammar of English states that attributive adjectives precede the noun, and there is a sense in which the grammar of English explains this fact about language use. A similar point is made by Greenberg (1968: 180):

> In descriptive linguistics, even grammatical rules of the conventional sort are explanatory of particular phenomena ... . If, for example, a student who

> is just learning Turkish is told that the plural of *diş* (tooth) is *dişler* while that of *kuş* (bird) is *kuşlar*, he may ask why the first word forms its plural by adding *-ler* while the second does so by adding *-lar*. He may then be told that any word whose final vowel is *-i* takes *-ler*, while one in which the final vowel is *-u* takes *-lar*. This may be considered an explanation, insofar as further interrogation has to do with classes of words that have *-i* and *-u* as their final vowel rather than with the individual forms *diş* and *kuş*.

What I am describing in terms of description and explanation can thus be equally well described in terms of a distinction between explanations for linguistic behaviour or specific facts about a language and explanations for why languages are the way they are. My claim that we need both descriptive theories and explanatory theories can thus be equally well described in terms of a need for two different types of explanatory theories.

Part of the reason why functionalists tend to avoid applying the term explanation to grammatical descriptions is that they associate such talk with the sorts of analyses that formal linguists propose in which an analysis is described as explanatory, not only in the sense in which a grammar explains particular linguistic facts, but in the further sense in which the analysis is intended to be part of an explanatory theory of why languages are the way they are. Because Chomskyan generative linguists typically attempt both types of explanation in their analyses, they do not always distinguish the two types of explanation. However, once one distinguishes these two sorts of explanation, then there should be no problem with functionalists recognizing descriptions as explanations in the lower-level sense of explanations for particular linguistic facts.

7. Is basic linguistic theory a good descriptive theory?

In arguing here that basic linguistic theory is a theory, it does not follow that it must be a good theory. One might accept the notion of a descriptive theory, but claim that basic linguistic theory is inadequate as a descriptive theory. Unfortunately, the question of the adequacy of basic linguistic theory as a descriptive theory is rarely addressed. It is implicit in much Chomskyan generative work that basic linguistic theory is inadequate, but as discussed above, the implicit argument is that it is inadequate as an explanatory theory, which I have argued is irrelevant to the question of its adequacy as a descriptive theory. Another argument implicit in early

generative grammar and in formal approaches like Head-Driven Phrase Structure Grammar (Pollard and Sag 1994) is that basic linguistic theory is inadequate in that it is too imprecise and too vague. There is little question that basic linguistic theory is an informal theory, and it is clear that some linguists demand a higher level of precision than one often finds in basic linguistic theory. It is worth emphasizing, however, that precision should not be confused with the use of formalism: a description in English can be quite precise if the meaning of the terms is clear, and it is easy to find much work that assumes basic linguistic theory that is fairly precise. Conversely, the use of formalism does not guarantee precision if the formalism is not precisely defined.[9]

A more important question for the purposes of this paper is whether basic linguistic theory is adequate as a descriptive theory for the purposes of functionalists. It is certainly possible that some functionalists view descriptions in basic linguistic theory as adequate as descriptions of the language, but inadequate as representations of what speakers of a language know, a distinction I have ignored here. Some functionalists have developed functionally-oriented theoretical frameworks (e.g. Functional Grammar (Dik 1978, 1989, 1997) and Role and Reference Grammar (Van Valin 1993, Van Valin and LaPolla 1997)), but they do not directly address the question of how their theoretical frameworks might be better than basic linguistic theory: in arguing for their theories, they contrast themselves with formal generative approaches rather than with basic linguistic theory. It is not clear what arguments might be given by practitioners of such theories against basic linguistic theory.

Furthermore, as with other theoretical approaches, basic linguistic theory is an overall theoretical framework encompassing different points of view, and criticisms of specific practices within basic linguistic theory can often be construed as theory-internal disagreements as easily as criticisms of basic linguistic theory itself. My view (Dryer 1997) that grammatical relations (and other grammatical notions) are ultimately language-particular and that crosslinguistic notions are no more than convenient fictions is clearly a minority view within basic linguistic theory. But I do not view this position as a criticism of basic linguistic theory, but rather as an issue within basic linguistic theory. There are various other respects in which I believe much descriptive work paints a distorted view of language. For example, grammatical descriptions tend to concentrate on regularities and to play down lexical idiosyncracies and lexicalized grammatical constructions. I believe that word classes in particular languages are often

not as well-motivated as descriptions sometimes suggest, and that word class systems are often highly complex. But again, I view these not as criticisms of basic linguistic theory, but simply as criticisms within basic linguistic theory of applications of the theory.[10]

The improvements in basic linguistic theory over the past twenty-five years have not been prompted by specific attempts to improve it, since most linguists have failed to recognize its status as a theoretical framework. Developments have been the side effect of work in typology, and there is every reason to believe that further developments will continue in coming decades, both because of work in typology and quite possibly from new ideas from some other quarter. However, further improvements might develop if more functional, typological, or descriptive linguists recognized the status of basic linguistic theory as a theory, and addressed the question: how could we make the descriptive grammars we are writing even better than they are now?

8. Conclusion

I have argued here that the emergence of basic linguistic theory as the dominant theoretical framework for describing languages is something that has happened despite the widespread failure of linguists to recognize its status as a theoretical framework. There are many ways, however, in which the field has suffered from this failure to recognize basic linguistic theory as a theoretical framework and to recognize the need for both descriptive theories and explanatory theories. As noted in the introduction to this paper, many functionalists seem to think that the question of what constitutes a good description of a language is theoretically unimportant and some even seem to question that there is anything to describe. Givón (2001: xv), in an apparent retreat from his position in some of his earlier work, emphasizes the need to recognize linguistic structure independent of function; if there are functional explanations for why languages are the way they are, we need to have some way of describing the things that are being explained. But elsewhere in the same work (p. 4), he describes the structuralist approach to language as "functionalism's antithesis". But here he confuses descriptive theory with explanatory theory. Structuralism is fully compatible with functionalism. Structuralism is a descriptive theory, while functionalism is an explanatory theory. There is no incompatibility in

describing a language from a structuralist perspective and then explaining, in functionalist terms, the things described.

There is another negative consequence of the failure to distinguish descriptive theory from explanatory theory and to recognize basic linguistic theory as a theory. Because of the false contrast many linguists see between description and theory, and because of the higher prestige associated with what is called theory, work in basic linguistic theory is often dismissed as "merely" descriptive. Thus, if a linguist analyzes a set of data using some transient theory like Minimalism, or Optimality Theory, or Head-Driven Phrase Structure Grammar, the analysis will be characterized as "theoretical", but if a linguist analyses a set of data using basic linguistic theory, the analysis will be characterized as "descriptive". But this is simply confused. The analysis assuming basic linguistic theory is just as theoretical in the sense that it assumes a theoretical framework, just like the other analyses. And the analysis in the transient theory is also descriptive in that it provides a description of the data.

Now it is true that analyses in other theoretical frameworks often do more than describe the data, but make some additional theoretical point that the facts they are describing bear on. But this is usually because the transient theory is not only intended as a descriptive theory but as an explanatory theory as well, and the additional theoretical point being made is at least partly of significance to the explanatory goals of the theory. In addition, the theoretical point involves pointing to the need for some modification to the theory. But the analog happens with descriptions in basic linguistic theory: some theoretical significance is drawn from the facts being described. Sometimes, it points to some need to improve the tools we have for describing languages, in which it is analogous to issues arising from analyses in transient theories pointing to the need to change that theory. More commonly, however, it points to the existence of a phenomenon not previously attested. Since basic linguistic theory does not attempt to be a restrictive theory, new phenomena are often easy to describe in basic linguistic theory and do not point to a need to revise the theory, beyond the addition of new concepts. Such discoveries are of obvious theoretical significance to typological theory.

It must be admitted that it is often the case that the primary goal of work in basic linguistic theory is descriptive, without any intended theoretical significance, so that it is theoretical only in the sense that it employs a theoretical framework, namely basic linguistic theory. I would claim, however, that the same is often true for work in other theoretical

frameworks: its primary goal is often to describe a set of facts, without any particular theoretical implications. Furthermore, even if much work in basic linguistic theory is primarily descriptive in its purpose, these descriptions provide the major source of data for theoretical work in typology. In that sense, descriptive work in basic linguistic theory is always of theoretical significance.

Notes

1. I am indebted to Malcolm Ross, Edith Moravcsik, Jean-Pierre Koenig, Martin Haspelmath, Lea Brown, and two anonymous referees for comments on earlier drafts of this paper.
2. I follow here the common practice in the field of linguistics in applying the term 'theory' to what are more accurately termed theoretical frameworks. To a large extent, different theoretical frameworks are not really different theories, but simply different metalanguages for describing languages. Analyses in one theoretical framework can often be translated into another theoretical framework, and theoretical differences really only exist when one cannot translate an analysis from one framework into another. See Dryer 2006) for further discussion of this point.
3. Many of the references to generative grammar in this paper will specifically refer to Chomskyan approaches, by which I intend the sequence of generative approaches associated with Chomsky from Chomsky (1957) through Minimalism. There are considerable differences within generative grammar with respect to many of the issues discussed in this paper, especially between such Chomskyan approaches and Head-Driven Phrase Structure Grammar (Pollard and Sag 1994). In particular, HPSG can be described as primarily a descriptive theory rather than an explanatory theory. Optimality Theory shares with Chomskyan approaches the idea that a single theory will serve both as a descriptive theory and as an explanatory theory; see footnote 8 below.
4. In saying this, I run the risk of reinforcing the simplistic view that there is a clear dichotomy between functional and formal approaches to language. This is inaccurate in various respects. First, there is considerable variability among linguists who are functionalist in the broad sense I am using the term here. Second, as noted in footnote 3, there is also considerable variability among formal linguists, particularly with respect to some of the issues discussed in this paper. And there are approaches, such as Role and Reference Grammar (Van Valin 1993, Van Valin and LaPolla 1997), which involve a mixture of formal and functionalist traditions. My chararacterization of functionalist linguists as including "descriptive linguists" is also potentially misleading since there are many linguists who could be described as formal linguists and

who do descriptive work. My impression, however, is that such linguists often see a clear distinction between what they see as their descriptive work and what they see as their theoretical work. From the perspective of this paper, their descriptive work presupposes the theoretical framework of basic linguistic theory.

5. For a number of years, I employed the label "basic syntactic theory" for the theoretical approach assumed in descriptive work when describing this theoretical approach in syntax courses. I was delighted a few years ago to discover that Bob Dixon had also recognized the existence of such a theory, and I quickly realized that his label "basic linguistic theory" was more appropriate than mine, since the theoretical approach also makes relatively uniform assumptions about phonology and morphology.
6. I should also say that while I have formulated my discussion in terms that most closely fit the idea of a grammar as the description of the grammar of a single speaker, I believe that most of what I say applies equally well to the description of a language within a community (or set of communities), including a description of variation within the community. The only caveat that is necessary is that some variation within a community may reflect grammaticalization in progress and hence a description of the language, including variation, might include some mention of grammaticalization in progress. Strictly speaking, however, one might argue that it is not necessary for an adequate description of such variation to describe it as grammaticalization. A description which described the variation without describing it as grammaticalization would be an adequate description of the facts, and the observation that the variation reflected grammaticalization could be construed as an explanation for why that sort of variation is natural.
7. See Dryer (1992) for empirical problems with this line of explanation, where it is shown that if one examines the full range of pairs of elements whose order correlates with the order of verb and object, one cannot characterize those pairs in terms of the notions of head and dependent or head and complement.
8. It is also worth mentioning an approach within Optimality Theory represented by Aissen (1999, 2003) and Bresnan (2000) in which the constraints are functionally motivated and which could thus be characterized as attempting to build functional explanations directly into grammars. See also Newmeyer (2002a, 2002b) and Bresnan and Aissen (2002) for discussion. While adequate discussion of this approach is beyond the scope of this paper, a few brief comments are in order. First, strictly speaking, the grammar consists of rankings of constraints, and even if the constraints are functionally motivated, the functional motivations per se are not in the grammar. Second, the examples of explanations discussed in this paper apply at the level of language change and cannot be accurately represented in terms of innate

constraints. And third, there is no evidence that the entire grammar of any language can be reduced to a set of ordering of constraints, any more than it can be reduced to a set of parameter settings or a set of answers to a long list of typological questions (such as those in Comrie and Smith 1977). Rather, grammatical systems are complex systems of interacting rules and constructions.

9. I would say that much work in basic linguistic theory is more precise than much recent work in the Chomskyan tradition.
10. The proposals of Croft (2001) can be construed as criticisms of basic linguistic theory from a functionalist perspective, and they are sufficiently radical that they can be construed as criticisms of basic linguistic theory itself. Croft argues against the very possibility of distributionally-defined word classes. I see the phenomena he discusses as pointing only towards more complex theories of distributionally-defined word classes than are often assumed. However, further discussion of the issues he raises is beyond the scope of this paper.

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Let the language tell its story? The role of linguistic theory in writing grammars

Keren Rice

It is frequently said about languages that each language has its story to tell, and, in a grammar of a language, its story should unfold. Given this perspective, what role does changing linguistic theory play in a grammar? Is there a basic linguistic theory that provides the theoretical background for a grammar? Do changes in linguistic theory affect the way that a language is viewed, and thus what its story appears to be?

Among the linguistic lore, one sometimes hears that language description, the essence of a grammar, does not require theory. However, as most recognize, this is not a tenable position, as one must have some view about what language is both formally and functionally to even think in terms of description; see, for instance, Dixon (1997), Gil (2001), and Hyman (2001) for recent discussion. Gil (2001: 125) heads a section 'no description without theory, no theory without description,' pointing clearly to the intimacy of the relationship between these. The expression 'basic linguistic theory' is often used to describe this framework that has been built up over the years to represent the kind of theory that is generally employed in grammars; see, for instance, Dixon (1997) on this term. Assuming the existence of basic linguistic theory, the question that underlies the claim that theory is not important in language description, and thus in grammar-writing, is not whether theory is relevant to grammar writing or not, but rather how ongoing theoretical developments affect grammars. More generally, one might ask if theoretical changes affect basic linguistic theory.

When linguists raise doubts about the role that theory should play in language description and grammars, these are usually directed at one type of theory, formal linguistics. Thus in this article I focus on the kinds of positive contributions that formal theory can make to grammars. It is, of course, difficult to isolate formal theory from the other developments in linguistics (e.g., functional theory, linguistic typology) over the past several decades, and my perspective comes from being trained in formal theory and working in a formal paradigm. I thus offer one view of how theoretical

developments have influenced grammar writing. I concentrate on decisions that I made in writing the Slave grammar[1], as there is no doubt that I was influenced by formal linguistic theory in writing this grammar and I continue to be influenced by formal theory as I think about ways in which I would change the grammar if I were to revise it today, some fifteen years after its publication. My perspective is a reflective one, developed after the passage of some years and much learning about what a good grammar is. It is also a personal one; writers of grammars may (likely will!) disagree about whether developments that I attribute to formal theory actually originated there, and about directions of influence. I focus on the contributions that formal theory made, and makes, to my own work as a grammarian. I hope to show that the interplay between formal theory and grammar-writing can be a healthy one that can result in quality language description.

In what follows, I examine several ways in which I believe that grammar writing has been positively affected by developments in theoretical linguistics, focusing, as indicated above, on my own work. I begin with what is perhaps the most obvious way, and to me the most important way, in which theory influences grammar writing, the expansion of the scope of grammars in both breadth and depth of content. This enriched coverage comes about because linguistic theory forces one to ask questions that likely would not have been asked otherwise. Such questions can lead to greater depth – as we will see, linguistic theory led me to probe wh- questions in Slave in a way that I likely would not have otherwise – and to greater breadth – a grammar written today must include a wider range of topics than a grammar written fifty years ago. A major influence of theoretical developments over the years has come through the introduction of representations: phrase structure trees, autosegmental representations, and metrical trees come to mind. These allow for a visual expression of insights that can enhance the understanding of processes in language. In addition, grammars are affected by terminological changes that have taken place over time.

Before examining these contributions, I begin with a basic question: what about a language should a 'grammar' represent?

1. What should a grammar include?

In order to discuss how theory influences language description, it is critical to determine what aspects of a language a grammar should include. This is

an important topic, and one that I cannot begin to do justice to in this article.

In the largest sense, a grammar should express what Sapir (1921) refers to as the 'genius' of a language:

> For it must be obvious to any one who has thought about the question at all or who has felt something of the spirit of a foreign language that there is such a thing as a basic plan, a certain cut, to each language. This type or plan or structural "genius" of the language is something much more fundamental, much more pervasive, than any single feature of it that we can mention, nor can we gain an adequate idea of its nature by a mere recital of the sundry facts that make up the grammar of the language.

This genius of a language, a phrase used often by Sapir (1921), is what the grammarian ultimately hopes to capture. What is this genius of language? How can one encapsulate it in a grammar?

There is general agreement, I believe, that a grammar should describe a language as it is spoken. This description might be called *parole* after Saussure or language performance following Chomsky or, in more recent terms, E(xternal)-language. Thus, in fieldwork, the need for working with spoken language of a variety of genres has long been recognized; grammars that do not draw richly from such material are probably unlikely to attain the goal of describing the genius of the language. The need to capture language in its cultural setting also cannot be overlooked in writing a grammar (see Hill, this volume). These are, I believe, absolutes, and are not my focus of discussion.

While *parole*, or language behaviour, is important to a grammar, a grammarian must also consider the role of a second aspect of language. While Sapir's *langue* and Chomsky's language competence or I(nternal)-language are not the same – *langue* concerns the linguistic system which exists as part of the social collectivity while competence is concerned with the individual speaker – both speak to the linguistic system. It is this *system* that is likely what Sapir refers to when he speaks of the genius of a language. This system does not necessarily emerge through the study of language in a variety of naturalistic settings, but is something that must be studied in and of itself.

A brief detour into fieldwork is helpful here (it is difficult to talk about writing grammars without talking about fieldwork, as the latter is frequently a prerequisite for the former). In fieldwork, research on language behaviour can be described as taking the study of naturalistic speech as its centrepiece; research on systems often uses elicitation as well as a key

component to gain insight into the knowledge of language held by a speaker. The centrality of elicitation in fieldwork is controversial among fieldworkers (see, for instance, many of the articles in Newman and Ratliff (2001); Mithun gives a nicely balanced perspective). Hyman (2001) presents oppositions between what he calls a fieldwork prototype and a fieldwork countertype; in terms of data he characterizes the fieldwork prototype as involving data that is naturalistic, while the fieldwork countertype involves data that is controlled (see Hellwig, this volume).

The naturalistic speech/elicitation issue in whatever guise is a source of debate among fieldworkers, and a similar question can be asked of grammars. What is to be included in a grammar? Is a grammar an analysis of natural speech, gathered from a wide variety of genres and supplemented with elicitation to, for instance, fill in paradigms? (See Mithun (2001) for detailed discussion of roles for elicitation.) Or is a grammar this plus an attempt to get at the underlying system, including what a person 'knows', in the abstract sense, about his or her language but may not actually use often, if at all, and thus is not part of a corpus?

In this debate, I take the latter position, the inclusion of both these parts of language in a grammar. Thus when I wrote the grammar of Slave I asked, in addition to what is used in the language, what does a speaker know about his or her language in this abstract sense? Elicitation and discussion with consultants about their language provided me a way of coming to an understanding of the language which, for me, was impossible working with corpora – elicitation took me to areas that I would not have found otherwise, and to a level of understanding about the language that I believe I could not have achieved without the close discussion with speakers about grammaticality judgments of aspects of the language that may never have been used. My discussion in this article is predicated on this assumption that such knowledge forms a vital part of a language, and thus deserves a role in a grammar.

2. Theory in grammar-writing: What does formal theory contribute?

Given this brief background, I am ready to address ways in which I believe linguistic theory has influenced grammars. I take as an assumption that there are several criteria that a grammar must meet: it should be comprehensive and complete, clear and accessible, and contain a wealth of authentic, accurate, and appropriate data; the argumentation should be coherent,

rigorous, integrated and insightful. I focus on content, beginning with a discussion of the scope and depth of grammars.

2.1. Theory and grammar 1: Scope and depth

What is the appropriate scope for a grammar? What does it mean for a grammar to be 'complete and comprehensive', a prerequisite noted in the above paragraph? There is probably little disagreement on the basics: a grammar should contain as full a description of a language as possible, including phonetics, phonology, morphology, syntax, semantics, and discourse functions.[2] There might be other materials as well; these could include historical developments, orthography, and lexical semantics, among other topics. I emphasize these particular areas based on a survey of several grammars including my grammar of Slave (Rice 1989) and recent grammars by Aikhenvald 2003 (Tariana), Valentine 2001 (Nishnabemwin), and Watters 2002 (Kham); see Rice (2006) for discussion.

When one compares these relatively recent grammars with grammars written fifty or so years ago, some points about scope of coverage stand out. Perhaps most obvious is that syntax occupies a position in recent grammars that it did not fifty years ago. Many recent grammars also contain far more discussion of phonetics than do older grammars. The reasons for the increased inclusion of phonetics and syntax in grammars are probably different. For phonetics, the world has changed in terms of technology: today one basically needs a computer and software to do phonetic work; these technological advances have allowed phonetics to become a core part of linguistic training in a way that was difficult even fifteen years ago. The developments in phonetics allow for the careful examination of sounds, of phonetic variation, and also for a more in-depth study of prosodic properties connected both with sentence-type and discourse function. The change in syntax comes, I believe, from a different source, through the development of the generative paradigm, a paradigm that gave definition to what syntax is and provided a core set of questions to ask. Notions of basic phrase structure, constituency, and sentence types, while recognized earlier, were brought into centre stage through early generative grammar.[3]

In this section, I focus on three areas of syntax, wh- questions, complementizers, and intransitive verbs. My knowledge of formal linguistics allowed me to address the first two of these topics in some depth in the Slave grammar; without this knowledge these topics would still have been ad-

dressed, but the discussion would have been far more superficial than it is. The third focus is one that is not discussed in a systematic way in the Slave grammar, but later research tells me that it should be. In the following, I concentrate simply on scope and not on presentation of the material in the grammar. I could easily have addressed many other topics; these are three that interest me and that illustrate, I believe, that formal theory generated a set of questions, questions that I suspect I would not have pursued if it were not for my formal training.

2.1.1. wh- questions

Probably all languages have an equivalent of wh- questions in English. The basic description of wh- questions in Slave is straightforward. There is a set of question words which I will call wh- words. These can occur in situ, as illustrated in (1).[4]

(1) a. netá judóné radujá
2sg.father when 3sgS.opt.return
'When will your father return?' 1159 (Hare dialect)

b. David 'ayíi ehtsi
what 3S.imp.make
'What did David make?' 1160 (South Slavey dialect)

In addition, wh- words can occur at the beginning of the clause; equivalent sentences to those in (1) are given in (2).

(2) a. judóné netá radujá
when 2sg.father 3sgS.opt.return
'When will your father return?' 1159 (Hare dialect)

b. 'ayíi David yehtsi
what 3S.imp.make.3DO
'What did David make?' 1160 (South Slavey dialect)

Sentences such as those in (1) and (2) are heard in speech, and are easy to elicit. These might be considered the core set of facts of the system.

Wh- questions were a major topic of research in theoretical linguistics while I was involved in the fieldwork that led to the Slave grammar. The theoretical debates of that time made me interested in a set of questions that

drew me beyond this basic data set. The existence of both wh- questions with the wh- words in situ, as in (1), and at the front of the sentence, as in (2), made Slave an interesting language from a theoretical perspective. A seminal article by Chomsky, 'On wh-movement' (1977), appeared at the time that I was deeply engaged in fieldwork, and, as I recall, greatly affected my study of questions in Slave. This article raised many issues about the theory of transformations, and led to a general theory of wh- movement. In the article, Chomsky distinguished a constellation of wh- diagnostics to identify wh- movement. For instance, he argued that wh- movement leaves a gap, and that it observes subjacency restrictions but, in some instances, it appears to be unbounded. To illustrate these concepts, consider wh- movement in English. A sentence such as that in (3) illustrates that movement leaves a gap. The square brackets indicate the logical position of the wh- word.

(3) What did Mary buy [ ]?

Movement of the wh- word to the front of a sentence is unbounded, as the example in (4) illustrates.

(4) What did Susan say Mary thought John should persuade Bill to buy [ ]?

However, there are times in which movement of a wh- word to the front of a sentence is blocked, as in (5).

(5) **What* do you believe the story that Mary bought [ ]?

In (5) movement creates what Chomsky called a subjacency violation. Without going into details, in this case the presence of the noun phrase 'the story' blocks the wh- word from moving.

I already knew that Slave exhibited a type of wh- movement based on sentences such as those in (1) and (2). Chomsky's work and the writings of others, in particular of Schauber (1979) on Navajo, another Athapaskan language, led me to ask a number of questions about possible question forms in Slave. For instance, do all question words have the ability to occur both in situ and in sentence-initial position? (Yes.) Do sentence-initial question words leave a gap? (Yes and no: with arguments a pronominal occurs in the in situ position under a set of well-defined conditions, while with adjuncts a gap is found.) In considering the questions with displaced

question words, Chomsky raised the issue of whether all displaced elements pattern in a similar way. For instance, in Slave there is a construction that I was treating as a topicalized structure, with topicalized phrases placed at the beginning of the clause. This literature made me ask the following question: Do question words that appear in sentence-initial position pattern like other displaced elements? (Yes.) Issues of locality were also of interest in light of the discussion of subjacency. This led me to another question: When a question word is semantically part of an embedded clause, what are the possible positions in which it can occur; must it remain within the embedded clause, or can it appear at the front of the matrix clause as well? (This depends on the type of complement clause, as examined immediately below.)

The study of the position of wh- words in complex sentences presented a particularly interesting challenge, and I discuss this in more detail here. In general, when the wh- word is part of a complement clause, it can occur either in situ, as in (6a), or at the front of the complement, as in (6b), but not in the matrix (6c) on this reading.[5]

(6) wh- words in complex sentences 1

a. Raymond [Jane judenį ri yįlį] kodįhshǫ
where focus 3S.pf.be 3S.know
'Where does Raymond know Jane to be? 1162 (Hare)

b, Raymond [judenį ri Jane yįlį] kodįhshǫ
where focus 3S.pf.be 3S.know
'Where does Raymond know Jane to be?

c. *judenį ri Raymond Jane yįlį kodįhshǫ
where focus 3S.pf.be 3S.know

However, in some cases a wh- word can occur in more possible positions: it can be in situ (7a), at the left edge of the complement (7b), or at the left edge of the matrix clause (7c).

(7) wh- words in complex sentences 2

a. in situ
Mary hayi [John judenį ri raraxuwo'į] hadeyįdí
focus where focus 3Sopt.waitfor.1pl 3S.pf.say
'Where did Mary say John will wait for us?' 1161 (Hare)

b. left edge of complement
Mary hayi [judenį ri John raraxuwo'į] hadeyįdí
'Where did Mary say John will wait for us?' 1161

c. left edge of matrix clause
judenį ri Mary hayi John raraxuwo'į hadeyįdí
'Where did Mary say John will wait for us?' 1161

The matrix verb in these sentences is 'say'. Verbs meaning 'say' and 'want' in Slave and many other Athapaskan languages pattern differently from other complement-taking verbs in the languages, and are called direct discourse verbs (see Rice 1989 for discussion on direct discourse in Slave). Direct discourse verbs differ in many ways from regular complement-taking verbs; this patterning in questions is one of those ways; see Rice 1989 for more details.

In Rice (1989: 1162) I note that:

> A question word can occur at the front of a matrix sentence containing a direct discourse verb. While this placement of the question word is optional, as the (a) versions of the above examples show, it is preferred for the interpretations given. The sentences in which the question word is syntactically part of the sentence that it is semantically associated with, or in situ, have a second interpretation, where the question is indirect.

For the example in (7), the most likely interpretation with the wh- word as part of the complement (7a, b) would be along the following lines: 'Mary said 'where will John wait for us?''; i.e., the sentence will be interpreted as an indirect rather than a direct question. This interpretation is also available in (7c), although it is not the usual one.

It is unlikely that I would have come to this understanding of wh- questions in Slave without a background in formal theory: it was the formal literature that led me to ask questions that provided me with an understanding of the various questions above, and others. The work by Chomsky, Schauber, and others caused me to go beyond the simplex sentences in (1) and (2) and pursue the complex sentences in depth; their work led me to experiment with the placement of wh- words which are part of a complement clause semantically. Overall, the questions being asked at that time caused me to wonder how Slave fit in to the typology of questions that was proposed.

Question formation is an important part of the grammar of any language, yet I did not hear questions such as those given above being spoken around me all that often, if at all. However, by attempting to address issues

that were important in the theoretical literature, I found striking agreement on both readings and grammaticality judgments across speakers and dialects of Slave, suggesting that this information is part of the linguistic knowledge of the speaker and of the community. This literature directed me in doing fieldwork, and I decided that wh- questions deserved full and detailed discussion in the Slave grammar even though particular structures might be of vanishingly rare occurrence in spoken language. Interestingly, in grammars of other Athapaskan languages, the topic is not addressed (granted, many of these are grammars that cover little if any syntax), although every Athapaskan language in which the position of these words has received detailed attention (e.g., Schauber 1979 on Navajo, Denham 1997 on Witsuwit'en, Potter 1997 on Western Apache) exhibits variability in the placement of wh- words. Comprehensive comparative study of wh- question formation in Athapaskan languages is not possible, however, based on the grammars and dictionaries of the languages. This topic received consideration in the Slave grammar because, I believe, of my training in formal linguistics.

2.1.2. Complementizers

Many Slave dialects exhibit two complementizers, *gú/gha* and *nį*. In the Slave grammar, I say: "The complementizers *nį* and *gú/gha* (henceforth *gú*) can be used in sentences that are structurally identical. The difference between them lies not in structure but in meaning" (Rice 1989:1243). Consider the sentences in (8), the first with *nį* and the second with *gú*.

(8) a. sú [hejǫ súhga ríritǫ nį] kodinehshǫ
Q here sugar 1plS.pf.brought comp 2sgS.imp.know
'Do you know if we brought the sugar?' 1249 (Hare)

b. sú [hejǫ súhga ríritǫ gú] kodinehshǫ
'Do you sg. know if we brought the sugar?' 1249 (Hare)

These sentences appear to be identical in meaning based on the translations given here, and there did not seem to be any way to distinguish between them. The complementizers seemed rather parallel to the English complementizers that, at the time, were referred to as *that*, *for-to*, and poss-*ing*, where the choice of complementizer with a particular verb was re-

garded as more or less arbitrary. Two things made me wonder whether this was really the case, however.

First, theoretical discussion of the time was focused on complementizers and whether the choice really was so arbitrary as had been claimed. As Schauber (1979) discusses in her dissertation on Navajo, complementizers were originally viewed by generative linguists as markers of syntactic subordination in Navajo. Schauber followed a different route, taking the lead of Bresnan (1970, 1972), Erteschik-Shir (1973), and others, that complementizers may have semantic content. This insight made me think that a deeper examination of this topic in Slave would be worthwhile. This then was the theoretical foundation for examining the complementizers in greater depth.

Second was an empirical foundation. While these two complementizers *nį* and *gú* appeared to be parallel in examples such as those in (8), there were other cases in which only one or the other could be used. For instance, *nį* also marks relative clauses with so-called 'areal' head nouns, while *gú* has a number of adverbial functions. ('Areal' is used to denote nouns that, in some sense, occupy space. In (9a) 'the place where he drowned' is considered to be areal, while the use of the complementizer *nį* in (9b) assigns an areal (place) reading to the numeral 'five'.)

(9) a. judeni tu yewéhxį nį du gára'eyída yíle
where water 3S.pf.kill.3DO comp neg 1plS.pf.go there neg
'We never went back to where he drowned.' (literally: where water killed him) 1317 (Hare)

b. lák'e nį líyídee
five comp 1plS.pf.stop
'We stopped at five places.' 382 (Hare)

c. lát'e gú sáṇįle
one comp 2sgS.imp.give plural objects to 1sgOO
'You sg. give them to me one at a time.' 382 (Hare)

In addition, *gú* occurs to the exclusion of *nį* with higher inchoative and causative verbs.

Thus, both theoretical and empirical reasons suggested that there was more to be known about the complementizers in sentences such as those in (8). Indeed, while it initially appeared that these sentences shared a meaning, deeper probing led me to learn that there are subtle differences between them. With the first question, the expected answer is 'Yes, I know' or 'No,

I don't know'; in the second case, the expected answer is 'Yes, we brought it' or 'No, we did not bring it.' As I say in the Slave grammar, "It is not surprising that *nį* is marked as a complementizer in 'know if' questions: the speaker will not receive much information in answer" (1250). Thus, while my initial observations of Slave did not lead me to think that there was a difference between the complementizers, the theoretical claim that complementizers might differ in semantic content, coupled with the clear differences between these morphemes in other situations, made me pursue this issue, and Schauber's work on Navajo helped guide me to a hypothesis about what the difference between these complementizers might be. In Rice (1989) I concluded that the complementizer *nį* has a meaning associated with it, and is used when the complement has a contextual reference, or is presupposed, while *gú* is basically an indicator of subordination.

This is an issue that was not discussed in grammars of other Athapaskan languages that were available at the time (again, note that few of the grammars of Athapaskan languages include much information on syntax) beyond Schauber's dissertation, and sentences such as that in (8b) would likely never occur; the topic found its way into the Slave grammar because the question of whether complementizers do more than mark subordination was important at the time. As more in-depth work has been done on complementizers in Athapaskan languages, similarities with Navajo and Slave have emerged, suggesting that this is a core distinction in the grammar of Athapaskan languages in general, and thus part of genius of this family.

2.1.3. Intransitive verbs

In the Slave grammar, although I identified characteristics of intransitive verbs, I did not specifically examine classes of intransitives. If I were to revise the Slave grammar, I would include a chapter on intransitive verbs, as intransitives in Slave, and other Athapaskan languages, have fascinating properties. Although much information about intransitive verbs is present in the grammar, my work on this topic in a sense really began in the late 1980's, when I was asked to give a talk on noun incorporation in Slave at the University of Arizona. I had gathered considerable information about noun incorporation, both from texts and elicitation, but I had not looked in detail at the types of verbs that allowed incorporation, nor at the types of nouns that could not be incorporated as well as those that could be incorporated.

Work by Baker (1988) on incorporation caused me to revisit the material on intransitives in the grammar. I observed that all of the verbs that allowed incorporates were of a particular type, namely verbs that might be considered to be unaccusative. I then checked to see if verbs that would be considered to be unergative also allowed incorporated subjects, and found that they did not. Thus, it was the theoretical literature on noun incorporation – namely Baker's claim that subjects could not be incorporated – that took me back to data with a question that I had not asked previously.

Having realized that there were two classes of intransitives on the basis of incorporation criteria, I then, aided by the theoretical literature on the differences between these classes (e.g., Perlmutter 1978, Baker 1988), extended the study and realized that the two classes differ in other ways as well: in addition to one class allowing incorporated nouns as subjects while the other does not, the class that allows incorporates participates in transitivity alternations and does not occur in an impersonal passive construction; the other class does not allow incorporated nouns as subjects, fails to participate in transitivity alternations in general, and occurs in impersonal passive constructions (Rice 1991). This finer delineation of properties of intransitives at that stage was driven by trying to understand such verbs within a framework of unaccusativity.

Over the next few years, I did more work on characteristics of subjects and objects, work that was stimulated by the theoretical literature that recognized more than one possible structural position for arguments (see Rice and Saxon 2005 for a recent overview with respect to Athapaskan languages). In Rice (2000b) I concluded that in order to understand which intransitive verbs were subject to causativization and which could take incorporated subjects, studying properties of the verbs alone was not fruitful; rather it is necessary to understand properties of the subjects such as agentivity and animacy. Basically, a verb with a non-agentive subject can be causativized; nonanimate agents and patients can be incorporated. The research on unaccusativity helped me to realize that not all subjects were patterning the same way, and it was deeper investigation of the language that helped me to see that grounding the difference in the verbs alone was not correct, and that properties of subjects required careful study as well.

While discussion of agentivity, animacy, and volitionality is found in the Slave grammar with respect to one property of intransitives, the choice of oblique object pronoun, the general role of properties such as humanness, animacy, and agentivity do not find a home together in the grammar as a set of intimately related properties. In revising the grammar, I would

add a chapter on this topic, as these notions have a pervasive effect on Slave grammar.

Interestingly, while the role of factors such as animacy and agentivity in grammar is a topic that has occupied functional linguists for some time, it is through reading formal linguistics that I came to appreciate what was going on in Slave and other Athapaskan languages. Thus, doors to new ways of thinking about things can open in many ways, and for me it was the literature on the positions that subjects could occupy that made me reflect carefully on what initially appeared to be different verb classes. The theory in a sense led the study, but the theory on its own did not provide what I now understand to be the best way of understanding intransitive verbs; it instead allowed me to define the question.

I could enumerate other topics in syntax in which I found theory and language working together; these include anaphora and the structure of complement clauses, among others, of the topics covered in the Slave grammar. The answers to the questions raised by a theory need not be those given by the theory, but the questions are ones that are critical to ask in helping to understand the system of a language. To me, the Slave grammar would be poorer if it did not include detailed discussion of the topics discussed in this section, and is poorer for not having a coherent discussion of the role of factors such as animacy and agentivity in Slave. While one might not find sentences such as some of those above in common use in discourse, they are clearly part of the linguistic competence of the Slave speaker.

Theoretical developments have an effect on coverage in areas other than syntax. I discuss two here, namely how my deepening understanding of aspectual systems has changed the way that I would approach writing on aspect, and how my recent work on morpheme order in the verb would affect the discussion of morpheme order.

2.1.4. Aspect system

There is a set of morphemes reconstructed as Proto-Athapaskan **n*, **s*, and **gh* (I use the orthographic <gh> for a voiced velar fricative, following Athapaskan tradition). In some works on Athapaskan languages, these are recognized as having semantic content. Krauss (1969: 82) notes that for Athapaskan "ni- has the marked meaning 'to a point, completive,' ghi- has the marked meaning 'from a point, inceptive,' and si- is unmarked in this

respect, 'static'." Young and Morgan (1986: 165) also provide meanings for these morphemes in Navajo: they call *yi-* completive, *ni-* terminative, and *si-* stative (*y* is the Navajo reflex of **gh*). However, in general little was made of this identification of meanings of these morphemes, and instead we find terms such as *n*-imperfective, *n*-perfective, *s*-perfective, and *gh*-perfective in the literature (e.g., Sapir and Hoijer 1967), where *n*, *s*, and *gh* are used to mark arbitrary formal classes. Somewhat later, these forms were called conjugation markers (e.g., Kari 1976, Young and Morgan 1986: 112, Rice 1989), with each verbal lexical entry having one of these forms listed with it; a prefix also can have a conjugation marker as part of its lexical entry. Thus, the general treatment of these elements is that they are formal class markers.

While a conjugation analysis describes these forms, there are problems with it. First, a single verb can occur with more than one conjugation marker, with a different reading. The reconstructed morphemes are listed in the left column. (The abbreviation 'O' indicates that there is a nominal direct object of the verb.)

(10)	a.	*s:	O thehk'é	's/he shot sg. O' 891 (South Slavey)
		*gh:	O ịhk'é	's/he shot pl. O'
	b.	*s:	O dedéde	's/he twisted it once'
		*gh	O dediịde	's/he wound it'

With the reflex of the **s* conjugation marker, the object is interpreted as singular in number, while with the same verb with the reflex of the **gh* conjugation marker the object is interpreted as plural in number. Similar facts hold true for verbs where number is lexicalized as part of the root; for instance, 'kill singular object' occurs (11a) with the Slave reflex of **s* while 'kill plural object' (11b) requires the reflex of **gh*.

(11)	a.	verb stem requiring singular object	
		be-wi-h-xị	'I killed it' 792 (Hare)
		3DO-s conjugation/1sgS-valence-kill sg. object	
	b.	verb stem requiring plural object	
		ku-yi-ghǫ	'I killed them' 792 (Hare)
		3pDO-gh conjugation/1sgS-kill pl. object	

Second, verbs within a particular semantic class occur with the same conjugation marker in the perfective aspect (see Rice 1989, chapter 24, unit

21 for details): the conjugation marker is one of the indicators of what are called verb theme categories in Athapaskan languages (these are basically lexical entries; see, e.g., Kari 1979, Rice 1989). For instance, verbs of motion and verbs of handling all require *n* conjugation marker in the absence of other prefixes. Motion verbs include verbs such as 'arrive' and 'handle object.' Verbs that involve duration and telicity (e.g., 'make singular object', 'boil,' 'melt') occur with the reflex of **s* in the perfective, while those involving durativity and non-telicity occur with the reflex of **gh* (e.g., 'comb', 'sing', 'make plural object').

Third, prefixes with semantically similar aspectual properties require the same conjugation marker. (12a) shows a verb with the prefix *ní-* 'to a point, terminative' while (12b) has a prefix *tį-* 'start' and the third a prefix *ts'e-* 'awaken'. These verbs all involve activities that are non-durative, and punctual. This is marked by the prefix *n* or nasalization.

(12)	a.	ní-n-įya	's/he arrived' 709 (South Slavey)
	b.	tį-n-ehtla	'I started off' 711
	c.	ts'e-y-ę́-chú	's/he woke sg. O' 713

Finally, there is a prefix referred to as the distributive in the Athapaskan literature. This morpheme, *yá* in Slave, indicates that the actions involved are performed separately, sequentially, or in a number of locations, that a number of agents are each carrying out an action on their own, working as individuals rather than a group, or that the action is performed on a number of objects, each independently (see Rice 1989: 677). In Slave, the addition of this prefix to a verb often requires the presence of the **s* conjugation marker in the perfective. An example is given in (13).

(13)	a.	non-distributive form, y conjugation	
		ɬé-i-tsé	'I broke it' 681 (South Slavey)
		adverb-y conjugation/1sgS-broke	
	b.	distributive form, s conjugation	
		ɬé-yá-thi-tse	'I broke them'
		adverb-distributive-s conjugation/1sgS-broke	

While the facts are more complex than presented here, the basic picture here is that the distributive requires *s* conjugation marking in the perfective.

The above is an abbreviated sketch of this system in Slave. I was aware of these different properties of the morphemes under discussion, but in the

Slave grammar I treated these morphemes as idiosyncratic, conjugation markers, following the literature of the day. When I read work by Smith (1991) on what she calls 'situation aspect', her work opened my eyes to a very different way of thinking about these prefixes, one that unites the various properties discussed above. I came to see that using the insights of the literature on aspect, a more perceptive analysis was available, one in which the conjugation markers were viewed as having basic aspectual properties rather than being arbitrary. If I were to revise the Slave grammar, this is an area I would redo as I have come to appreciate that there is systematicity here, and that it is fairly straightforward which of these morphemes a particular verb will occur with and what the meaning of a verb with a particular one of these morphemes will be.

I will briefly review the research that caused me to see these morphemes as an integral part of the aspect system. Smith (1991) takes up on work on Aktionsart by Vendler (1967) and others. She argues that there are four basic type of Aktionsart, or what she calls situation aspect, activities (durative, atelic), accomplishments (durative, telic), achievements (non-durative, telic), and semelfactives (non-durative, non-telic). (There is another class, statives, which I set aside in discussion here.)

Individual verbs can be thought of as having intrinsic aspectual content. Thus, for instance, 'arrive' indicates an event that has no duration and happens at a point in time, while 'comb' indicates an event that has duration and has no natural endpoint, and 'melt' also takes place over time, but has an endpoint.

In addition to verbs having intrinsic aspectual content, material in the predicate can refocus the verb so that a different situation type is found. To take one example from Smith (1997:20), the sentences in (14a) and (14b) differ in their situation type.

(14)	a.	He played sonatas.	activity: durative atelic
	b.	He played a sonata.	accomplishment: durative telic

The choice of object noun – a bare plural in (a) or a singular count noun in (b) – determines the situation type of the sentence. Similarly, prepositional phrases, adverbs, and other predicate material can interact with situation aspect, with situation aspect for a sentence computed at the predicate level.

It has long been recognized in the Athapaskan literature that verbs can be divided into aspectual classes; these are the verb theme categories identified above. It was through Smith's work on situation aspect in English,

with her detailed discussion of the role that the predicate plays, that I came to regard the Slave morphemes in question, the conjugation markers, as themselves carrying meaning. This rethinking did not involve collecting new data, but rather organizing my thinking in a different way by pulling together strands that intersect with one another, but that had seemed to be independent. Thus, although lexical idiosyncrasies exist, there is, overall, a regular association of form and meaning, which I summarize in (15); I omit the semelfactive.

(15)

*n	non-durative, telic
*s	durative, telic
*gh	durative, non-telic

An analysis that treats these morphemes as situation aspect markers is more uniform and, I believe, more insightful than one that considers them to be conjugation markers. It treats as a single constellation of properties the fact that interpretation of object number varies systematically depending on the particular marker (similarly to English, there is a correlation between plural number and activities, and between singular number and accomplishments) and the fact that verbs with similar aspectual meaning appear with the same situation aspect marker. The fact that other material in the verb word (in the predicate) can affect situation aspect, causing a change in situation aspect marker from that found with the verb alone, also falls into place.

Studying the Slave aspect system through the lens laid out by Smith allowed me to see things that I had been unable to see previously – the coupling of the facts of the language with the theoretical insight revealed the pattern.

2.1.5. Morpheme order in the verb

Morpheme order in the verb is another topic that has occupied me over the past several years (e.g., Rice 2000a). Morpheme ordering in the verb in Athapaskan languages is generally treated as controlled by a template, where the template stipulates where each morpheme or morpheme type falls relative to other morphemes. In the Slave grammar, I follow this practice. I devote a chapter to each position of the template, discussing the form and function of morphemes in that position, as well as the complex mor-

phophonemics that morphemes in adjacent positions enter into. The template provides an extremely useful descriptive device, and is a traditional means of expressing morpheme order in the Athapaskan literature.

Despite the utility of the template for any individual language, I became concerned with two issues. First, within Slave, and within other individual Athapaskan languages, some variation in morpheme order was reported. Second, and the larger driving force that led me to reconsider the template analysis, various facts in Slave and other Athapaskan languages just did not fit general observations about cross-linguistic patterning of morpheme orderings. For instance, why was Navajo one of the few languages identified as having template morphology in the textbooks? Why was there variation in the order of some morphemes but not of other morphemes in the Slave verb? Why, looking across the Athapaskan language family, is the cross-language variation in morpheme ordering quite restricted? These observations had been made in the literature, but had received no satisfactory answer to my mind.

I recall vividly what led me to believe that it was worthwhile to pursue a hypothesis that ordering of morphemes was not random, but had an explanation. Chomsky was giving a talk in Toronto, and provided those of us in my department with our first real exposure to functional categories and their ordering. I remember listening to him talk, and having one of those 'eureka' moments: the order of the functional elements in the Slave verb exactly fit the order in which Chomsky proposed these elements occurred universally! It was this talk that led me to pursue cross-family similarities and differences in morpheme ordering, and led me more deeply into the literature on various factors that can control morpheme ordering. Based on the insights from the theoretical work I have done on this topic (Rice 2000), while I would still use a template to organize the discussion of morpheme ordering in the verb, at the same time I would incorporate into the section on verbs additional discussion of morpheme order, bringing together in a systematic way what the usual order is and what generalizations can be made about this, and also observing where violations of the usual order exist. In the Slave grammar I discuss the phonological factors involved in morpheme ordering (e.g., within a particular set of prefixes, *d* always precedes *n*), but the semantic factors that enter into morpheme ordering (e.g., the relationship between subject and aspect), are not touched. A discussion of why some ordering is rigidly fixed and other ordering is freer would, I think, enhance our understanding of the language in a way that would be valuable in a grammar.

2.1.6. Summary: the questions asked

I have identified several ways in which the content of the Slave grammar was affected, or would be affected in a revision, by formal linguistic theory. Theoretical developments caused me to ask questions that I would not have posed otherwise (e.g., wh- questions, complementizers) and to rethink analyses (e.g., aspect). My research in recent years would lead me to add several topics to the Slave grammar if I were to revise it, and to expand on topics that are present there. These topics include, in addition to those discussed above, more detailed work on the position of adverbs, driven by research by Cinque (1999) and others on adverb position and adverb order. Research on lexical semantics by researchers such as Smith (2000) and Pustejovsky (1995) makes me want to add detailed discussion of the lexical semantics of verb stems, and especially of what might be considered to be light verbs. I have identified these topics through the language, and through the theory, working in tandem. Formal theory thus may lead to new questions, forcing one to push, probe, and pursue topics to a depth beyond what may be found in naturally occurring speech.

2.2. Theory and grammar 2: Representations

The contribution of formal theory to broadening the scope of a grammar is a significant one. Formal theory affects grammars in other ways as well. One strength of generative theory, to my mind, is the development of representations. Tree notation, showing constituency and hierarchy, or the use of labeled brackets, provides, at least for me, a natural way of understanding sentence structure. In phonology as well, the use of representations has allowed for a simplification of discussions of tone and stress. In this section I examine one of these representational devices, autosegmental representations in phonology. I illustrate here with a single example, the patterning of verb stem tone in the Hare dialect of Slave.

Many Athapaskan languages are tonal, with a high-low contrast. At the time that I was working on tone, Michael Krauss's (1979/2005) seminal paper on tone in nouns in Athapaskan languages was available, but little was published on tone in verbs. I was aware of one property of verb stems in Hare from 1929 notes on this dialect by Fang-Kuei Li. In these fieldnotes, Li indicated contrasting tone on noun stems (e.g., *sá* 'beaver' vs. *sa*

'sun, month'), but all verb stems have low tone. Given this, I was predisposed when I heard the language to hear low tone on verb stems. Based on Li's transcriptions, I also had certain expectations of tone on verb prefixes, namely that an individual prefix would be, by and large, invariant in its tone.

This is what I heard at first, under influence of Li's notes. However, as time went on, I was sure that I was hearing different tones on prefixes. Several facts were puzzling. Why, when a particular stem was used as a noun, might it bear high tone while that same stem used as a verb would have low tone? Further, why, when the noun stem had high tone, did the syllable before the stem carry a high tone in the verb? Some examples are given in (16), where the verb stems are separated from the prefixes by a hyphen for ease of comparison.

(16)	i.	a.	noun stem	
			-fí	'head' 110
		b.	verb stem	
			k'ínak'ohé-fi	's/he turns his/her head' 110
	ii.	a.	noun stem	
			dzée(h)	'gum' 111
		b.	verb stem	
			hį́-dzeege	'be gummy'

Another question was also troublesome: why are there prefixes that vary between low tone and high tone, as in (17)?

(17)	a.	prefix we-	
		O we-h-dzo	's/he trapped O' 108
		O wé-h-k'e	's/he shot O' 108
	b.	prefix go-	
		go-h-dee	'I talk' 108
		gó-h-ts'i	'I lie' 108

Finally, there was a third tone, beyond the expected high and low tones, that had me baffled for some time (in fact, it took me some time to even hear this tone; see below). This tone is illustrated in (18), where I use a double acute accent to mark it. The tone is phonetically extra high.

(18)	yé-h-k'e	's/he shoots it' 123
	yő-h-k'e	's/he shot it' 123

Two different things gave me insight into the tonal system of Hare. First was work with a consultant who kept at me to hear the difference between a prefix high tone and a prefix extra-high tone, as in (18). And second was autosegmental phonology, and, in particular, an article by Clements and Ford (1979) in which they discuss tone in Kikuyu. Clements and Ford show that, essentially, Kikuyu tones are displaced one syllable to the right from the tones in related languages. Something similar is found in Hare: the tone that is lexically associated with the verb stem, and which appears on the stem in the closely related Slave dialects, is generally displaced one syllable to the left in Hare. Thus, it becomes clear, using autosegmental phonology, why related nouns and verbs might differ in tone: in the nouns, the tone is actually phonetically associated with the stem, while in the verbs, it associates one syllable to the left of the stem. This is illustrated in (19), repeated from (16i) above.

(19) -fí ‘head’ k’ína-k’oh-é-fi ‘s/he turns head’

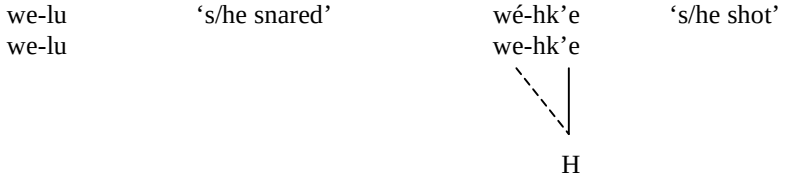
Autosegmental representations are provided in (20). Following Rice (1989) and other work on Athapaskan languges, I ignore the low tone, assuming that it is a default. See Rice (1989) and Rice (2005) for discussion.

(20)

The autosegmental representations show in what I believe to be an intuitively satisfying way just what is going on in these two cases. In both words the high tone is lexically affiliated with the stem. In the noun, it associates to that stem, but with the verb, it associates instead with the prestem syllable, being lost from the stem itself.

Autosegmental representations also demonstrate clearly why the same prefix sometimes has a low tone and sometimes a high tone. This prefix is not lexically variable in tone; instead one stem has a low tone and the other a high tone. The prohibition on high tones on verb stems, coupled with the requirement that the tone surface, forces it to be displaced, occurring phonetically on the prefix.

(21)



In addition, such representations are illuminating as to why an extra-high tone might appear. Here the prefix has a lexical high tone (this high tone is an allomorph of the *s* situation aspect marker discussed earlier).

(22)

yé-lu	's/he snared it'	yé̋-hk'e	's/he shot it'
ye-lu		ye-hk'e	
|		\ |	
H		H H	

In the former case, only one high tone is lexically present in the verb and it is associated with the prefix; in the latter, there are two high tones, one lexically associated with the prefix and the other with the stem. As in the previous example, the stem high tone is unable to surface on the stem itself, and both high tones associate phonetically with the prefix to create an extra high tone.

In Hare, there are a number of cases in which surface tones appear other than on the morpheme they are associated with lexically. This general phenomenon is captured elegantly in autosegmental terms, and these representations to me are a true aid in understanding exactly what is happening.

Grammars often make use of representations developed in formal linguistic theories, and these representations can aid the user of the grammar in envisaging structures and processes. Devices such as trees and autosegmental and metrical representations do not find their way into grammars immediately when they are proposed in a theory – in the early stages, they are simply regarded as part of the theory. However, some of the representational devices that are designed for theoretical purposes become absorbed into the descriptive system. What will happen with representations in current theories? Will syntactic trees with hierarchically arranged functional categories which do not occur as independent words become part of basic linguistic theory? In a different formalism, will Optimality Theory tableaux make their way into the descriptive framework of grammars? It is too early to judge whether these particular representational systems will have staying power. The grammarian must at one and the same time have both feet firmly on the ground and be a visionary, building on insights of current theories in terms of how a language works but taking care with formalisms. I return to this theme after examining terminology.

2.3. Theory and grammar 3: Terminology

Terminology is a persistent source of concern in linguistics. The same technical term is often used in different ways depending on various factors including linguistic tradition and language family. While one might think that this is inconsequential, in fact it can lead to misunderstandings of various sorts.

Consider, for instance, the use of the words 'aspect' and 'mode' in the Athapaskan literature. Terminology around tense, aspect, and mode is fraught with problems in much of the linguistic literature, and the Athapaskan literature is no exception. In the Slave grammar, I point out that these terms are used structurally rather than semantically in the Athapaskan literature. The term 'mode' is used in much of the Athapaskan literature to refer to prefixes that mark imperfective, perfective, optative, and future. The term 'aspect' is used for categories called such things as momentaneous, continuative, repetitive, conclusive, durative, semelfactive, neuter, transitional, comparative, progressive, customary, and distributive. Elsewhere in the Athapaskan literature, these terms are basically interchanged. Simply to illustrate the variation, Li (1946: 410) uses the terms modal and aspect in Chipewyan, with modal referring to what Hoijer (1946: 56) calls adverbial prefixes and aspect referring to what Hoijer calls tense-modal prefixes for Chiricahua Apache. Cook (1984: 126) uses aspect1 (mode) and aspect 2 for Sarcee, where aspect1 corresponds with Hoijer's tense-modal prefixes and Li's aspect; see Cook (1984: 122) for discussion about the frustration that this causes. In the Slave grammar, I used mode and aspect/derivation to refer to what Hoijer called adverbial and aspect, but I added the term conjugation, a term which was not used in the descriptions of the other languages (although the morphemes were identified).

While different Athapaskan languages may well demand different accounts, it is not so clear that this is the case based on the discussions of the languages in the sources, although this possibility can certainly not be discounted. Someone studying the Athapaskan literature would be forgiven if they had considerable difficulty in determining just what these words mean. It would also be unsurprising to find that the languages were inappropriately categorized in typological work. The terms are ever so familiar, but at the same time are totally mystifying. In my 2000 book on morpheme order in the verb of Athapaskan languages, I changed this terminology, using the term viewpoint aspect for imperfective and perfective and situation aspect for the items discussed in section 2.1.4 that indicate durativity and telicity; I

used sub-situation aspect for what I had previously called aspect/derivation, adopting this terminology from Smith (1991). If I were to revise the Slave grammar, I would use this terminology in it and I would define the terms on first introduction, with definitions repeated at various spots where the terms were reintroduced. This would help clarify the terminology both for people familiar with the vocabulary used in the Athapaskan literature and for those trying to learn the Athapaskan literature. (Of course, whether this would become standard terminology in the Athapaskan literature is another issue, as is whether it will remain standard terminology in linguistic theory.) The complex and non-standard terminology can serve as a barrier to the person who does not control the literature. In addition, it can hold back comparison of the phenomenon within the particular language family by obscuring comparison of analyses with those already developed for other languages.

2.4. Theory and grammar-writing: Summary

In the above sections, I hope to have shown that ongoing advances in linguistic theory have an influence on the basic linguistic theory in which grammars are usually framed. Grammarians may seek to express insights that go beyond what is found in a corpus, a consequence, at least in part, of formal linguistic theory. Developments in theory force one to ask different questions, and allow for new ways of conceptualizing familiar material. This suggests that there will continue to be changes over time in what is considered to be essential in a grammar and in how particular topics are treated.

3. Theory in grammar writing: What of theory is *not* in a grammar?

In the previous section I identified several ways in which I believe that linguistic theory has strengthened grammars. In this section, I ask a different question: are there ways in which theory can impact negatively on grammars? Just as the answer to the question of whether theory can enhance grammars is yes, the answer to the question of whether theory can lead to worse grammars or be inappropriate in grammars is yes as well.

The role of linguistic theory in grammar writing is to inform the grammarian about topics to be investigated, topics to be pursued in greater

depth, and topics to be included in a grammar. Basically, the more a grammarian knows about language, the better the grammar of a particular language that grammarian is capable of writing. Theory provides one important vehicle to learning about language.

What should formal theory *not* do? One prerequisite of a grammar is that it be accessible. Thus a formal theory is helpful in the presentation in a grammar in as much as it contributes to accessibility, not just at the time that the grammar is written but over time as well. The presentation in a grammar thus should not be straitjacketed by the formalism of a theory. As an example of the kinds of difficulties a formalism can present that perhaps most linguists would agree with today, consider grammars written in tagmemic theory. These grammars are close to impossible for me to read – the formalism that was enlightening at the time is out of date, and serves, for me, to make the language under discussion inaccessible. Many formal devices – for instance, generative phonology linear rules embracing notation such as curly brackets and angled brackets – hinder the accessibility of what they are meant to simplify, and are extremely difficult to read today as well. A grammar that draws heavily on the terminology of the current syntactic theory of minimalism (terms such as probe and merge, weak features and strong features) would probably not fare well as these terms are not part of common linguistic parlance. Similarly a grammar with Optimality Theory tableaux, constraints, and vocabulary would likely not receive widespread acceptance as a step forward today. Terms such as NP and VP probably are in general use today. Other terminology from formal grammar may make its way into basic linguistic theory; the use of DP to replace NP is perhaps one place to look for this (thank you to Alan Dench for this observation). What is important is that a grammar be written in such a way that it remains useful and comprehensible for years down the road; as I wrote earlier, a grammarian needs to be a visionary, thinking of the grammar as a lasting document, one that can be read for many years to come.

Let me now revisit one of the topics discussed in section 2.1.1, wh- questions, to see how it is actually presented in the Slave grammar, and provide a lesson in how not to use a theory in writing a grammar.

3.1. wh- questions

A ten-page section of the chapter on questions in the Slave grammar is devoted to strategies of question formation. The first subsection examines

question words in situ, providing a number of examples of question words of all types. When sentences with question words in an embedded clause are presented, square brackets are used to enclose the embedded sentence. The next subsection examines sentence-initial question words, focusing first on simplex sentences and then on complex sentences, giving numerous examples. Frequency of the different types is addressed, as well as potential ambiguities.

There is discussion of theoretical constructs: "Such sentences suggest that there are two possible ways in which question words can achieve sentence-initial position: first they can be moved to that position (as with the adverbial question words) and second they can be generated in that position (as with the nominal question words). There is a rule that moves prominent question words into question complementizer position and there are also question words base generated in question complementizer position" (1163). This is followed by a presentation on moved question words where the syntax and semantics of movement are considered and finally base-generated question words are treated. Some theoretical terminology is present in this discussion: movement, base-generation, rule. At this point of the section, the discussion becomes more technical in terms of formal theoretical constructs: I introduce the terms 'subjacency' and 'trace' without much explanation.

Looking back on this part of the grammar, I believe that I should have avoided the use of such terms. Many of these terms have not come to be part of general linguistic lexicon; this is something that I was too inexperienced to understand at the time that I wrote the Slave grammar (despite good advice that I was unable to hear) as I had not yet lived through a period of major paradigm shift. That adverbial question words and nominal question words pattern differently, and that the locations in which displaced question words can appear depends on the verb, remain interesting observations that deserve a place in a grammar but such observations can be presented independently of the formal vocabulary of the theory.

When I wrote the Slave grammar, terms such as movement, base-generation, and subjacency provided a convenient vocabulary to characterize the differences between the types of question words, and it was the existence of these theoretical constructs that pushed me to think about the differences between them as well as the similarities. However, I would revise this section of the grammar; it is far too tied to theoretical constructs of its day, and the detailed discussion does not stand up well only fifteen years later. Imagine how it will read another fifty years from now!

3.2. Summary: The grammar/theory interplay

Not all grammarians will agree that the topics of most interest to linguists working in a formal framework belong in a grammar in as much as such topics often go far beyond the textual record (see, for instance, Heath (1984) on Nunggubuyu for a grammar that does not use non-corpus data). Most will likely agree that the grammar is very quickly dated if it is too embedded in a particular theoretical framework in terms of questions, formalism, and terminology; theory must first become part of description.

Nevertheless, formal linguistic theory is important to a grammar. A formal theory, like any theory, allows one to discover things about a language and to express insights into that language; its goal is not, and never has been, to provide a framework for a description of a language. Theory and description are involved in a complex interplay, a give-and-take: the theory leads us to investigate topics we might not look at otherwise, the description makes demands on the theory to examine and account for phenomena that it has not previously encountered. In this interchange between formal theory and grammar, formal theory has an important role in guiding content and analysis, in contributing to basic linguistic theory, and in framing and deepening analyses, but it does not frame the presentation. The theory informs and shapes, but does not control.

4. Summary

I began this paper by talking about how a grammar should serve to let a language tell its story, or express its genius. Each language has its genius about it. Perhaps reinforcing this point, Martin Joos (1957: 96) once said in a now famous (or perhaps infamous) statement, talking about the American (Boasian) tradition in North American linguistics, 'languages could differ from each other without limit and in unpredictable ways …' Few would agree with this statement in its strongest form; some would reject it altogether. Yet at least on the surface, languages continue to take us by surprise in the previously unobserved properties that they reveal and in how they combine familiar properties in unfamiliar ways. This is the story that needs telling.

How does formal theory help the grammarian to let the language tell its story, to express its genius, to bring out its essence? Concretely, setting the

grammarian aside for the moment, I have suggested that the theory and the description work hand-in-hand to create the grammar; it is difficult to separate them. More abstractly, and again leaving the grammarian aside, perhaps the theory can be likened to a ghostwriter – its job is to allow the story of the language to be told, bringing out that story in a compelling way. The theory should let the language reveal itself. Too blind adherence to a theory, any theory, will not allow that genius of the language to shine through. But without the theory, one may not even be able to see aspects of a language. The theory provides a set of questions to ask; theoretical changes often force one to raise a new set of questions or to look at old questions in a new way. With any language the investigator will certainly come across a range of characteristics: well-known and understood features, known properties packaged in a different way, and features that are, at least to the investigator, unanticipated. The patterning of wh- words in simplex questions in Slave was, for me, not surprising. The patterning of wh- words in complex sentences took a set of familiar properties, combining them in an unfamiliar way. The characteristics of direct discourse (not discussed in this paper) took me totally by surprise, and my knowledge of linguistic theory guided me in trying to understand what was going on. Recent work on direct discourse in Navajo (Speas 2000) has made me ask new questions about Slave direct discourse, and realize that, despite the Slave grammar being almost 1500 pages, there is much that I do not know about how direct discourse functions.

Theory of all kinds can help in understanding this complex object we call language. Formal theory is just one of the tools that a grammarian has at his or her disposal to help the language to tell its story; it assists in uncovering the genius of that language by serving to amplify our hearing to make out the subtleties of the story. It is the job of the grammarian to use theories, formal theory included, wisely to let the language speak out. Different grammarians will likely view a language in different ways depending on their training, their interests, and their expertise. Similarly, over time one and the same grammarian will understand different things about a language. In this sense, the grammarian has a large responsibility. The grammarian interprets the language and brings it to life for those not acquainted with it, and helps those acquainted with it to understand its messages. The grammarian must be able to see beyond the trends of the time at which the grammar is written, to weigh what is most important as a grammar is limited in scope in a way a language is not (after the Slave grammar was published, I found myself unable to open it for about two years, as I was con-

scious only of what was not there, and had lost sight of what was there). The more informed the grammarian is about language – through knowledge of theories of all sorts – the more she or he can help the language to tell its own story rather than the story of the grammarian.

Notes

1. Slave ([slevi]) is an Athapaskan language of northern Canada. The grammar of Slave was published in 1989. All data in this article is from the Slave grammar. The dialects do not differ with respect to the facts discussed here.
2. Grammars also contain other material: ethnographic information, texts, and word lists, to name a few. What a grammar should be is, of course, the topic of many papers in and of itself.
3. This was clearly not the only reason that syntax has come to occupy a prominent position in grammars. However, in terms of my own development, it is clearly the generative paradigm that led me to look in-depth at syntax and defined the questions about syntax that have occupied me over the years.
4. Abbreviations used in this paper are: sg: singular; pl: plural; S: subject; DO: direct object; OO: oblique object; imp: imperfective; pf: perfective; opt: optative. I use the orthography of Rice (1989). Note that e=[ɛ], ee=[e] ~ [e̹i], a hook under a vowel indicates nasalization, and an acute accent marks high tone (low tone is not indicated in the orthography). A raised comma is used to represent a glottal stop and consonantal glottalization. Symbols d, dz, dl, j, g represent voiceless unaspirated stops and affricates; t, ts, tɬ, ch, k are voiceless aspirated stops and affricates.
5. An example like (6c) is grammatical, but only on a reading where the location of Raymond when he is doing the questioning is under consideration; it is not Jane's location that is questioned. This particular case is not the best, being semantically odd in both Slave and English: a translation would be something along the lines of 'where is Raymond located while knowing that Jane is/exists.

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On describing word order

Randy LaPolla and Dory Poa

1. Introduction

One aspect that is always discussed in language descriptions, no matter how short they may be, is word order.[1] Beginning with Greenberg 1963, it has been common to talk about word order using expressions such as "X is an SOV language", where "S" represents "subject", "O" represents "object", and "V" represents "verb". Statements such as this are based on an assumption of comparability, an assumption that all languages manifest the categories represented by "S", "O", and "V" (among others), and that word order in all languages can be described (and compared) using these categories. Hawkins (1983:11) makes the assumption of comparability explicit: 'We are going to assume that the categories of subject, object, verb, adjective, genitive, noun, adposition, etc. whose basic ordering we are going to study, are comparable across languages'. Hawkins assumes (following Greenberg) that 'semantic criteria will suffice to make the cross-linguistic equation' (ibid.). That is, the assumption is either that there are cross-linguistic grammatical categories instantiated in all languages that can be identified using semantic criteria (basically translation equivalents), and that there are universal principles based on these cross-linguistic grammatical categories underlying the organization of the clause in all languages, or that grammatical categories can be ignored in describing word order, as semantic categories will suffice (here assuming that "S" and "O" represent semantic categories equivalent to "S + A" and "P" respectively), and again, that the same principles, based on these semantic categories, underlie word order in all languages.[2] These assumptions have affected much of the work done on word order typology[3], syntax, and grammatical description in the last forty years, even though a number of scholars have talked about problems with the comparability assumption (e.g. Schachter 1977; Dixon 1980; Blansitt 1984, Nichols 1984, 1986; Foley and Van Valin 1984; Van Valin 1985, 1986; Lehmann 1986; Dryer

1986, 1988a, 1992, 1997; LaPolla 1993, 2002, 2003). Even the discovery of the famous "non-configurational" languages (e.g. Walbiri [Hale 1981, 1983] and Dyirbal [Dixon 1972]) and ergative syntax (Dixon 1972, 1979, 1994) did not shake the foundations of these assumptions.

In this paper we would like to argue that there are no universal categories of grammatical relations instantiated in all languages, and the principles that determine word order are not the same for all languages, and so we should not assume comparability across languages based on semantics. We should also not ignore the grammatical categories that have grammaticalized in a language and the possible role they play in determining word order (as grammaticalized categories) in that language. Each language is a unique set of language-specific conventions, and so each language should be described in its own terms (LaPolla 2003). That is, when describing a language, we should not assume that there are universal categories of grammatical relations, and that word order in all languages can be explained using them, for example making statements such as "X is an SOV language"; we should describe for each language the principles that determine the word order patterns found in that language.[4] Following we will take English, Chinese, and Tagalog as examples of languages where the organization of the clause follows different principles.[5]

2. The grammatical organization of the clause in English

To explain the principles that determine word order in English, we will need to talk about Finite and Subject.[6] The Finite element expresses the tense and often modality. The Subject specifies the entity about which the proposition is making an arguable statement. There is a grammaticalized subject-predicate relation which is distinct from, and much tighter than, a topic-comment relation. Non-Subject arguments can precede the Subject (appearing as Theme[7]), but no arguments can appear between the Subject and the predicate; unless it appears as Theme, the direct object must follow the verb, and is defined partly by its postverbal position. Subject and Finite both appear obligatorily in preverbal position, and can be identified by adding a tag question to the end of the clause (where the finite has reversed polarity):

(1) *You did lock the door, didn't you?*

(2) *Those guys wouldn't come back, would they?*

Relationship of Subject and Finite to clause type:

In English, the appearance/non-appearance and the order of Subject and Finite mark the mood of the clause. If there is no finite in the clause, then the mood is imperative:

Table 1. No finite = imperative

	(No) Subject	No Finite	
(3)			*See him later today.*
(4)	*You*		*come tomorrow.*
(5)			*Stop by some time!*

If the Subject and Finite are both present in the clause or are easily recovered from the co-text, then the clause is in the indicative mood, and the order of Subject and Finite determines the grammatical form of the clause as (indicative-)declarative or (indicative-)interrogative:

Table 2. Subject before Finite = declarative

	Subject	Finite	
(6)	*I*	*will*	*see him later today.*
(7)	*You*	*can*	*come tomorrow.*
(8)	*The chairman*	*is*	*busy today.*

Table 3. Finite before Subject = yes/no interrogative

	Subject	Finite	
(6')	*Will*	*I*	*see him later today.*
(7')	*Can*	*you*	*come tomorrow.*
(8')	*Is*	*the chairman*	*busy today.*

In a WH-interrogative, the WH-word appears as Theme obligatorily, marking not only that the clause is interrogative, but also what type of information is being asked for. If the WH- element is the Subject, then the order of Subject and Finite is Subject before Finite, in order to keep the WH- element as the Theme, but otherwise the order is Finite before Subject:

Table 4. WH-interrogative with WH-element as Subject

	WH-Subject	Finite	
(6'')	*Who*	*will*	*see him later today*.
(7'')	*Who*	*can*	*come tomorrow*.
(8'')	*Who*	*is*	*busy today*.

Table 5. WH-interrogative with WH-element as other than Subject

		Finite	Subject	
(9)	*What*	*will*	*he*	*bring to the party*
(10)	*Where*	*has*	*my doggie*	*gone?*
(11)	*When*	*can*	*I*	*see him?*
(12)	*Whose dog*	*is*	*he?*	
(13)	*Who*	*are*	*they?*	

Word order in English then is used on the one hand to mark certain grammatical relations, and also to mark the mood of the clause.[8] Although there are certain elements that are obligatorily thematic, English is not a "fixed" word order language: the word order is used for the grammatical purposes just mentioned, and so a difference in word order means a difference in the interpretation of grammatical relations or mood. The term "subject" is a useful one for English because English has grammaticalized the same sort of pivot[9] in a large number of constructions in the language; one of these constructions is the clause itself. For this language, then, it may seem to make sense to talk of SVO word order, as there is a grammatical relation of Subject, and it is mainly defined by preverbal position in the clause, and there is also a grammatical relation of direct object, and this is mainly defined by postverbal position in the clause (conversely we could say that the grammatical relations determine the word order), but the concepts of "subject" and "direct object" have no cross-linguistic validity. Even if we were to use these terms to define some grammatical category in all languages, the definitions would all be language-specific, and so simply using the term "subject" would not tell you what the author meant by the use of the term, what the nature of the category is, or to what extent those categories determine the word order. For example, we might say that Dyirbal (Dixon 1972) has a Subject, as there are a number of constructions that share the same sort of pivot, but that pivot is an [S,P] pivot, not an [S,A] pivot as in English, and the pivot is

not defined by and does not determine word order. Using semantic equivalence to talk about Dyirbal word order would cause us to miss the pivots of that language and to be misled into thinking not only that there are [A,S] pivots in the language, but also that these imagined pivots determine the word order. (An inherently definitional relationship between word order and grammatical relations is evoked once we start using the categories "S" and "O" in talking about word order.) Even if a language has a set of [A,S] pivots, the set may not be the same as in other languages with [A,S] pivots. For example, Italian has an [A,S] pivot for some of the same constructions as English, but not for cross-clause co-reference in coordinate clauses (e.g. *John hit Bill and cried).* Therefore even for English the "SVO" type of characterization should be avoided.[10] What we should do when describing a language is list the particular pivots found (if any) in the language (they may not all be of one type – Dixon (2000) shows that Jarawara, an Amazonian language, has two pivot possibilities, neither derived from the other, and Van Valin (1981) shows that Jacaltec, a Central American language, has a mixed set of pivots), and what constructions manifest them, for example in English to say there is an [A,S] pivot for the basic clause structure, for cross-clause co-reference in coordination, and for "raising", but not for relative clauses. Independent of the statement of pivots, we need to talk about the principles that determine word order in the clause. In the case of English, the order of phrases (not words) in the clause is to a large extent determined by this pivot, with the pivot preceding the verb, while non-pivot arguments follow the verb.

2. The grammatical organization of the clause in Chinese

Herbert A. Giles, in the preface to his dictionary of Chinese (1892:x), used expressions such as 'that elusive mysterious quiddity' when referring to the organizational principles of Chinese discourse. He said "... Chinese is essentially *supra grammaticam*". In fact the organization of Chinese discourse is not so 'elusive' or 'mysterious', it is simply different from the Indo-European languages in that Chinese has not grammaticalized the same types of mechanisms (such as use of word order, case marking, verb agreement, tense marking, cross-clause co-reference pivots) for obligatorily constraining the identification of referents, the particular semantic relation of a referent to the action it is involved in, the identification of the temporal location of the event mentioned relative to the speech act time, and certain

other functional domains. That is, the hearer must rely on relatively unconstrained inference in determining the speaker's communicative intention. This is what Wilhelm von Humboldt meant by saying that Chinese 'consigns all *grammatical form* of the language to the *work of the mind*' (1863[1988]: 230; italics in original).

A number of Chinese scholars have understood the difference in the organizational structure of the Chinese clause. Y. R. Chao (1968:69–70) saw clearly that the principles involved in the structure of the clause in Chinese were not the same as in English. Although he used the terms "subject" and "predicate", they were defined in Chinese-specific terms as simply topic and comment, with no necessary association of subject with actor or any other semantic role. Because of this, he argued that "A corollary to the topic-comment nature of predication is that the direction of action in an action verb in the predicate need not go outward from subject to object. Even in an N-V-N´ sequence, such as [gǒu yǎo rén (dog bite man)], it is not always certain that the action goes outward from N to N´." (p. 70). Chao gave the following examples of the looseness of topic-comment logical structure relative to subject-predicate (1968:71; recast in *pinyin* and with my glosses):[11]

(14) *tā* *shì* *ge* *rìběn* *nyǔrén.*
3sg COPULA CL Japan woman
'His servant is a Japanese woman.'

(15) *tā* *shì* *yī-ge* *měiguó* *zhàngfu.*
3sg COPULA one-CL America husband
'She is (a case of being married to) an American husband.'

(16) *nǐe* *(de* *xiézi)* *yě* *pò-le*
2sg (ASSOC shoe) also broken-CSM
'You(r shoes) are also worn through.'

(17) *wǒ* *(de* *qiānbǐ)* *bǐ* *nǐ* *(de)* *jiān.*
1sg (ASSOC pencil) COMPAR 2sg (ASSOC) pointy
'I am (my pencil is) sharper than you(rs).'

Chao (1955, 1959) argued that word order is not determined by, and does not affect the interpretation of actor vs. non-actor; he saw the clause as analogous to a function in logic: the argument is an argument of the function, and the truth value is unaffected by its position in the clause (1959:254). He said there are no exceptions to topic-comment order in Chinese, though there are some clauses that only have comments (e.g. *Xià yǔ le* (fall rain CSM) 'It's raining').

Like Chao, Lü Shuxiang, another eminent Chinese syntactician, defined "subject" as "topic", whatever comes first in the sentence, which can have any semantic role (1979: 72–73). He argued that since "subject" and "object" can both be filled by any semantic role, and are to a certain extent interchangeable, then we can say that subject is simply one of the arguments of the verb that happens to be in topic position. One of the examples of what he meant by "interchangeable" is [chuānghu yǐjīng hú-le zhǐ (window already paste-CSM paper)] 'The window has already been pasted with paper' vs. [zhǐ yǐjīng hú-le chuānghu (paper already paste-CSM window)] 'The paper has already been pasted on the window'. Lü gave the analogy of a committee where each member has his or her own duties, but each member can also take turns being chairperson of the committee. Some members will get to be chairman more than others, and some may never get to be chairman, but each has the possibility of filling both roles.

Li and Thompson (1978: 687) recognized that 'word order in Chinese serves primarily to signal semantic and pragmatic factors rather than grammatical relations such as subject, direct object, indirect object' (see also Li and Thompson 1975, 1981: 19), but their idea of Chinese as "topic-prominent" (Li and Thompson 1976) was not as radical a departure from the English-based conception of clause structure as Chao's.

It is not possible to define "subject" and "object" in terms of word order in Chinese, or to say that word order is determined by "subject" and "object".[12] For example, in (18)-(20), the same word order has multiple interpretations. In (18) and (19) we have what is often be described as "SVO" word order, but the interpretations possible show that such a characterization is misleading, as the interpretation is not necessarily AVP.

(18) *Zhāngsān* *xiǎng-sǐ* *wǒ* *le.* (adapted from Pan 1998)
PN think-die 1sg CSM
a. 'Zhangsan missed me so much that he nearly died.'
b. 'I missed Zhangsan so much that I nearly died.'

(19) *Méi-yǒu* *rén* *kěyǐ* *wèn* *wèntí.* (attested example)
NEG-exist person can ask question
a. '(There is) No one (who) can ask questions.'
b. 'There is no one to ask questions of.'

In (20) we have a very common pattern where two noun phrases appear before the verb, but no constraint on the interpretation of the semantic roles of the two referents is imposed on the clause by the syntax, as it would be in English.

(20) *Zhè-ge* *rén* *shéi* *dōu* *bù* *rènshì.* (Chao 1968:325)
this-CL person who all NEG know
a. 'This person doesn't know anyone.'
b. 'No one knows this person.'

In (21) are more examples of the "interchangeable" nature of many clauses in Chinese discussed by Lü (1979).[13] The difference in interpretation in Chinese with the different word orders is not one of actor vs. patient, but in terms of what is the topic and what is not the topic.

(21) a. *shuǐ* *jiāo* *huā*
water(n.) water(v.) flower
'The water waters the flowers'

a´. *huā* *jiāo* *shuǐ*
flower water(v.) water(n.)
'The flowers are watered by the water'

b. *lǎotóuzi* *shài* *tàiyáng*
old.man sun(v.) sun(n.)
'The old man basks in the sun'

b´. *tàiyáng* *shài* *lǎotóuzi*
sun(n.) sun(v.) old man
'The sun shines on the old man'

In English, the interaction of Theme-Rheme structure and Subject-Finite structure explain much about word order (see for example the sentence *Who are they?* in (13)). Another factor involved in the organization of the clause is information structure (as discussed in Lambrecht 1994).[14] This is the distribution of the topical and focal elements of the clause. Essentially, topical elements are elements within the pragmatic presupposition, what we are talking about, as topics, or parts of the total message we can take for granted (as they were mentioned before, commonly known, or can be inferred from context). The focal element is the part that we cannot take for granted, and so must be supplied by the speaker. The combination of these two elements is what makes a clause a piece of new information. This is independent of the activation status of referents as identifiable or not in the mind of the addressee. In English, information structure is marked more often by a change in intonation, as word order is marking grammatical relations and mood. In Chinese, there is no Subject-Finite structure, and there are few elements that are obligatorily thematic; the word order is determined by the following principle of information structure:[15]

> **The principle of word order in Chinese**: 'Topical or non-focal NPs occur preverbally and focal or non-topical NPs occur post-verbally.' (LaPolla 1995a: 310)

The structure of the Chinese clause is then quite different from that of the English clause. In English the grammaticalization of the constraints on referent identification we lump together under the names "subject" and 'direct object' have led to there being tight logical relations between those particular referents and the predicate. Other referents which are mentioned can only be added through the modulation of minor processes (prepositions), and so are clearly marked as peripheral. The conception of the clause for speakers of English and similarly structured languages is based on these relations, and has implications outside of language (e.g. the development of Aristotelian logic).[16] In Chinese the conception of the clause is based simply on a function-argument type of loose relationship, with the topic-comment relation being the main determinant of word order, without regard to obligatory explicit marking of the semantic or grammatical relations of the referents involved. The difference between the two conceptions of the clause is particularly clear when we look at

examples such as (22) (from *Rúlín Wàishǐ*, an early 18th century vernacular novel):

(22) (a) *Yuán cháo mò nián, yě cēng*
PN dynasty end year also EXP
chū-le yī-ge qiànshíliěiluò de ren.
emerge-CSM one-CL honest.and.upright ASSOC person
'At the end of the Yuan dynasty, there appeared an honest and upright person'

(b.1) *Rén xìng Wáng,* (b.2) *míng Miǎn*
person surnamed PN given.named PN
'(This) person was surnamed Wang, and had the given name Mian,'

(b.3) *zài Zhūjì-xiàn xiāngcūn jūzhù;*
LOC PN-county countryside live
'(he) lived in the countryside of Zhuji county'

(b.4) *qī suí shí sǐ-le fuqīn*
seven years.old time die-CSM father
'when he was seven his father died'

(c.1) *tā mǔqīn zuò xiē zhēnzhǐ,*
3sg mother do some sewing
'his mother did some sewing'

(c.2) *gōngjǐ tā dào cūn xuétáng-lǐ qù dúshū.*
supply 3sg ALL village school-in go study
'to give him money to go to the village school to study.'

This is a very typical stretch of Chinese narrative text. The first clause introduces a new referent, then this referent becomes the topic of the following four clauses. A related referent is then the topic of the next two clauses. The structure of all the clauses except the first is "topic-comment". The first clause is presentative, a "sentence focus" construction (Lambrecht 1994; LaPolla 1995a), and so does not have a topic (the temporal expression locates the event in time, but is not the topic of the predication). The clause in (22b.4) also follows the usual "topic-comment" structure, but many scholars have analyzed this structure as being aberrant because the NP representing the one who died appears *after* the intransitive verb *sǐ* 'die'. They say it is aberrant because they are assuming a subject-predicate

structure for the clause. Assuming that word order defines subject and object would force us to say that *sǐ* 'die' is a transitive verb, *rén* 'person' (= Wang Mian) is the subject and actor, and *fùqīn* 'father' is the object and patient, clearly an inappropriate analysis. The type of clause in (22b.4) is actually not a special exceptional type of clause; the form of this clause follows naturally from the factors that determine word order in Mandarin: the nature of elements being focal (or at least non-topical) vs. topical (or at least non-focal).

The clause form in (22b.4) involves two parts, a topic and a comment. What seems to make this clause unusual is that the comment takes the form of an event-central presentative clause. Event-central presentative clauses assert the existence (happening) of an event. These clauses do not have a two-part topic-comment structure; they are thetic rather than categorical. An example in Chinese is *Xià yǔ le* (fall rain CSM) 'It's raining'. As in this example, if there is an NP in an event-central clause, it must appear in post-verbal position for the clause to have the event-central interpretation. The NP is often non-referential (e.g. *yǔ* 'rain' in the example just given), but it may be referential (e.g. *fùqīn* 'father' in (22b.4)), even a proper name. What is important is that it not be interpreted as a topic of a categorical statement. That is why the NP has to appear in post-verbal position, to prevent such an interpretation.

An event-central expression can also appear as the comment in a topic-comment structure. In these cases, generally the topic is the possessor of, or is in some way related to, the NP in the event-central expression, as in (22b.4). In (22b.4), *fùqīn* 'father' is made non-topical by being placed in postverbal position. This is done so that the dying of the father can be expressed as an event-central statement, which is then asserted of the topic. Were *fùqīn* 'father' to appear in preverbal position, as in *Wáng Miǎn de fùqīn sǐ-le* (PN ASSOC father die-CSM) 'Wang Mian's father died', the clause would be a categorical statement about the topic 'Wang Mian's father', that he died. That is, though this clause and (22b.4) seem similar, they are in fact saying quite different things.

Two other common word order patterns in Chinese are problematic if we try to apply a subject-predicate analysis, but are easily explainable with an information structure analysis: the double topic construction (Teng 1974) and the split referent construction. In the double topic construction the referents of two independent NPs have some relationship to each other, usually possessor-possessed or whole-part. The possessor or whole is the primary topic, and the possessed or part is a secondary topic:

(23) a. *Wǒ dùzi è le.*
1sg belly hungry CSM
'I'm hungry.'

b. *Wǒouteg....g..*
1sg head hurt
'I have a headache.'

c. *Nèi xiē píngguo pí yǐjīng xiāo-hǎo-le*
that few apple skin already peel-COMPLETE-CSM
'Those apples (I/you/he) already peeled.

In this type of double topic construction, the main topic ('1sg' in [23a-b]) is semantically the possessor of the secondary topic ('belly'/'head'), but it is not grammatically marked as such, as the secondary topic is pragmatically incorporated into the comment about the main topic. Within this comment there is also a topic-comment structure, with a comment about the secondary topic, i.e. the structure is [Topic [Topic Comment]$_{comment}$].[17,18]

In the split referent construction[19] there is the same sort of semantic relationship between the referents of two NPs, and the possessed element or part is incorporated into the comment about the topic, but rather than appearing as a secondary topic, the possessed element or part appears in a non-topic position:

(24) *Nèi xiè píngguó yǐjīng xiāo-hǎo-le pí.*
that few apple already peel-COMPLETE-CSM skin
'Those apples (I/you/he) already peeled.

In fact the structure of (24) is the same as that of (22b.4). With an information structure analysis we can see the principles underlying the three constructions and easily explain their structures and occurrence in discourse. This would not be possible with an explanation of word order based on grammatical relations.

Notice that we are not saying that if we did a count of clauses in Chinese texts we would not find that in a large number of clauses, possibly even the majority of clauses, an actor appears before the verb and/or a patient appears after the verb. What we are saying is that to characterize the pattern found as "SVO" (or Chinese as an "SVO" language) would be incorrect, as it is not the case that what is determining the word order pattern is one referent being "S" and one referent being "O" (with their

grammatical statuses determined by their position or their position determined by their grammatical statuses). In fact given the pragmatic principle for determining word order in Chinese, we would expect to find actors more frequently before the verb and patients more frequently after the verb, as cross-linguistically actors are more often topical, while patients are more often focal. It is the pragmatic nature of the actor as topic that results in the NP referring to the actor often appearing in clause-initial position, and the pragmatic nature of the patient as focal that results in the NP referring to the patient often appearing in post-verbal position. That is, the fact that they were actors and patients may have led to them being more topical or more focal, but the fact of being actors or patients in and of itself is not what made them appear in preverbal or postverbal position. When we describe Chinese then, we should say that Chinese clauses are often (though not obligatorily) verb medial, as NPs representing topical and non-focal referents appear before the verb and focal and NPs representing non-topical referents appear after the verb, with the position of any NPs appearing in the clause (none are obligatory) before or after the verb being based on their nature as topical or as part of the focus respectively.

3. The grammatical organization of the clause in Tagalog

Tagalog (Austronesian; the Philippines) has grammaticalized a type of pivot in many constructions, but word order in the clause is not determined by (and does not determine) grammatical relations. The ability to appear as pivot is also not restricted to one or two types of argument, as it is in many languages; even semantically peripheral arguments can appear as pivots. The argument that is the topic (what the clause is a statement about) appears as the pivot. In the examples in (25) the pivot argument is in bold:

(25) a. (actor pivot)

Kumain	*ng*	*kanin*	***si***	***Maria***	*sa*	*mesa.*
eating-AP	GEN	rice	SPEC	Maria	LOC	table

'**Maria** ate rice at the table.'

b. (undergoer pivot)

Kinain	*ni*	*Maria*	***ang***	***kanin***	*sa*	*mesa*.
eating-UP	GEN	Maria	SPEC	rice	LOC	table

'**The rice** was eaten by Maria at the table.'

c. (locative pivot)

Kinainan	*ni*	*Maria*	*ng*	*kanin*	***ang***	***mesa***.
eating-LP	GEN	Maria	GEN	rice	SPEC	table

'**The table** was used as an eating place by Maria.'

d. (instrumental pivot)

Pinangkain	*ng*	*kanin*	*ni*	*Maria*	***ang***	***kamay***.
eating-IP	GEN	rice	GEN	Maria	SPEC	hand(s)

'**Hands** were used for eating by Maria.'

Unmarked word order is generally predicate initial. The predicate can be any form class.[20] The order of the arguments that appear in the clause, both semantically required arguments and peripheral arguments, is determined by the form the argument takes (pronoun or noun) and whether the argument is within the focus or not. This is expressed in the word order by being before or after the pivot argument respectively. The "heaviness" (length and complexity) of an argument can also affect its position, with heavy *ng*-marked arguments occuring after a "light" *ang*-marked argument. The examples just given appear with a particular order, but many other orders would be possible. For example, (25a) could also have the following orders (among others), with no difference in the interpretation of grammatical relations:

(26) a. *Sa mesa kumain ng kanin si Maria*.
b. *Kumain sa mesa ng kanin si Maria*.
c. *Kumain si Maria ng kanin sa mesa*.
d. *Kumain sa mesa si Maria ng kanin*.

In the examples in (25) we have actor pivot, undergoer pivot, locative pivot, and instrumental pivot clauses, respectively, all based around the root *kain* 'eating'. The affixes that the root acting as predicate takes and the

article before the pivot argument both point to a particular argument as being the pivot. The affixes on the root inform us of the semantic role of the pivot. In these examples the infix *-um-* occurs in the actor pivot clause and *-in-* occurs in the (realis perfective) undergoer pivot clause. The latter infix also occurs in the (realis perfective) locative and instrumental pivot clauses, together with the *-(h)an* suffix in the locative clause and the instrumental adjective-forming *pang-* prefix in the instrumental clause. At the same time, the pivot argument is marked with the article *si*, where it is a singular proper name, or *ang*, where it is a common noun. The non-pivot core arguments take the article *ni* if they are singular proper names or *ng* [nɑŋ] if they are common nouns. The non-pivot semantically locative and oblique arguments take prepositions that mark their semantic roles. There is no marking of semantic role for actor and undergoer, only marking of their status as topical (the pivot) or not. In these constructions there is foregrounding of a particular argument as topic, but there is no backgrounding of any other argument in the sense of changing an argument's status as a core argument or its ability to appear overtly in the clause. The passive English translations given for these clauses then are somewhat misleading, as the non-pivot actor is still very important to the clause. If we look at, for example, (25c), this might become clear. This sentence might be used in a situation such as the following:[21]

(27) Q: *Bakit* *ma-dumi* ***ang*** ***mesa****?*
why STAT-dirtiness SPEC table
'Why is **the table** dirty?'

A: *Kasi,* *kinainan* *ni* *Maria* *ng* *kanin*
because eating-LP GEN Maria GEN rice
(ang ***mesa)****.*
SPEC table
'Because **the table** was used as an eating place by Maria.'

To achieve the same sense of importance in the clause, in English we would be more likely to say *Because MARIA ate there*, with focal stress on Maria, rather than use a passive construction. In the Tagalog as well, *ni Maria* is within the focus of the assertion, not a backgrounded or incidental constituent.[22]

Another important reason we would say the passive translations are inappropriate is that there is no derivational relationship or markedness difference between the actor focus and the other focus constructions. All are derived; there is no "basic" form, they are simply different ways of profiling an event.[23]

It is also possible to have a benefactive pivot in a Tagalog clause. Example (28a) is an actor pivot clause with an oblique benefactive argument marked by the benefactive preposition *para kay*, while (28b) has the benefactive argument as the pivot.

(28) a. *Nagluto* ***si*** ***Maria*** *ng* *kanin* *para kay* *Juan*.
cooked-AP SPEC Maria GEN rice BEN Juan
'**Maria** cooked rice for Juan.'

b. *Pinagluto* *ni* *Maria* *ng* *kanin* ***si*** ***Juan***.
cooked-BP GEN Maria GEN rice SPEC Juan
'**Juan** was cooked rice by Maria.'

The pivot can also appear in sentence-initial position before the verb when the predicate is marked by *ay*. This form emphasizes the topical nature of the pivot argument.

(29) a. ***Si*** ***Maria*** *ay* *kumain* *ng* *kanin* *sa* *mesa*.
SPEC Maria PM eating-AP GEN rice LOC table
'**Maria** ate rice at the table.'

b. ***Si*** ***Juan*** *ay* *pinagluto* *ni* *Maria* *ng* *kanin*.
SPEC Juan PM cooked-BF GEN Maria GEN rice
'**Juan** was cooked rice by Maria.'

One of the controversies surrounding the system of pivot alternations in Tagalog is the nature of the pivot. While it is the target of several syntactic processes, such as relativization, and the choice of pivot is influenced by discourse factors such as identifiability, referentiality, and topicalness, it does not always control cross-clause coreference and imperatives. The first two examples in (30) differ in terms of which argument is the pivot, yet

unless there is some context that makes it very clear that in (30a) it is Juan that went out, cross-clause coreference is controlled by the actor in both clauses.

(30) a. *Binigyan* *ng* *pera* *ni* *Maria* ***si*** ***Juan*** *at*
gift-BF GEN money GEN Maria SPEC Juan and
lumabas.
go.out
'**Juan** was given money by Maria and (she) went out.'

b. *Nagbigay* *ng* *pera* *kay* *Juan* ***si*** ***Maria*** *at*
gift-AF GEN money DAT Juan SPEC Maria and
lumabas.
go.out
'**Maria** gave money to Juan and (she) went out.'

Only with the pivot in initial position, and marked by the predicate marker, as in (30c), which is a marked construction, will a non-actor pivot definitely control cross-clause coreference:

c. ***Si*** ***Juan*** *ay* *binigyan* *ng* *pera* *ni* *Maria*
SPEC Juan PM gift-BP GEN money GEN Maria
at *lumabas.*
and go.out
'**Juan** was given money by Maria and (he) went out.'

Another problem is related to the fact that all of the pivot-marked forms are derived: as there is no 'basic' form, what are we to say is the alignment of the pivot? Clearly the pivot in Tagalog cannot be equated with "subject" in English or "S" in the sense of word order typology, and even if we were to ignore the pivot and assume that "S" is equivalent to actor, as word order is pragmatically controlled, there is no sense we could say Tagalog is VSO or VOS.[24]

To properly describe word order in Tagalog, then, we should say that generally (though not obligatorily) the clause is predicate-initial, and the position of an NP is determined by its nature as pronominal or lexical

(pronominal forms being second-position clitics), and by the pragmatic status of the referent of the NP. If the referent of the NP is not part of the pragmatic presupposition, the NP will generally form a constituent with the predicate, and so generally (though not obligatorily) will follow the predicate but precede the pivot NP. If the referent is part of the pragmatic presupposition, then if it is the topic it will be represented as the pivot NP (assuming a lexical NP appears in the clause – this is not obligatory), and if it is not the topic, it will appear after the pivot NP.

Conclusions

We have seen that the principles that determine word order for each language discussed are unique to those languages, even if there are some aspects that might be similar across languages.[25] Differences among the uses of word order in different languages are also not discrete; there is immense variation. For example, English and Italian both might be said to have grammaticalized subject as a grammatical category, if we assume subject is a cross-linguistic category, and both languages have been described as "SVO" languages, but the degree to which grammatical relations determines word order is different. If one of us wants to tell the other the news that Randy's brother Johnny called, we would say in English *JOHNNY called*, with stress on *Johnny*, to show the eventive nature of the utterance. In Italian, while word order is not as pragmatically determined as in Chinese, the word order of this utterance would be different from that of English, and more like Chinese (to get the eventive interpretation): *Ha telefonato Gianni.*

It is then problematic to assume that word order in all languages can be described using concepts such as "SOV" or "SVO", etc. that assume universal principles for the determination of word order. If we make the assumption of cross-linguistic comparability, we miss important facts about the principles that are involved in the structures of the languages and about the differences among languages, and are led to forced analyses which cannot explain the patterns found (such as trying to force example (22.b4) into a subject-object analysis). We need to describe the principles that determine word order in each language we describe. We are not saying comparison can't be done. What we are arguing for is for a more rigorous way of describing languages and of doing typological comparison. We can make much more detailed and careful statements about what principles are

determining word order in each language, and we can compare the languages using those more detailed descriptions, such as talking about what pivots have developed and how they influence constituent order, or in what ways information structure influences word order.[26]

Notes

1. As R. M. W. Dixon has frequently pointed out (personal communication), the term "word order" is something of a misnomer, as what is usually talked about under this heading is the order of constituent phrases, not individual words.
2. Dryer (in comments on a draft of this paper) takes something of a middle path, arguing that 'there is a sharp distinction between what notions are relevant to classifying languages typologically and what notions are relevant to describing individual languages', that is, that description of individual languages should be done using language-specific categories, but typological classification of languages can be done using just the semantically-defined notions.
3. LaPolla (2002) discusses problems with the universals that have been developed based on this methodology and the explanations for them.
4. The assumption of a clause with two full NPs as the basic clause type is problematic as well, as this type of clause has been shown to be relatively rare and marked in natural discourse. For example, Lambrecht (1987) argues that SVO word order in French is actually a minor and marked word order (see also Du Bois 1985, 1987; Lambrecht 1994; Hopper 1986; Jacobsen 1993). Due to this fact, and others, Dryer (1997b) argues that instead of using the six-way typology of SOV, SVO, VSO, etc., we should use two separate two-way typologies, OV vs. VO and SV vs. VS.
5. The category of verb is also not a universal category; word classes are defined purely in language-specific morphosyntactic terms, but due to space limitations the discussion here will be limited to grammatical relations and the organizational principles of the clause. See Himmelmann (forthcoming) for an example of a language that does not have a category equivalent to English verbs.
6. Although the terms "Finite" and "Subject" are often used as if they are cross-linguistic categories in the linguistics literature, we are here using them as technical terms, and are defined as purely English-specific phenomena. The analysis and the terms are from Halliday (1994).
7. Put very briefly, the Theme is the starting point of the message, relative to which the rest of the message is interpreted, and contrasts with the Rheme, the rest of the clause. In English there are certain elements, such as interrogative

pronouns, certain subordinators, and conjunctions, that are obligatorily thematic, and this influences interpretation. Languages differ in terms of what, if anything, is obligatorily thematic. This is another important, yet unexplored, aspect of word order typology.

8. This is at least partly why English requires an overt Subject in each clause. Simply saying a language is or is not a "pro-drop" language also does not tell us anything, as we would want to know in which contexts pronouns are not used or are not obligatory, and why pronouns are or are not obligatory in certain contexts.
9. Briefly, a pivot is a noun phrase that is singled out for special treatment in a construction; it involves a restricted neutralization of semantic roles for the purposes of constraining the identification of referents. Pivots are construction-specific, neutralizing A and S or P and S (Dixon 1972, 1979; we use "P" here instead of "O" for the semantic role, as "O" is being used for the grammatical relation). A language may or may not show evidence of pivots, and may grammaticalize different kinds of pivots in different constructions. (See Van Valin and LaPolla 1997, Ch. 6).
10. Dryer 1997 is an excellent criticism of the idea of grammatical relations as a cross-linguistic phenomenon. Dryer argues we should treat grammatical relations the same as other language-specific categories, such as the word and individual phonemes. That is, we would not just say 'There are words in language X', but would give the language-specific definitions for the different types of words found in the language. He mentions word order as another language-specific phenomenon, but does not give detailed arguments. Croft (2001), to some extent following Dryer, also argues against universal notions of grammatical relations (and many other types of structure), but again does not discuss the question of word order universals.
11. Abbreviations used: ALL allative, AP actor pivot, ASSOC associative, BP benefactive pivot, CL classifier, COMPAR comparative, CSM change of state marker, EXP experiential, IP instrumental pivot, LP locative pivot, NEG negative, PM predicate marker, PN proper name, STAT stative, SPEC specific article, UP undergoer pivot.
12. Textbooks on typology, e.g. Whaley 1997, often cite Chinese as an example of a language that marks grammatical relations using word order, but this is incorrect.
13. The two NPs in (18) could also be "interchanged" with no change in the two possible meanings.
14. See also Lambrecht 1987; Herring 1989, 1990; LaPolla 1995a; Van Valin and LaPolla 1997, Ch. 5 on the relationship between information structure and word order.
15. Very often in discussions of Chinese two different types of information relevant to referents, identifiability and topical/focal nature, are confused, and

so it is assumed that word order marks "definiteness" in Chinese. See LaPolla 1995a for arguments why this is not the case.

16. Mei Tsu-lin (1961:153) argued against the traditional doctrine that saw the subject-predicate distinction in grammar as parallel to the particular-universal distinction in logic, as he said it was a reflex of an Indo-European bias, and could not be valid, as 'Chinese ... does not admit a distinction into subject and predicate' (in the Aristotelian sense).
17. The famous *bǎ* construction also has a structure like this. The particle *bǎ*, which marks the major topic-comment division in clauses where it is used, developed to disambiguate non-agentive non-focal elements appearing in preverbal position as secondary topics (see Chao 1968:74–75).
18. In Chinese we often find verb-final clauses with two NPs before the verb, but the verb-final structure that results does not have the same pragmatic structure as unmarked focus structure in verb-final languages, such as many of the Tibeto-Burman languages, as both NPs are non-focal. In the Tibeto-Burman languages that do not use word order to mark semantic or grammatical relations, the unmarked focus position is immediately before the verb, and so most often a NP-NP-V structure will be simple topic-comment, with the second NP being within the focus and not a secondary topic. Incidentally, it is because these languages do not use word order to mark semantic and grammatical relations that we often find the development of agentive and/or anti-agentive marking (LaPolla 1992, 1994, 1995b).
19. In the past, this construction was often (inappropriately) called the "retained object" construction.
20. Lazard (1999) uses the term "omniprédicative" for languages like Tagalog; Himmelmann (forthcoming) while establishing two morpho-lexical form classes, argues that there are no form class distinctions relevant to syntactic position.
21. In Tagalog there are two sets of pronouns, one which is similar in distribution to the *ang*-marked form of the noun, appearing as pivot and for specific referents, and one which has the same distribution as the *ng*-marked forms, appearing as non-pivot and genitive pronoun. The pivot pronouns are called "*ang* pronouns", as they take the place of the argument that would otherwise take the *ang* article if it was a common noun. The pronouns are second-position clitics, and so can appear between elements of the predicate (effectively creating a discontinuous constituent). It is also possible for an understood topic to not appear at all in the clause. In the answer in (27), most probably 'the table' would be referred to with a zero pronoun or possibly an *ang* pronoun.
22. This is not to say a focal NP must not be the *ang* argument. In a cleft construction, the usual form for answering question-word questions, the predicate NP takes the *ang* article, or its equivalent for personal names, *si*.

E.g., in answer to the question 'Who cooked the rice?' the answer could be as in (i).

(i) *Si Maria ang nagluto ng kanin.*
SPEC Maria SPEC cooked-AP GEN rice
'The one who cooked the rice was Maria.'

In this construction the verb is nominalized by the *ang* article, so the whole construction is an equational clause made up of two NPs (there is no copula in Tagalog).

23. Himmelmann (2002) uses the term "valency-neutral alternatives" or "symmetrical voice system" for this type of system.
24. Given that the same marking *(ng)* is used for intra noun phrase relations and intra-clausal relations, it is possible to take the position, as Himmelmann (1991) and Lazard (1999) have done, that all clauses in Tagalog are equative clauses. If this were proven to be the case, it would be an even more radical departure from the conception of all clauses as being describable as "SOV", etc.
25. We might have also discussed Riau Indonesian, which Gil (1994) argues has a radically underspecified clause structure.
26. See Van Valin and LaPolla 1997, Chapter 5, for some discussion of differences in constituent order due to differences of information structure.

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Heterosemy and the grammar-lexicon trade-off

N. J. Enfield

1. Introduction

A fundamental task for the grammarian is to determine what will be listed in the lexicon, and what will be derived from this list by productive rules specified in the grammar. The balance of information between grammar and lexicon becomes – in principle – an economical trade-off. While a grammarian can theoretically make as many detailed distinctions as he or she likes, the description should capture useful generalisations in an accessible way. Ideally this will reflect natural relationships at higher levels within the linguistic system being described. The need to balance parsimony, accuracy and comprehensiveness, readability, and intuitive faithfulness to the genius of a language is what makes grammar-writing as much an art as it is a technical craft. This tension is exemplified by the problem to be discussed in this chapter, namely: How should the grammarian treat a morpheme which apparently has membership in more than one grammatical class?

2. Polysemy and heterosemy

If a morpheme is polysemous it has more than one meaning, where there is some significant overlap in semantic content between the meanings. An example is the English verb *fly*, meaning either 'propel oneself through air' or 'go very fast'. A special case of polysemy is termed *heterosemy* (Lichtenberk 1991, after Persson 1988), where the different but related meanings of a given morpheme are associated with distinct grammatical contexts. Examples from English are *father*, *walk*, *stone*, and *talk*, each of which have related noun and verb meanings. It is useful to distinguish between different logical possibilities for heterosemy with reference to the *open* versus *closed* form class distinction. When two grammatical classes

associated with a heterosemous word's multiple meanings are both open classes, this may be termed *open-class heterosemy*. The English verb *fly* is an example. When two grammatical classes associated with a word's multiple meanings are both closed classes, this may be termed *closed-class heterosemy*. An example is the English word *to*, which (among other things) marks a non-finite verb in a subordinate clause (*I want **to** go*), or a goal of motion in a prepositional phrase (*I went **to** London*). When the different grammatical classes associated with a word's multiple meanings are each of different status – one open, one closed – we may call this *cross-class heterosemy*. An example is English *have*, which occurs as a regular verb (*I have two bicycles*) and as an auxiliary verb (*I have sold my car*).

That lexical items can enter into alternations across word classes with no overt marking raises a fundamental question for the organisation of a descriptive grammar. Are these relationships derived by grammatical rule? We consider the issue with reference to examples from Lao (a Southwestern Tai language of Laos, Thailand, Cambodia) and other isolating languages of mainland Southeast Asia.

3. Open-class heterosemy: Noun-verb alternation in Lao culinary terms

There is a set of items in Lao each of which functions in one grammatical environment as a transitive verb meaning 'to prepare a certain food or ingredient in a certain way', and in another grammatical environment as a nominal denoting the dish so prepared. Compare two uses of the word *kèèng3* in the following:[1]

(1) *kuu3 siø kèèng3 paa3 too3 nii4*
1SG IRR fish CLF DEM.GEN
'I'm going to (make) soup (with) this fish.'

(2) *qan3 nii4 mèèn1 kèèng3 paa3*
CLF DEM.GEN COP fish
'This is fish soup.'

Lao noun phrases are head-initial. Thus, in the noun phrase *kèèng3 paa3* [soup fish] in (2), *kèèng3* 'soup' is the head, modified by *paa3* 'fish'. (It is also possible to use *kèèng3* 'soup; make soup' as a modifier of *paa3* 'fish'; this would give *paa3 kèèng3* [fish soup] 'fish for (making) soup' or 'fish [which has been] made into soup'.)

Here is a list of words which enter into the same alternation:

Table 1. Some items entering into a noun-verb alternation, where modified noun refers to 'dish prepared with ingredient x in a certain way', and transitive verb refers to 'preparing a dish with ingredient x in that way'

Term	Occurs as head noun (modified by ingredient name)	Occurs as transitive verb
khua5 'fry'	yes	yes
môk1 'bake in leaves'	yes	yes
qòq2 'make stew of'	yes	yes
ñam2 'make salad of'	yes	yes
kèèng3 'make soup of'	yes	yes
laap4 'make larb of'	yes	yes
cèèw1 'make chutney of'	yes	yes
tam1 'pound; make salad of'	yes	yes
tôm4 'boil'	yes	yes
nùng1 'steam'	yes	yes
qôp2 'broil/bake'	yes	yes
cùùn3 'shallow fry'	yes	yes
thòòt4 'deep fry'	yes	yes
piing4 'grill'	yes	yes
luak4 'parboil'	yes	yes

A grammarian may want to avoid listing these words separately with their noun and verb meanings, but instead derive one from the other with a generalising rule. One could list *kèèng3* as a noun meaning 'soup', and state that its use in a transitive verb frame derives a verb with the meaning 'to make soup from (something)'. To pursue this analysis for the whole set, one's statement of derivation would need to be valid for each alternating item. A problem is that, according to informants, some of the items in Table 1 refer 'basically' to a kind of dish (i.e. are 'basically nouns'), while others refer 'basically' to a manner of preparation (i.e. are 'basically verbs'). In other words, it is not clear that all items would have the same direction of derivation. Lao consultants regard *tôm4*, for example, as basically a verb meaning 'to boil something', and its meaning in a noun phrase like *tôm4 paa3* [boil fish] 'a dish made by boiling fish' is regarded as an extended sense. This division among items in Table 1 has grammatical consequences. While all of the items listed in Table 1 can appear as nominal heads taking a modifier which specifies the ingredient from which the dish was made, only half can appear as stand-alone nominals referring to a

certain dish whose main ingredient is unspecified. Compare *tôm4* 'boil' and *kèèng3* 'soup' in the following examples:

(3) *kuu3 siø kin3 tôm4 *(paa3)*
1SG IRR eat boil fish
'I'm going to eat (a dish of) boiled *(fish).'

(4) *kuu3 siø kin3 kèèng3 (paa3)*
1SG IRR eat soup fish
'I'm going to eat (fish) soup.'

Table 2 shows that about half these terms cannot be stand-alone nominal heads:

Table 2. Distinctions between items in Table 1, by occurrence as unmodified nouns

	Term	Occurs as free noun (e.g. as object of *kin3* 'eat')
'basically nouns'	*khua5* 'fry'	yes
	môk1 'bake in leaves'	yes
	qòq2 'make stew of'	yes
	ñam2 'make salad of'	yes
	kèèng3 'make soup of'	yes
	laap4 'make *larb* of'	yes
	cèèw1 'make chutney of'	yes
'basically verbs'	*tam1* 'pound; make salad of'	no
	tôm4 'boil'	no
	nùng1 'steam'	no
	qôp2 'broil/bake'	no
	cùùn3 'shallow fry'	no
	thòòt4 'deep fry'	no
	piing4 'grill'	no
	luak4 'parboil'	no

This issue is treated by Dixon (1991: 51) in a discussion of noun-verb alternations in English (cf. *walk*, basically a verb, versus *stone*, basically a noun), for which two possible analyses are raised. A first possibility is to allow that some nouns (e.g. *stone*) can be heads of verb phrases, and some verbs (e.g. *walk*) can be heads of noun phrases. "The other approach", writes Dixon, "is to say that the head of a VP can only be a verb, etc., and that English has derivational processes, with zero marking, that derive verbs from some nouns (verb *stone* from noun *stone*), and so on" (Dixon 1991: 51). The challenge in a grammatical description is to achieve a se-

mantic mapping between the noun and verb senses which is consistent across an entire class of alternating items. Dixon (1991: 52) suggests that some generalisations are possible. For example, 'many nouns referring to implements can also be used as verbs, e.g. *spear, knife, saw, hammer, whip, nail, screw*'. But this observation does not yet constitute the kind of grammatical generalisation which would genuinely reduce the burden on the lexicon. The semantic details of each alternation require further specification. Consider *knife* and *saw*. There are differences between the grammatical and semantic properties of these verbs in relation to their respective nominal counterparts. The verb *knife* has a more specific meaning than simply 'use a knife (to cut something)' (cf. *John knifed Bill* vs. **John knifed the onions*). The same issues arise with respect to the data in Table 1 above. It may be possible to make a generalisation to the effect that there is a set of words which function both as verbs and as nouns, such that the verb meaning refers to the action(s) involved in preparing a certain dish, and the noun meaning refers to the dish itself. However, as shown above, one does not have to look far before finding both formal and semantic differences among alternations in the list of terms.[2]

The descriptive problem of open-class heterosemy has spawned volumes of research (cf. Apresjan 1974, Jackendoff 1975, Clark and Clark 1979, Voorhoeve 1981, Dixon 1991, Levin 1993, Levin and Rappaport Hovav 1995, Vonen 2000, Croft 2001, inter alia). The point to be taken from the present discussion is that what appear to be regular heterosemous alternations can quickly turn out not to involve a homogeneous set of items, and the alternations observed are neither regular nor productive enough to be captured in the grammar in the strict sense (i.e. such that knowing the rule means not having to consult the lexicon in order to interpret or produce the data).[3] To capture the facts, the descriptive linguist is forced to list these items and alternations in the lexicon, with specifications of the distinct semantic and grammatical properties of each case.

4. 'Derivation': The parallel with morphology

Issues arising in above discussion of a heavily isolating language are similar to those arising in the study of derivational morphology. Dixon (1991: 51) invokes derivational morphology in arguing for a 'zero derivation' account of noun-verb alternations in English. He draws the following analogy:

talk (v.)	*talk* (n.)
converse (v.)	*conversation* (n.)

The analogy suggests that heterosemy is as much a grammatical process as the explicit morphological marking of functionally equivalent alternations. While this may encourage the grammarian to look for rules akin to morphological derivations, an important point in the present context is that derivational morphology itself often does *not* allow for statements in the grammar which genuinely reduce the burden on the lexicon. For example, the English inchoative suffix *-en*, which derives verbs from adjectives, often signals the presence of a meaning more specific than simply '(cause to) become (more) ADJ'. *Blacken* does not mean 'cause (sth.) to become black', hence the oddity of saying *I blackened my house* with reference to having painted it with black paint. With reference to the derivational morphology of Khmer (Eastern Mon-Khmer, Cambodia), Huffman (1970: 311) writes:

> … it is one of the clichés about Cambodian [Khmer] that it has a complex system of prefixes and infixes. This statement is misleading if it leads to the conclusion that Cambodian speakers "use" affixation as a *derivational process* in speaking. It is a fact that the Cambodian lexicon contains a large number of words (*derivatives*) which are *related to* other words (*bases*) by various prefixes and infixes, but these affixes are not productive in the modern language.

Nevertheless, Huffman usefully describes a list of derivational prefixes and infixes in the language (1970: 312–316). Similarly, Macdonald and Darjowidjojo (1967: Chapter 2) list a range of morphological derivations in Indonesian, many of which are semantically idiosyncratic and cannot be accounted for by general rules. It is normal, and indeed useful, for grammarians to list and analyse derivational morphemes, even when precise semantic generalisations are not forthcoming, and when there is no genuine reduction in the number of necessary lexical entries. As Anderson (1985: 163) points out, a derivational morphological relationship is "quite properly part of the lexicon of the language", not "a property of the grammar itself".

5. Cross-class heterosemy: 'Verb/preposition alternations' in Lao

Consider the words in boldface in the following Lao examples:

(5) a. *man2* ***nam2*** *kuu3*
3SG 1SG
'S/he followed me.'

b. *man2 paj3 talaat5* ***nam2*** *kuu3*
3SG go market 1SG
'S/he went to the market with me.'

(6) a. *man2* ***khùn5*** *phuu2*
3SG mountain
'S/he ascended the mountain.'

b. *man2 khap1 lot1* ***khùn5*** *phuu2*
3SG drive vehicle mountain
'S/he drove a vehicle up the mountain.'

The words *nam2* and *khùn5* appear to function like verbs in one slot (in the (a) examples), and like prepositions in another slot (in the (b) examples). This is suggested not only by an apparent difference in meaning, but also by different possibilities in grammatical behaviour of the words in question. Only in the (a) examples can the words in boldface be immediately preceded by verbal aspect-modality markers (such as *siø* 'irrealis', *bòø* 'not', *kamlang2* 'progressive', *daj4* 'achievement', and the experiential marker *kheej2* 'to have ever *v*-ed'). In the (a) examples in (5) and (6), the word in boldface is the core predicate of the clause, while in the (b) examples it is a secondary or oblique element. Table 3 (next page) shows 12 items which enter into this alternation.

How does the grammarian best capture the content of Table 3? One approach – which we may call the 'lexical specification' approach – would be to say that each of the items in Column b of Table 3 has two distinct senses, represented by the cells in Columns c and d, respectively. Thus, for example, we would find in the lexicon two entries for *khùn5*, one a verb meaning 'ascend', another a preposition meaning 'up'. Similarly, for *nam2*, we would find one entry meaning 'follow' (a verb), and another meaning 'with' (a preposition). This solution puts the entire burden on the lexicon, meaning that the 12 cells in Column b of Table 3 correspond to 24 distinct dictionary entries (the combined total of cells in Columns c and d). This solution, however, would fail to make explicit a link between senses listed in Columns c and d, and would thus fail to capture the intuition that there are systematic relationships between whole classes of such pairs in the lexicon. The notions 'ascend' and 'up' are not only closely related semantically, but their relationship to each other is analogous to that between 'descend' and 'down', 'enter' and 'into', and so on. It would seem preferable

to capture this set of relationships, if possible, with a general statement in the grammar. Let us consider two possible solutions, a zero derivation approach and a precategoriality approach.

Table 3. Some items entering into a 'verb-preposition alternation' in Lao

a. semantic class	**b. item**	**c. English translation in core verb slot**	**d. English translation in non-core slot**
Directional	*khùn5*	ascend	up
	long2	descend	down
	khaw5	enter	into
	qòòk5	exit	out of
	khaam5	cross over	across
	lòòt4	cross under	across.under
	taam3	follow	along
	phaan1	pass	past
	liap4	move along edge of	along edge of
	qòòm4	move around (sth.)	around
Comitative	*nam2*	follow	with
Benefactive	*haj5*	give	for

According to the zero derivation approach, one of a morpheme's two senses is basic, and the morpheme is entered in the lexicon with this basic sense. Then, a 'zero' morpheme is used to derive the second sense (in this case realised in a different grammatical context). Thus, for example, we would find in the lexicon just one entry for *khùn5* (a verb meaning 'ascend'), and from this verb a preposition meaning 'up' would be 'zero-derived'. Clark and Prasithrathsint (1985; cf. Clark 1989) propose this solution for dealing with data such as that in Table 3, namely verb-preposition alternations in isolating languages of mainland Southeast Asia (including Khmer, Hmong, Thai, and Vietnamese; cf. Lefebvre 2001: 126 for discussion of the same suggestion for typologically similar Creole languages). Similarly, Matthews and Yip (1994: 55) posit 'conversion' in their description of Cantonese. One attraction of this solution for the grammarian is that it would dramatically reduce the number of lexical entries required for dealing with data such as in Table 3, by supplying one derivational rule to be specified in the grammar, representing a productive relationship between the putatively related senses, and generalising across a class of lexical items. This is easier said than done. As stated already for the examples of

open-class heterosemy, such a solution can only be justified if the semantics of the derivational rule are explicitly stated, and the rule can be shown to be consistently productive across the class of items to which the rule is applied.

What kind of derivational rule could work for the data in Table 3? Harrison (1992), writing on Thai (closely related to Lao, and not distinct from it in regard to the present topic), argues that the distinction between *khùn5* as a verb 'ascend' and *khùn5* as a preposition 'up' is one of presence or absence, respectively, of a 'temporal profile' (i.e. whereby 'its evolution through conceived time is scanned in sequential fashion'; Langacker 1987: 244). In all other respects, the 'verb' and 'preposition' meanings are identical. The claim, then, could be that the semantic specification of the zero derivation rule is 'suppress temporal profiling', with the result that as a verb, *khùn5* predicates a process, while as a preposition it does not. What remains constant across the two meanings of *khùn5* is 'path of motion' information. Thus, in the case of *khùn5*, the lexical entry would mean 'move up', and the derivational rule would suppress the element of extension through time, thereby suppressing the element of movement, and deriving a preposition meaning 'up'. Schematically, then, if a verb means 'to move along path *x*', a preposition derived from it would mean 'along path *x*'. This generalisation seems possible for the set of ten items marked as 'directional' in Table 3. But it would not work for the benefactive *haj5*, nor the comitative *nam2*, since neither encode spatial (path) information, nor do the differences between the verb and preposition uses of these two items concern mere presence or absence of a 'temporal profile'. For benefactive *haj5* and comitative *nam2*, the semantic relationship between the verb and preposition meanings is not captured by a general rule. Unless one wants to propose a rule which applied to a single-member class, the two meanings will have to be separately listed in the lexicon.

A zero derivation account for the data in Table 3 could look like this:

Table 4. A zero derivation approach to the data in Table 3

		specified in the lexicon		***derived by rule***
a. sem'ic class	**b. item**	**c. verbs**	**d. prepositions**	
Directional	*khùn5*	ascend	-	up
	long2	descend	-	down
	khaw5	enter	-	into
	qòòk5	exit	-	out of
	khaam5	cross over	-	across
	lòòt4	cross under	-	across.under
	taam3	follow	-	along
	phaan1	pass	-	past
	liap4	go along edge of	-	along edge of
	qòòm4	go around	-	around
Comitative	*nam2*	follow	with	-
Benefactive	*haj5*	give	for	-

Lexical entries: 14
Grammatical rules: 1 [i.e. in peripheral ('preposition') slot, 'Suppress temporal profiling']

A second proposal for reducing the burden on the lexicon and capturing a generalisation in the grammar would be to view the relevant lexical entries as 'precategorial'. According to this approach, the item to be stored in the lexicon is given no inherent specification of grammatical class membership, and whether the form emerges as, say, a verb or a preposition depends on the grammatical context in which it appears (cf. Broschart 1997, Lefebvre 2001, inter alia). Taking such an approach, we would list in the Lao lexicon an entry for *khùn5* which has no specification for word class identity. The verb and preposition functions ('ascend' and 'up') would be concrete realisations of this precategorial item triggered by different syntactic contexts.

Table 5. A precategorial approach to the data in Table 3

		specified in lexicon	***derived by rule, in different slots***	
a. sem'ic class	**b. item**	**c. (no word class)**	**d. verbs**	**e. prepositions**
Directional	*khùn5*	ascend/up	ascend	up
	long2	descend/down	descend	down
	khaw5	enter/into	enter	into
	qòòk5	exit/out of	exit	out of
	khaam5	cross over/across	cross over	across
	lòòt4	cross under/ across.under	cross under	across.under
	taam3	follow/along	follow	along
	phaan1	pass/past	pass	past
	liap4	(go) along edge of	go along edge of	along edge of
	qòòm4	(go) around	go around	around
Comitative	*nam2*	follow	follow	with
Benefactive	*haj5*	give/for	give	for

Lexical entries: 12
Grammatical rules: 4

i. for deriving verb forms from the underlying abstract lexical entries of the whole set;
ii. for deriving preposition forms from the underlying lexical entries of the directional set;
iii. for deriving preposition form from underlying lexical entry of benefactive *haj5*;
iv. for deriving preposition form from underlying lexical entry of comitative *nam2*.

This account differs from the zero derivation account in positing an abstract underlying meaning for each item (Column c. of Table 5). Furthermore, one needs to state *two* semantic mapping rules, one stating the function by which the verb meaning is derived from the precategorial entry, and the other stating the function by which the preposition meaning is derived from the precategorial entry. The main problem is the question of just what the precategorial item itself means, if it is to be genuinely abstract with respect to the surface realisations, and if the meanings of the output forms are to be proper functions of the input form plus the rule. If the 'abstract' underlying meaning of the precategorial element were specified as a disjunction (e.g.

'ascend/up' for *khùn5* or 'give/for' for *haj5*; cf. Lefebvre 2001: 132), then the solution has achieved nothing, since in fact *two* lexical items have been stored in the lexicon (both 'give' and 'for' being smuggled into a single entry), and the 'mapping rule' has become superfluous. That is, the rule wouldn't *derive* the surface meaning, but would simply specify which disjunct applied. Further, if the 'abstract' underlying meaning of the precategorial element were identical to one of the surface realisations (e.g. 'ascend' for *khùn5*), such that the mapping onto one syntactic frame required no semantic change in the derivation, then this would be indistinguishable from the zero derivation approach.

Both the zero derivation and precategoriality proposals would significantly reduce the number of entries required in the lexicon (cf. Table 3), but both require care in accounting consistently for the semantic relationship between input and output forms. For example, in the zero derivation approach, it is not sufficient to point out *that* there is a semantic relationship between the source (verb) and output (preposition) forms. The hypothesis of derivation must be supported by an explicit statement of *just what* the semantic relationship between input and output forms is (as for pairs like *knife* (v.) vs. *knife* (n.), and *saw* (v.) vs. *saw* (n.), above). A generalisation seems possible for the set of directionals in Table 3, but it does not cover the remaining two items, which belong to semantic categories of their own. One can only justify a derivational approach to heterosemy (i.e. where only one form is listed, and further forms are grammatically derived) if one can explicitly state the *semantic* conditions of the derivation (specifying input, function, and output), and show that they hold consistently across all members of the relevant class. 'Semantic regularities' (Jackendoff 1975) are necessary for generalisations in lexical derivation. The challenge of getting the semantics right is even greater for a precategoriality account, since the precategorial form needs to be characterised semantically such that not one but two source-to-target semantic mappings apply consistently across a class of items.[4]

6. Previously offered solutions

Some scholars of Southeast Asian languages have assumed heterosemy for data such as in Table 3, and have argued for an 'economising' solution by grammatical rule. As already mentioned, Clark and Prasithrathsint (1985) propose a zero derivation account for directional verbs in prepositional

functions, among other cases of cross-class heterosemy, in a number of mainland Southeast Asian languages. Descriptive grammars of these languages do not offer this kind of solution, but do depict the 'verb' and 'preposition' roles as distinct.

Huffman (1970), in his description of Khmer (Mon-Khmer), lists a class of 'directional verbs' which function as directional prepositions and particles, but he does not explicitly reflect on their status as cross-class heterosemous. He writes: 'Directional verbs occur after primary verbs which are non-specific as to direction or goal, and specify the direction or general orientation of the action initiated by the verb' (Huffman 1970: 138). This passage presupposes that directional verbs in this sense are not 'primary verbs'. Although the term 'directional verb' clearly points to the identity of these expressions as a type of verb, Huffman does not discuss the fact that they also function as primary or open class verbs in other contexts.

Li and Thompson (1981) describe a Mandarin (Sinitic) category analogous to Lao directionals in oblique function, calling them *coverbs*, and stating that they are 'essentially prepositions' (Li and Thompson 1981: 360). They acknowledge the possibility that one may therefore simply want to call them 'prepositions', but reject this on grounds that the class "contains words that are partly like verbs and partly like prepositions" (Li and Thompson 1981: 360). The status of these words is 'mixed', they write, because "most of these present-day coverbs used to be verbs at earlier stages of the language, and many of them still have characteristics of verbs and can be used as verbs that have similar meanings" (Li and Thompson 1981: 360). Nevertheless, they list the forms in a distinct section of the grammar describing their role as prepositions, and make no attempt to economise by deriving them from verbs by rule. For Cantonese, Matthews and Yip (1994: 60ff) write of 'coverbs', discussing their problematic status as 'prepositions', and concluding that 'as far as prepositions exist in Cantonese, they are a subclass of verbs which may be used as prepositions' (Matthews and Yip 1994: 62).

A final example (from a somewhat less isolating language) is the class of 'directional suffixes' in Manam (Oceanic) (Lichtenberk 1983), which are "added to verbs to indicate the direction of the action ... denoted by the verb" (Lichtenberk 1983: 580). Lichtenberk notes that these suffixes "are homonymous with (and so presumably derived from) the corresponding directional verbs" (Lichtenberk 1983: 580; cf. Lichtenberk 1991).

7. A monosemy analysis

An alternative approach to the directionals in Table 3 is to ask whether they present a case of heterosemy at all. Consider example (6), repeated here:

(6) a. *man2* ***khùn5*** *phuu2*
3SG mountain
'S/he ascended the mountain.'
b. *man2* *khap2* *lot1* ***khùn5*** *phuu2*
3SG drive vehicle mountain
'S/he drove a vehicle up the mountain.'

While *khùn5* is translated in (6a) by English *ascend* (or *go/come up*) and in (6b) by English *up*, one may ask whether this really reflects an underlying distinction in Lao. To posit heterosemy, one must be sure that the item concerned is both polysemous and a member of two different word classes. But it seems possible to say that *khùn5* in (6a) and (6b) has a consistent meaning 'move along path upwards', where any apparent difference between 'verb' and 'prepositional' uses emerges from the nature of the constructional slot in which it appears. If we assume that there is a 'main verb' slot, immediately after the subject, then this is the slot in which *khùn5* occurs in (6a) (being the only verb in the clause), and it takes as its direct complement a nominal denoting the ground referent of the path-oriented motion event. The role of *khùn5* in (6a) is to head a clause with the meaning that a certain entity (referred to by the subject noun phrase) moves up with respect to another entity (referred to by the direct complement noun phrase). Accordingly, *khùn5* in (6a) may take regular verb aspect-modality marking, such as the irrealis marker *siø* in the following example:

(7) *man2* *siø* *khùn5* *phuu2*
3SG IRR mountain
'S/he will ascend the mountain.'

In (6b), however, *khùn5* is not in the same post-subject main verb position. In main verb position is the verb *khap2* 'drive', denoting cause and manner of motion, along with a complement noun phrase *lot1* 'vehicle' referring to the means of motion. This is followed by *khùn5* and its ground-denoting nominal complement *phuu2* 'mountain'. Placement of aspect-modality marking in the structure of (6b) must be in the slot immediately before the main verb *khap2* 'drive', as follows:

(8) *man2* *siø* *khap2* *lot1* *khùn5* *phuu2*
3SG IRR drive vehicle mountain
'S/he will drive a vehicle up the mountain.'

If an aspect-modality marker such as *siø* were placed immediately before *khùn5* in (6a), *khùn5* would be treated as a clausal head. The sentence would then comprise of two separate clauses, whereby the manner of motion expressed in the first verb and the path of motion expressed in the second verb are not understood as features of a single event (thus, with no entailment that the means of ascending the mountain were by vehicle):

(9) *man2* *khap2* *lot1* *siø* ***khùn5*** *phuu2*
3SG drive vehicle IRR mountain
'S/he drove (or: is driving) a vehicle, (s/he was/is) going to go up the mountain.'

The inability of *khùn5* in its oblique role in (6b) to take direct aspect-modality marking could be taken as an index of its non main-verb status, supporting a heterosemy analysis. (This is the sense in which Lord 1993 refers to grammaticalising serial verbs as 'defective'.) But perhaps we could instead interpret this constraint as a property of the *construction*. (6b) would then exemplify a construction which provides two slots for two types of verb. The first slot is open to verbs from a large (probably open) class, denoting any kind of activity which can be understood as a cause of motion. The second slot is open to verbs from a closed class (10 members), denoting motion along an abstract path ('up', 'down', 'across', etc.). The resulting construction is a complex predicate in which the order of the two verbal components is fixed, and where the two verbs do not represent two events but complementary specifications of the same event.

It is notable that none of the grammarians mentioned in the previous section, faced with the same puzzle posed by the Lao data in Table 3, opt for a monosemy analysis (putting the 'verb/preposition' alternation down to a difference in constructional environment), nor do they try stating a single rule which would derive the directional 'prepositions' from the class of directional verbs (even though this could have been done in each case). While the theorising, tinkering, 'structuralist grammarian' portrayed by Pawley (1996) would certainly have wielded Ockham's Razor and opted for economy in one way or another, these non-mythical descriptive grammarians have approached the task more pragmatically.

8. Cross-class heterosemy in the Lao verbal complex: Extension in diachrony

Many grammatical markers of the verb in Lao are cross-class heterosemous. However, the synchronic semantic relationships between open and closed class senses are highly idiosyncratic. For this reason, there are few if any possibilities for lexicon-reducing grammatical generalisations.

The template in Figure 1 shows the Lao verbal complex, with slots for aspect/modality marking on the verb:

ASP/MOD$_A$ – IRR – NEG – ASP/MOD$_B$ – *daj4* – DIR.PCL – [VERB (OBJ)] – ASP/MOD$_C$

Figure 1. Elements of the Lao verb complex, in order

Most morphemes marking grammatical meanings on the verb – specifically, those appearing in the slots marked 'ASP/MOD' (aspect-modality), '*daj4*' (achievement marker), and 'DIR.PCL' (directional particles) – also function as main verbs or nouns. The following examples feature the item *lèèw4* (which functions either as a main verb meaning 'finish' or as a post-verbal perfective marker) and the item *daj4* (which functions either as a main verb 'acquire' or as a preverbal modal marker of achievement):

(10) a. *khòòj5* ***lèèw4*** *viak4* *nii4*
1SG work DEM.GEN
'I have finished this work.'

b. *khòòj5* *hên3* *man2* ***lèèw4***
1SG see 3SG
'I already see him/her.'

(11) a. *khòòj5* ***daj4*** *ngen2* *laaj3*
1SG money much
'I got a lot of money.'

b. *khòòj5* ***daj4*** *hên3* *man2*
1SG see 3SG
'I did see him/her.'

Here is a list of some of the cross-class heterosemous items which appear in the template depicted in Figure 1:

Table 6. Some cross-class heterosemous terms found in the Lao verb complex

a. item	b. meaning in open class	c. meaning in closed class (and position in 'Lao verb complex' template)
daj4	*v*. obtain	i. can (ASP/MOD_C) ii. ACHIEVEMENT (*daj4*)
lèèw4	*v*. finish	PERFECTIVE (ASP/MOD_C)
kamlang2	*n*. energy	PROGRESSIVE (ASP/MOD_A)
kheej2	*v*. accustomed	EXPERIENTIAL (ASP/MOD_B)
khanaat5	*n*. extent	INTENSIFIER (ASP/MOD_C)
ñang2	*v*. remain	not yet (ASP/MOD_A, with negation)
thùa1	*n*. occasion, time	not yet (ASP/MOD_C, with negation)
jaak5	*v*. want	somewhat (ASP/MOD_B)
mak1	*v*. like	tend to (ASP/MOD_B)

A grammarian might hope to economise by removing such alternations from the lexicon and capturing them in grammatical rules. As stated earlier, to qualify as a derivational statement which applies to a class with more than a single member, the required rule would need to specify a function with consistent input and output, both semantic and morphosyntactic, across a class of items. However, the semantic idiosyncrasies of the alternations in Table 6 prevent any such rule from being found. As closed-class items, Lao words such as *daj4* (as preverbal modal) and *lèèw4* (as postverbal aspectual) must be individually treated in the relevant section of the grammar (e.g. in a section on grammatical marking of modality and aspect in the verbal complex). But as open class items (i.e. as verbs meaning 'acquire' and 'finish', respectively), they deserve no special treatment.

Ultimately, however, the grammarian would be taking too far his economising mission were he or she not to draw attention to these relationships, despite the inability of rules to capture them. Some grammarians include dedicated sections on cross-class heterosemous items, enumerating their various open and closed class functions. Thompson's Vietnamese grammar includes a long appendix entitled 'Glossary of difficult forms', in which many entries are cross-class heterosemous (Thompson 1965: 336ff). Huffman's description of Khmer dedicates a section to *baan*, a cross-class heterosemous item which occurs 'in three different syntactic positions and with three different functions' (Huffman 1970: 74; cf. Haiman 1999 and Enfield 2001, 2003). Smyth's sketch grammar of Thai includes an appendix dedicated to three cross-class heterosemous items *hây* ('give', 'for',

'cause', etc.), *dây* ('obtain', 'can', 'perfective', etc.), and *pen* ('be', 'be able', 'as', etc.; Smyth 2002: 218).

While there is no productive synchronic derivational relationship attributable to most cross-class heterosemy, it is usually obvious that there is a derivational relationship on the diachronic dimension (Durie 1988; Lichtenberk 1991; Lord 1993; Diller 2001; Enfield 2003: 125ff; note, however, Lefebvre's 2001: 132ff warning that synchronic multifunctionality is not necessarily due to language-internal processes of grammaticalization). The source of cross-class heterosemy in isolating languages is often verb serialisation, which facilitates the emergence of new meanings for open-class words in closed class positions. Lord (1993) focuses on serial verb constructions 'in which one of the verbs is defective in some respect, such as phonological assimilation, failure to take the usual verb inflections or negation affixes, or showing unexpected syntactic properties' (Lord 1993: 3). This formal 'defectiveness' in a restricted grammatical position is an index of semantic change, revealing a new status of the erstwhile open-class item as a closed-class grammatical marker.

The process of grammaticalisation by definition involves the historical passage of a morpheme from open- to closed-class status (Traugott and Heine 1991, Hopper and Traugott 1993, inter alia), as diagrammed here:

(12) $[a_{\text{OPEN}}]_{t1} \rightarrow [b_{\text{CLOSED}}]_{t2}$

Research on historical semantics has established that a simple '*a* becomes *b*' scenario is too simple, and that a medial stage of polysemy must be recognised in the unfolding of meaning change (Sweetser 1990, Evans 1992, 1997, 2003, Wilkins 1996, Enfield 2003). That is, if a word meaning '*a*' comes to mean '*b*', there must be an intervening stage in which the word is ambiguous, with possible meanings '*a*' and '*b*'. This is illustrated in stage 't2' in the following diagram:

(13) $[a_{\text{OPEN}}]_{t1} \rightarrow [a_{\text{OPEN}}, b_{\text{CLOSED}}]_{t2} \rightarrow [b_{\text{CLOSED}}]_{t3}$

Cross-class heterosemy arises precisely in stage 't2' in (13), i.e. where the '*a*' and '*b*' meanings are associated with open and closed class positions, respectively. The importance of cross-class heterosemy to the typological study of semantic change and grammaticalisation is reason enough for the grammarian to note it (and elaborate on it, to the extent possible) in a grammatical description.

9. Summary and conclusion

Pawley (1996) depicts the 'structuralist grammarian' as an economy hound, bent on looking for grammatical generalisations by which he or she can minimise information to be included in the lexicon. To the extent that it really is the grammarian's job to do so, balancing the respective burdens of lexicon and grammar must be done with simultaneous consideration of formal and semantic criteria. Treatments of the issue to date have failed to deal adequately with semantics. If a derivational rule is to account for regular patterns of heterosemy, then the semantic relationships between putative source and target structures must be explicitly stated and shown to be productive. Only when one can identify semantic relationships which are consistent for a whole set of alternations can one state a rule which allows predictable output across a class of lexical entries, thus allowing a statement in the grammar to genuinely reduce the size of the lexicon. Typically, in a description of derivational morphology, the grammarian's observation of apparently consistent relationships across lexical items fails to achieve economy, in that it does not obviate the need to list separate lexical entries for each derived item in the pattern. Apparently regular alternations arising from heterosemy are no different, and relationships of cross-class heterosemy in particular tend to be semantically idiosyncratic enough to resist even the most abstract generalisation. It is clear, however, that failure to achieve 'economy' does not detract from the utility of discussing general patterns observed in the lexicon of a language. Such perceived sets of relationships, particularly given their common diachronic significance, are of intrinsic interest in a grammatical description.

Notes

1. Here, and in other examples below, some glosses are omitted intentionally so as not to pre-judge the unity or separateness of meaning of a given item in different contexts. Transliteration of Lao used here follows IPA convention except for velar nasal */ng/*, glottal stop */q/*, mid-high front vowel */ê/*, low front vowel */è/*, central vowel (schwa) */e/*, low central vowel */a/*, high back unrounded vowel */ù/*, low back vowel */ò/*. Tones are represented by numbers following each syllable (ø=unstressed/atonal, 1=/33/, 2=/35/, 3=/13/, 4=/53/, 5=/31/). Abbreviations in interlinear glosses are: 1=1st person, 2=2nd person, 3=3rd person, CLF=classifier, COP=copula, DEM=demonstrative, GEN=(semantically) general, IRR=irrealis, SG=singular.

2. When the meaning of the derived term cannot be computed or uniquely predicted by the meaning of the constituent parts (e.g. from 'under' and 'arm' in *underarm* or 'knife' and 'USED AS VERB' in *He knifed me*), the derived form has an indexical relationship to the source form. The constituent morphemes do not constitute the whole derived meaning, they constitute only part of it, indexing the lexically specified whole meaning. The Peircean distinction between symbolic and indexical meaning is useful in distinguishing between inflection (where the symbolic values of the constituent morphemes and the construction directly encode the whole meaning) and derivation (where, usually, the symbolic values of the constituent morphemes point to, but do not by themselves constitute, the lexically specified whole meaning).
3. Clark and Clark (1979) argue for pragmatic inference as a way of accounting for effects which arise 'when nouns surface as verbs', citing examples like *He porched the newspaper*. This is undoubtedly an important basis for speakers' production and interpretation of novel uses, and is a promising avenue for explaining historical extensions across word classes, but once an extension has become lexicalised (e.g. the verb *knife*), the meaning becomes context-independent, and comprehension by pragmatic inference is no longer a viable account. Conventional meanings will pre-empt conceivable pragmatic inferences. Other authors who have discussed possible rules for derivation (cf. Voorhoeve 1981, Vonen 2000) fail to adequately specify the *semantic* output of the said rule. The same can even be said for those who have argued that semantics is the crucial issue (Ruhl 1989; cf. Lakoff 1987).
4. The two approaches have different implications if meant as hypotheses about the grammar as a mental object. Thus, the zero derivation analysis would entail that one of the two forms was conceptually basic and/or prior with respect to the other, while the precategorial approach would not. In the absence of any independent or principled reason to regard one of the two meanings as more basic, this would perhaps be an attraction of the latter approach.

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Field semantics and grammar-writing: Stimuli-based techniques and the study of locative verbs[1]

Birgit Hellwig

1. Introduction

All grammatical description relies, at least to some extent, on semantics. Even where a semantic analysis is not the explicit goal of the field linguist, lexical and grammatical items still need to be glossed, grouped together into larger classes, and compared to other classes in terms of their meanings and functions. But many field linguists would go further and accord semantics a central role in the process of grammar writing, assuming that formal similarities and differences reflect semantic similarities and differences.

While the importance of semantics is generally accepted, semantic analyses are difficult to implement. Grammars often contain disclaimers stating that it was not possible to determine the meaning of an expression, or that two expressions could be used interchangeably without a change in meaning. For example, with reference to locative verbs, which constitute the topic of this paper, it is not uncommon to find statements like the following (taken from Seiler's grammar of the Papuan language Imonda): "[i]n their existential function they are devoid of meaning and only serve a linking purpose" (Seiler 1985: 157).

Many of the difficulties encountered in specifying the meaning of an expression arise from methodological problems: questions of how to distinguish between ambiguity and vagueness, how to establish sense relations such as hyponymy and superordination, or how to distinguish semantic entailments from pragmatic implicatures. While the semantic literature proposes a number of tests (see, e.g., Cruse 1986; Frawley 1992; Lyons 1977; Zwicky and Sadock 1975), all proposed tests rely crucially on native-speaker intuitions about the acceptability and the equivalence of expressions. Lyons (1977: 379), for example, states that "[w]hat we are

after is some intuitive notion of grammatical acceptability which native speakers have by virtue of their recognition of principles that are immanent in their own language-behaviour […]."

The importance of native-speaker intuitions poses a problem for field linguists who, in many cases, are not native speakers of the languages they analyze. Field linguists thus have to resort to other types of data instead, notably to observational and elicited data. Yet, as illustrated by the following statements, semanticists often treat such types of data with skepticism:

> … the identification of utterance-tokens as instances of the same utterance-type cannot be carried out in terms solely of external, observational criteria. (Lyons 1977: 28)

> … and this [i.e., the intuition, B.H.] is something that we cannot get at directly by asking them [i.e., the native speakers, B.H.] whether a putative sentence is or is not grammatical. (Lyons 1977: 379)

In addition to this more general skepticism, two specific problems emerge in the analysis of little described languages. First, if the meaning of an expression is to be inferred from observing its use in context, a text corpus is needed. Since it is well known that many expressions occur only infrequently in natural language use and/or are restricted to certain registers and genres, this corpus has to be large and diversified to ensure some degree of representativeness (see, e.g., Biber 1995) – but corpora on this scale are usually not available for little described languages. Second, if the meaning of an expression is to be inferred on the basis of elicited grammaticality and acceptability judgements, the grammatical structure of the language has to be reasonably well understood. In the absence of comprehensive grammatical descriptions, it will be difficult to construct appropriate test sentences or to delimit larger semantic types on the basis of morphosyntactic criteria.

The considerations above give an idea of the methodological problems that need to be solved when conducting a semantic analysis under field conditions. This paper is concerned with such methodological issues. It does not aim at an exhaustive overview of possible techniques, but rather introduces, by way of an example, some techniques that were employed in analyzing the coding of locative relations in Goemai, a West Chadic language of Nigeria. It focuses on the possibilities and limitations of some data collection techniques, their interactions with each other, native speakers' reactions to them, and their influence on the analysis of the data.

The paper is structured as follows: section 2 introduces locative relations in Goemai, section 3 discusses data collection techniques, section 4 illustrates detailed analyses based on the collected data, and section 5 summarizes the discussion.

2. Locative relations and postural-type expressions in Goemai

Goemai is a West Chadic language that is spoken in Central Nigeria by approximately 150.000 speakers. Available linguistic analyses include comparative phonological studies (Hoffmann 1975; Kraft 1981; Wolff 1959), two unpublished dictionaries (Sirlinger 1937, 1946), an unpublished grammatical sketch (Sirlinger 1942), and a small text corpus (Ohikere and Tiemsan 1999; Sirlinger 1931; Tiemsan 1999). The data, on which this paper is based, was collected during 10 months of fieldwork (distributed over the period from 1998 to 2001), which took place in the village of Kwande with speakers of the Kwo dialect of Goemai.[2]

One interesting and pervasive aspect of Goemai grammar concerns the coding of postural information: in different grammatical environments (i.e., in the demonstrative, locative and existential, presentative, progressive, ascriptive and different subtypes of serial verb constructions), Goemai speakers are forced to choose a postural-type classifier or verb that codes the position of the (animate or inanimate) referent in space. These postural-type expressions are listed under the heading of 'locative verbs' in table (1) below. While such a phenomenon has not been described for any other Chadic language, it is known to exist in a number of non-Chadic languages (e.g., in many Papuan, Australian, Guaykuruan, Siouan and Germanic languages). Descriptive grammars of these languages tend to mention its existence, but they usually do not provide any details.[3] In fact, Sirlinger's (1942) excellent grammar of Goemai is a good example of the kind of information to be found: at various different places in his grammar, he gives the form of the postural-type expressions, their glosses (based on their occurrence with human subjects only), and their distribution across grammatical environments. But he does not address any semantic issues; and his description even conveys the impression that the choice of a postural-type expression is more or less arbitrary. He does not recognize that the choice of the right expression is just as important as, e.g., the choice of the right tense or aspect in other environments. As a result, he fails to make some important generalizations (see below).

Interestingly, the available grammars of closely related Angas-Goemai group languages do not mention the postural-type system at all. This is rather unexpected given that the languages otherwise share many grammatical and lexical features. Languages such as Angas (see Burquest 1973; Foulkes 1915; Jungraithmayr 1964), Mupun (see Frajzyngier 1991, 1993) or Mwaghavul (see Jungraithmayr 1963) even have forms that are cognate to the Goemai forms. For example, the cognate form to Goemai *lang* 'hang/move' is found in all languages, where it is given with the glosses 'hang' and/or 'swim' (see section 4.1 for the meaning of Goemai *lang*). And text appendices show that the cognate forms seem to occur in similar environments, e.g., like in Goemai, they are found in locative structures (as in 1a) as well as in second position of serial structures (as in 1b).

(1) a. *Mbul* *cɛ* *pɔ* ***tɔng*** *n-təng (…).* (Angas)
pigeon some CONTINUATIVE sit LOC-tree

'A pigeon was sitting in a tree (…).' (Jungraithmayr 1964: 124-125)

b. *Mo* *taa* ***ɗee*** *n-Panksin.* (Mupun)
3Pl fall stay LOC-Pankshin

'They stopped over in Pankshin.' (lit. 'arrived and stayed') (Frajzyngier 1993: 230)

It may be the case that the cognate forms do not play any role in forming locative statements in the other Angas-Goemai group languages (and are only used to describe the postures of animate subjects). But alternatively, it may be the case that their locative semantics has been overlooked: the published text material is not concerned with locative descriptions (but with the actions of human and animate participants); and the published elicited data does not take locative relations of inanimate subjects into account. Our current knowledge does not enable us to draw any conclusions here. In fact, it is argued in this paper that – in order to draw any meaningful conclusions – a certain type of data (i.e., stimuli-based data) is needed. The uses of such data are discussed in the following sections in more detail; and the remainder of this section outlines the coding of locative relations in Goemai.

Goemai expresses static location – i.e., the locative relation between an entity (a Figure)[4] and a reference object (a Ground) – by means of the locative construction, exemplified in (2) below.[5]

	Figure	**Verb**	**Preposition/Spatial Nominal**	**Ground**
(2)	*D'a*	*t'wot (…)*	*nd'ûûn*	*me.*
	calabash	sit(pl)	INSIDE	barn

'Calabashes sit (…) inside the barn.' [LIIT]

The locative construction in (2) contains a Figure (*d'a* 'calabash'), a Ground (*me* 'barn') and a locative relation coded partly in a spatial nominal (*nd'ûûn* 'inside'), and partly in a verb (*t'wot* 'sit, pl.'). This verb element constitutes the focus of the present paper.

Unlike English, Goemai speakers do not use a semantically vacuous copula such as 'be', but select an appropriate verb from a set of approximately 35 verbs. These verbs belong to two different form classes that have been termed 'locative verbs' and 'dispositional verbs' respectively (see table 1 below). The class of locative verbs contains five verbs, which are not only – and not primarily – used to express human posture or movement, but which occur with a wide variety of inanimate entities (e.g., in 2 above, calabashes are described as 'sitting'). The other 30 or so verbs belong to the class of dispositional verbs, describing posture (e.g., *shuur* 'squat'), internal disposition (e.g., *lam* 'twist'), distribution (e.g., *fu* 'scatter'), or orientation (e.g., *k'oon* 'face down').

Table 1. Locative and dispositional verbs

Locative verbs:	
lang (sg), *leng* (pl) 'hang/move'	
t'ong (sg), *t'wot* (pl) 'sit'	
d'yem (sg), *d'yam* (pl) 'stand'	
t'o (sg), *t'oerep* (pl) 'lie'	
d'e 'exist'	
Dispositional verbs:	
byap 'lie prostrate'	*k'oon* (sg), *k'ab'an* (pl) 'face down (on Figure's usage space)'
b'am 'stick'	*k'ut ~ k'wat* 'crouch, roll up'
b'eer 'scatter (of masses); plenty'	*k'wep ~ k'wop* 'burrow, stick into'
b'oot 'tie'	*lam* 'twist'
dap 'bend backward'	*maar* 'pile up'
dum$_1$ 'bend forward'	*meet* 'scatter'
dum$_2$ (sg), *duk* (sg, pl) 'upside down (on Figure's solid top)'	*neep ~ nap* 'hang downward'
d'ak 'scatter'	*ruk* 'short spaced to each other'
d'ûûr 'located precariously, carry on head'	*sar* 'at an angle'
d'ûût 'lean'	*s'ang* 'stretch'
fu 'scatter'	*shuur* 'squat'
fum (sg), *fûam* (pl) 'fold'	*shyoot* 'coil (around), encircle'
guur 'hooked'	*sh'uut* 'in form of a foliage, branch out'
kab'al 'cross-wise'	*t'arat ~ t'arak* 'in patches'
kan 'incline, bend'	*yeng* 'hang to side'
koot 'stoop'	*yuut* 'in large numbers, in a mass'
ku ~ kur 'curl, heap'	*zaan* 'in a line'

As illustrated below, the two form classes differ in (i) their lexical aspect, (ii) their argument structure and (iii) their distribution.
First, locative verbs are stative, and dispositional verbs are inchoative. For example, only a dispositional verb such as *k'oon* 'face down' – but not a locative verb – can occur in the main verb slot of the progressive construction (as in 3).

(3) *Goe-k'wal* *k'wal* *men /* *la* *hok* *d'e*
NOMZ-talk talking 1Pl.Poss child(sg) DEF PROGR(exist)

t'ong ***k'oon*** *yi* *goe* *b'et* *muk.*
PROGR face_down(sg) PROGR COM belly 3Sg.Poss

'While we are talking, the child is getting face down on its belly.'
[P02_59-A]

Second, locative verbs are intransitive. Furthermore, the Ground (although syntactically expressed as an adjunct) constitutes a semantic participant of these verbs. In Goemai, semantic participants (regardless of their syntactic expression) can only be omitted in certain contexts, e.g., whenever the prefix *N-* is present (as in 4a). Without this prefix, the participant needs to be overtly expressed (as *k'a gado* 'on the bed' in 4b). Dispositional verbs, by contrast, are labile, and they do not have a Ground participant.

(4) a. *la* *nnoe* *ru /* *de-goe* ***n-t'o***.
child(sg) LOC.ANAPH enter(sg) PUR PUR-lie(sg)

'this child had come in to lie.' [FROG-C]

b. *la* *nnoe* *ru* *de-goe* ***t'o*** ***k'a*** ***gado***
child(sg) LOC.ANAPH enter(sg) PUR lie(sg) HEAD(sg) bed

'this child had come in to lie on the bed' [C-07/12/00]

Third, the locative verbs or their derived classifiers obligatorily occur in a number of different environments. For example, *t'ong* 'sit' can occur as a classifier in the demonstrative (as in 5a), or as a verb in the ascriptive construction (as in 5b) (see also 3 above where *d'e* 'exist' fills the auxiliary verb slot of the progressive construction). None of the dispositional verbs is acceptable in any of these environments.

(5) a. ***Goe-n-t'ong-nnoe*** *a* *toeb'al.*
NOMZ(sg)-ADVZ-Cl:sit(sg)-DEM.PROX FOC calabash

'This sitting one is a calabash.' [HAND_7-J]

b. *de* *goe* ***t'ong*** *yi* ***kyoop***.
COMP OBL sit(sg) SUB health

'so that (the girl) should sit in health (i.e. be healthy).' [DIALECT]

The account given above is based entirely on naturally-occurring and elicited data. On the basis of such data, it thus proved possible to describe the form of the relevant construction, compile a list of expressions that can occur in it, and analyze their formal properties. Their semantic characterization, by contrast, had to remain very basic, and was largely restricted to providing translation equivalents. It is reasonable to assume that – in the different grammatical environments – speakers choose an expression on a semantic basis. However, the criteria that determine such a choice are far from obvious. In particular, the following two observations seem puzzling:

(i) On the face of it, the two verb classes are semantically similar (e.g., the four pairs below seem to be more or less equivalent), in that both the locative and the dispositional verbs are concerned with the spatial arrangement of a referent. Given their apparent semantic similarities, it is surprising that Goemai grammar should distinguish formally between them.

Locative verb	Dispositional verb
lang 'hang/move'	*neep* 'hang downward'
t'ong 'sit'	*shuur* 'squat'
d'yem 'stand'	*d'ûût* 'lean'
t'o 'lie'	*byap* 'lie prostrate'

(ii) Conversely, it does not seem possible to provide a uniform semantic characterization of the class of locative verbs: these verbs seem to express existence (*d'e* 'exist'), human-based posture (*t'ong* 'sit', *d'yem* 'stand', *t'o* 'lie'), as well as attachment and movement (*lang* 'hang/move'). Yet, despite their apparent semantic differences, Goemai grammar groups them together in one form class.

While the available naturally-occurring and elicited data can draw our attention to these two issues, they do not contain enough information to pursue further investigations: many verbs occur too infrequently, all verbs are found with a limited range of Figure and Ground objects only, and contextual information is sketchy or absent. For this reason, a different kind of data – stimuli-based data – was collected (see section 3 for details). This kind of data then led to the following analysis:

- It was possible to give a comprehensive characterization of the meaning of each verb (see section 4.1).
- It was discovered that locative and dispositional verbs are only superficially similar. There are considerable semantic differences that allow locative verbs (but not dispositional verbs) to assume existential and classificatory readings (see sections 4.2 and 4.3).
- It was found that dispositional verbs occur in the locative construction under certain marked conditions only (see section 4.4).

As a result of these discoveries, it became possible to give an adequate description of how existential statements are formed (see section 4.2), to discover the existence of a particular type of nominal classifier (i.e., classificatory verbs) (see section 4.3), and to explain the different distribution of locative and dispositional verbs (see section 4.4). In-depth semantic analysis thereby contributed directly to the grammatical description.

It is likely that, without such a semantic analysis, many aspects of the Goemai system would have been overlooked. A recent typological study (based on comparing data from different languages that were generated with a uniform set of stimuli) even argues that existential and classificatory uses are characteristic features of languages that use postural-type verbs for locative purposes (Ameka and Levinson in prep.-b). Yet, for most languages, the information that is necessary to prove or disprove this claim is not available: traditional grammars do not, and indeed cannot, address the relevant questions.

The following two sections illustrate in more detail possible techniques that help conduct semantic analyses in the field: techniques for collecting data (section 3), and techniques for handling the collected data (section 4).[6]

Note that this paper concentrates on postural-type systems. However, it is assumed that any area of grammatical description can benefit substantially from a comparable semantic approach.

3. Collection of extensional data

The first step in any semantic analysis is the compilation of a database that gives an overview of the referential range of an expression, i.e., of its extensions. The available natural texts may not contain enough material for this purpose (see also Samarin 1967: 210; Vaux and Cooper 1999: 181-191). For example, the verbs that are of interest to the present study all occur in the locative construction of Goemai – a construction that is found frequently in a variety of genres such as folktales, historical narratives, explanatory texts, descriptive texts or conversations. But although the construction itself occurs frequently, the distribution of verbs varies: a small number of verbs is responsible for most occurrences, while others are observed only infrequently. All verbs are found with a limited range of Figure and Ground objects only; i.e., for many conceivable locative relations, the linguistic data is not available. And, given the absence of negative information, it is unknown whether or not individual verbs are considered to be equivalent. Furthermore, the reference context is usually unknown, i.e., the position of the referent relative to its location in the real world cannot be reconstructed anymore.

These problems made it necessary to complement the naturally-occurring data with other types of data. Different methods were employed, but all relied on a common feature: the visual representation of locative relations in form of pictures, objects or videos,[7] and their presentation to consultants. Such a stimuli-based setup keeps some of the advantages of traditional elicitation (controlling for relevant parameters, standardization), but situates the responses in clearly defined and reconstructable contexts. Furthermore, the generated data are not translation equivalents, but rather naturalistic responses. Some of the tasks even allow speakers to converse freely amongst themselves, without being aware of the real nature of the task.

In particular, the following five properties make visual stimuli interesting to work with:

– First, visual stimuli provide speakers with possible contexts for their answers, and thereby minimize the risk of misunderstandings. Misunderstandings are likely to occur in any form of elicitation, as speakers tend to judge the acceptability of an utterance against its contextual use – and if such a context is not provided, they have to create it themselves. Lyons (1977: 420), for example, states that

"[w]hen our informants tell us that a particular utterance is deviant, anomalous, bizarre, etc., they may simply mean that they cannot immediately imagine the circumstances under which they would produce it."

- Second, since the extra-linguistic context is clearly defined, it can be reconstructed in the process of analysis.
- Third, the procedure is flexible in that it allows the field linguist to probe for potentially relevant parameters as well as to systematically test hypotheses.
- Fourth, since the context and the tested parameters are held constant, the same task can be used with different speakers for purposes of comparison. It is even possible to use the same task with speakers of different languages, thereby making it possible to develop semantic typologies (see, e.g., Ameka and Levinson in prep.-a for a typology of locative verbs; Dunn and Meira in prep. for demonstrative systems; Pederson et al. 1998 for frames of reference).
- Fifth, traditional elicitation is usually carried out with few consultants only as it requires some amount of training and is time consuming. The game-like nature of the stimuli-based tasks, by contrast, makes it possible to run them with many different, untrained, consultants, thereby generating a large amount of relevant data in a short time. Furthermore, consultants are often fascinated by the visual stimuli. This does not mean that such stimuli work in all contexts, but, as a general guideline, they tend to be more interesting to consultants than questionnaires used during traditional elicitation (see also the discussion in Vaux and Cooper 1999: 55–59).

Like all methods of data collection, the presentation of visual stimuli has disadvantages as well. First, it is not always applicable in all cultures and circumstances (see the discussion in Du Bois 1980). Second, stimuli effects may arise because speakers are asked to make fine-grained distinctions. Although it is likely that they will resort to strategies that are available to them in their everyday usage of the language, there is no guarantee for such a behavior. Both disadvantages arise with all types of elicitation, though. They cannot be avoided altogether, but they can be minimized through combining different techniques. While some techniques may not be applicable in a given culture, others will. And while some may generate unnatural results, results from different techniques can be compared, their convergences and divergences analyzed, and the stimuli effects recognized.

The remainder of this section describes some techniques in more detail: picture book elicitation (section 3.1), matching games (section 3.2), and staged communicative events (section 3.3).

3.1. Picture book elicitation

In the first type of stimuli-based task, consultants were presented with pictures of objects[8] in different locative relations. They were then asked a 'where' question (illustrated in figure 1 below).

question: *Wang d'e nnang?*
pot exist where
'Where is the pot?'

typical answer: *K'oon n-yil.*
face_down(sg) LOC-ground
'(It) faces down on the ground.'

Figure 1. Stimuli PHOTO-096

For each picture, the following answers were noted down: (a) the first answer of the consultant, (b) all spontaneous answers in the order in which they were given, (c) the acceptance and rejection of any form suggested by me, and (d) all other comments made by the consultant (suggesting alternative expressions, alternative contexts, folk explanations, etc.). Such types of answers are illustrated in table (2) below.

Table 2. Some answers to stimuli PHOTO-096

speaker:	A	N
spontaneous answers:	1. *k'oon* 'face down' 2. *k'oon d'yem* 'stand face down'	1. *k'oon d'yem* 'stand face down'
elicited answers and comments:	1. ?*d'yem* 'stand' (okay, but *k'oon* is better) 2. **t'ong* 'sit' (not possible because pot is upside down) 3. **t'o* 'lie' (pot is too tall) 4. **duk* 'upside down' (the 'mouth' is not wide enough; would be possible with an upside down bottle)	1. *k'oon* 'face down' (better than *k'oon d'yem*) 2. **k'oon t'ong* 'sit face down' (pot cannot both 'sit' and be 'face down') 3. *k'oon t'o* 'lie face down' (good) 4. **t'o* 'lie' (hesitated for a long time, then said that pot is too tall)

Picture books included the following kinds of objects in various locative relations with each other: a large number of both known and novel objects; the same object in different (stereotypical and non-stereotypical) positions and against different (stereotypical and non-stereotypical) Grounds; multiple objects; multiple objects in different positions; and objects in unknown positions. In the course of fieldwork, hypotheses about the semantic parameters relevant for the choice of a verb were constantly updated and tested, i.e., the set of stimuli was refined by adding new pictures and by removing others that had proven irrelevant.

For example, in the first set of stimuli a surprising use of the verb *lang* 'hang/move' was observed: a minority of speakers used this verb in reference to a tree located on top of a mountain, and some used it in reference to a stick located on a table. As a consequence, a new set of pictures was developed to systematically test whether *lang* 'hang/move' is used in reference to objects located in high places. The type of pictures used is exemplified in figures (2a) and (2b), and some responses are illustrated in table (3).

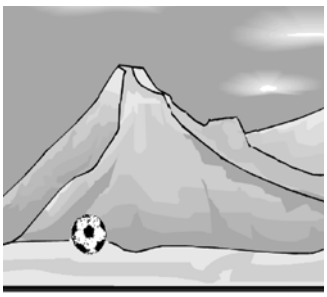

Figure 2a. Stimuli DRAW2-083

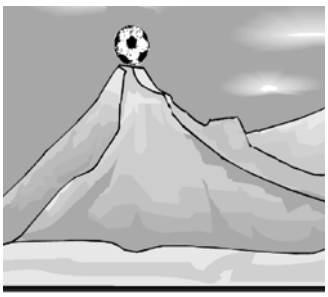

Figure 2b. Stimuli DRAW2-040

Table 3. The use of *lang* 'hang/move' with objects in high places

	object at foot of hill		object on top of hill	
	lang 'hang/move'	other	*lang* 'hang/move'	other
ball	-	5/5[9] *t'o* 'lie'	4/5	1/5 *t'o* 'lie'
calabash	-	5/5 *t'ong* 'sit'	3/5	2/5 *t'ong* 'sit'
tree	-	5/5 *d'yem* 'stand'	1/5	4/5 *d'yem* 'stand'

Table 3 shows that speakers were, indeed, more likely to use *lang* 'hang/move' in reference to objects located in high places, although other parameters interfered. The exact semantic analysis is not relevant for the purpose of this paper. Of relevance is rather the kind of data such picture book tasks generate: the use of expressions in reference to a large number of real world situations (as illustrated in table 4, below); and the possibility of manipulating the parameters – both to probe for relevant semantic features and to test them systematically.

However, being a form of elicitation, speakers became quickly aware of the nature of the task and speculated about my interests. In particular, speakers implicitly and explicitly compared the depicted relations to potential other relations or to relations that they had seen in previous pictures. As a result, the following two response patterns emerged:

(i) Speakers focussed on minute differences between pictures, often compressing a large amount of information into a single utterance (as in 6 below). As evidenced from natural texts, such descriptive utterances are not representative of everyday usage.

(6) *Lu* *carrot* *hok* *paat* *t'oerep* *nd'ûûn*
pile carrot DEF five lie(pl) INSIDE
tasa *goeme.*
plate one
'The five piles of carrots lie in one plate.' [DRAW2_069-C]

(ii) Speakers tended to give prescriptive answers and to reject alternative possibilities. They particularly rejected those possibilities that could not discriminate between pictures. The results obtained with picture book stimuli differ in this respect from the results obtained with other kinds of stimuli (see section 3.2 below for an example).

To compensate for these problems,[10] other methods were used to (a) check the reliability of the elicited data and to (b) collect additional types of data.

3.2. Matching games

Matching games are played by two consultants, one assuming the role of 'director' and the other the role of 'matcher'. In the course of the analysis, the following setup was used: the two players were screened off from each other and received a set of identical pictures. The director started by picking one of the pictures and describing it to the matcher, who had to pick the corresponding picture from his or her set. Since the two players could not see each other's pictures, they had to rely solely on verbal descriptions for this purpose. When they were convinced that the picture was correctly identified, both players put their pictures aside on a pile, and

Table 4. Extension of postural verbs

***lang* 'hang/move'**	***t'ong* 'sit'**	***d'yem* 'stand'**	***t'o* 'lie'**
moving person, mammal, reptile, insect, fish, bird;	sitting person, mammal; bird on ground;	standing person, mammal; bird in air; fish in water;	lying person, mammal; insect, reptile on ground;
moving car, bike, boat;	boat (on water, on ground);	car, bike;	
fruit, leaf in tree;	orange, pineapple, tomato;	tree (stump), millet, guineacorn;	fruit, leaf on ground; forest;
s'oor (calabash suspended from rafter); lamp on ceiling; fishing net, cloth on line;	container (calabash, bottle, plate); hat, *pepe* (woven cover); lamp, phone, radio, alarm clock; chair; coiled rope or cloth (headpad);	upside-down container; tall bottle; *wangheen* (pot buried inground); table;	container on side; any object in a container; rope, cloth, ribbon;

Table 4. cont… Extension of postural verbs

***lang* 'hang/move'**	***t'ong* 'sit'**	***d'yem* 'stand'**	***t'o* 'lie'**
hook on wall, handle on door;		inserted arrow or nail; hut, house, wall;	*zaal* (rope tied around tree); watch, bracelet, ring, belt; bark around tree;
		leaning ladder, flower in vase;	pencil, paper, spoon;
cloud, fog, smoke, wind, rain; sun, moon (also: *d'yem*);		smoke, moonlight, darkness (in one place); sun, moon (also: *lang*);	masses (grass, water, flour, sand, ashes, dust, rubbish); night, darkness;
hand, tail, wing; heart, kidney, lung, liver;		foot, horn, nose, ear, tooth; bone;	tongue, beard; vein;
landmark, settlement in distance	village, town	well, cave, lake, pond, mountain	sea, river, road, place

the director picked another one from the set. When all pictures were identified, the screen was removed, and the players compared their piles to check if they matched. Throughout the whole game, I stayed in the background, recorded the game (whenever possible on video, otherwise on audio), and took additional notes to keep track of matches and mismatches.[11] Figure (3) and example (7) below illustrate such a game and some of the data that was generated with it.

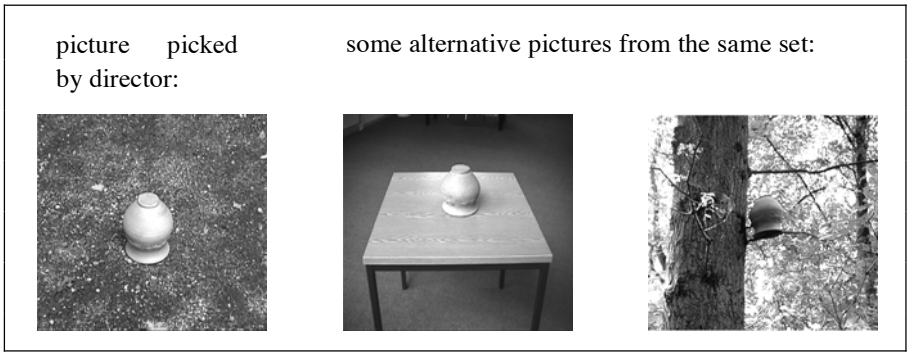

Figure 3. Matching game DIS-1

(7-1) A: *A* *ndoe* *wang /* ***k'oon*** *na* *n-**d'yem**. (…)*
FOC some pot face_down(sg) PRES PRES-stand(sg)

'Behold, a pot is standing face down.' (…)

(7-2) N: *Wang* *goenang* *nd'ûûn? (…)* *Goe-n-**t'o**-nnoe*
pot which(sg) INSIDE NOMZ(sg)-ADVZ-Cl:lie-DEM.PROX

a?
INTERR

'Which pot among (them)? (…) (Is it) this lying one?'

(7-3) A: *Goe-n-**t'o*** *dakd'ûe* *m-pe*
NOMZ(sg)-ADVZ-lie(sg) MIDDLE LOC-place

n-d'e-nnoe-hoe.
ADVZ-Cl:exist-DEM.PROX-exactly

'This existing one (that is) lying in the middle of the place.'

(7-4) N: *Oh.* *Ai.* ***K'oon*** ***t'ong*** *bi* *muk.*
INTERJ INTERJ face_down(sg) sit(sg) thing 3Sg.Poss

T'ong *n-yil* *ai?*
sit(sg) LOC-ground INTERJ

'Oh. Right. (It) sits face down on its own. (It) sits on the ground, right?'

(7-5) A: *Aha.*
INTERJ

'Yes.' [DIS_1.3-A/N]

The picture sets paid attention to the following two types of contrasts: the same object in different positions (e.g., an upright pot contrasting with an upside down pot and a pot on its side) vs. the same object in the same position but at different locations (as in figure 3 above). These two types generated different response patterns. Whenever objects contrasted in their position, speakers used those expressions that differentiated best between the different positions – such responses were comparable to the results obtained with picture book tasks (see section 3.1). But whenever objects contrasted in their location, speakers only used a subset of the available expressions to shift the focus away from the actual position to the location. For example, *t'ong* 'sit' in (7-4) above does not describe the actual position of the upside down pot (see section 4.3). Notice that speakers A. and N. explicitly rejected *t'ong* 'sit' when they were presented with the same picture during a picture book task (see table 2 in section 3.1).

Having obtained these results with the first matching game, a second matching game was devised to specifically focus on the location. In every round, the two players were each provided with a background picture depicting eight objects in eight locations. The two players were screened off from each other and were instructed to compare their pictures. The pictures differed in some details, including the following crucial aspects: (i) sometimes an object was present in one picture, but not in the other, and (ii) sometimes an object was present in both pictures, but in different positions (e.g., upright in one picture, but upside down in the other). The responses of the second matching game confirmed the findings from the first: whenever the focus was on the location, certain types of verbs were used that did not describe the actual position of the referent. For the purposes of this paper, I call this type of use 'classificatory', and distinguish it from the 'positional' use that asserts an actual position (see section 4.3).[12]

Matching games are similar to picture book tasks in that the parameters of interest can be systematically varied. At the same time, though, they are more difficult to set up (two speakers are needed, screens have to be provided, and video recording is advisable), and they take more time. It is therefore much easier to use picture book tasks to generate large amounts of extensional data. But matching games have two advantages over picture book tasks. First, these games are not overtly concerned with the speech of the consultants, i.e., with lexical expressions – the task is rather to find the matching picture. Because of this setup, the risk of prescriptive language use reduces considerably. Second, being interactive genres, matching games generate a wealth of conversational data: negotiations between speakers take place, explicit judgements about the appropriateness of specific expressions in specific contexts are made, and interpretations and misunderstandings can be observed on-line.

While this game-like nature has its advantages, the following disadvantages were encountered. First, these kinds of games are not always appropriate in all cultures, or with speakers of all ages and sexes. Second, because of their competitive nature, they can be stressful to the players who feel under pressure to produce the 'right' picture. Interestingly, the artificiality of the task itself did not pose real problems for the naturalness of the data: the speakers had to communicate their intent and make themselves understood. In doing so, they resorted to strategies that were available to them in their everyday usage of the language. The same kind of data was observed in more natural genres, albeit with considerably less frequency.

3.3. Staged communicative events

At different occasions, Goemai speakers were asked to talk about topics, which, in all likelihood, would generate locative descriptions. Whenever possible, visual props were present in the speech context. Speakers produced procedural texts about the manufacture of objects, they discussed an array of handicrafts placed in front of them (see also Levinson et al. 2001), they talked about the surrounding flora, they described the spatial layout of compounds and towns (see also Kita et al. 2001), and they gave route directions. In addition, speakers were presented with picture books and video films and were asked to retell their contents to some other member of the speech community (see also Berman and Slobin 1994).

As illustrated in (8), such tasks consistently produced a large number of locative descriptions.

(8) *Goe kat jap t'eng* ***d'yam*** *b'ak m-pe*
2Sgm find little(pl) tree stand(pl) here LOC-place

nnoe ngam.
LOC.ANAPH many

'You find many small trees (and they) stand here in this place.'

*Goe-n-****d'yem****-nnoe a lemu*
NOMZ(sg)-ADVZ-Cl:stand(sg)-DEM.PROX FOC orange

goe-rok.
NOMZ(sg)-become_sweet

'This standing one is a sweet orange (tree).'

*Lemu goe-rok n-****d'e****-nnoe-hoe /*
orange NOMZ(sg)-become_sweet ADVZ-Cl:exist-DEM.PROX-exactly

moe mûak ni m-mûak.
1Pl lick 3Sg ADVZ-lick

'This existing sweet orange, we eat it.'

Kuma / gurum moe-b'ang / mûep (…) ***d'ûe***
also person NOMZ(pl)-become_red 3Pl cause_lying(pl)

nd'ûûn t'u
INSIDE bottle

'And Europeans, they (…) lay (them) into bottles.' [TREE_N]

Such kinds of events do not serve any communicative purpose other than that of producing data. Himmelmann (1998) labels them 'staged communicative events'. He also subsumes matching games of the kind discussed in section 3.2 under this heading. For the purposes of this paper, however, matching games and staged communicative events are differentiated, as the latter are less artificial and less invasive. They are usually easier to reconcile with the interests of speakers to talk about culturally relevant topics. In fact, the field linguist as an outsider is often considered to have a legitimate interest in, as well as a genuine lack of, knowledge about almost all relevant topics.

The data obtained with staged communicative events constituted a good compromise between natural and elicited data: the locative expressions

occurred with considerable frequency, the reference context could be monitored, and once the context was given, speakers talked freely about the specified topic. Wherever possible, conversations between native Goemai speakers were staged instead of monologues, thereby minimizing the problems involved in researcher-directed speech.

3.4. Summary

The three techniques outlined in sections 3.1 to 3.3 are situated somewhere between traditional elicitation and natural discourse. They have in common that the reference context can be monitored, i.e., the locative relation is observable. But they vary with respect to (a) the amount of control that the linguist can exercise over the parameters and (b) the degree to which speakers can talk naturally.[13] None of the three techniques alone can satisfy both variables equally well, but taken together they generate a fairly broad spectrum of relevant data. Their combination seems to be the best way to avoid the disadvantages of each technique, while retaining its advantages.

4. Analysis of extensional data

The techniques outlined in section 3 generate data on the use of linguistic expressions in reference to the real world, i.e., they generate extensional data. The data does not, without further interpretation, give information about sense and sense relations between expressions, i.e., about intensions. This section illustrates some possibilities of translating extensional data into intensional analyses. Notice that the section is not concerned with semantic analysis in general, but only with those types of analysis that directly relate to the extensional data collected with the techniques discussed above.

4.1. Semantics of *lang* ‘hang/move’

First of all, the generated data can, of course, be used to conduct a detailed analysis into the meaning of an item, e.g., into the meaning of *lang* ‘hang/move’. From table (4) above, it can be seen that *lang* is used in reference to a variety of locative relations, including:

— referents that are attached (e.g., leaf in tree, lamp from ceiling);
— referents that move (e.g., fish swimming in water, cloud floating in air);
— referents that are located in (high) places (e.g., tree on hilltop, distant landmark).

These three uses either correspond to different senses (and *lang* would be ambiguous), or else to one sense that is modified through contextual factors (and *lang* would be semantically general). It is difficult to differentiate between these two options, and it is not possible to solve this question on the basis of extensional data alone (see, e.g., Zwicky and Sadock 1975 who propose a number of tests). Nevertheless, the data contains relevant distributional information.

A comparison of the first two uses ('attachment' and 'movement') shows that they are not as different as expected. In its 'attachment' use, *lang* occurs with inanimate Figures that are suspended from the Ground, i.e., with Figures that (potentially) dangle or swing. Other forms of attachment (e.g., static attachment through insertion into the Ground, through being tied around it, or through being stuck to it), by contrast, generated the use of *d'e* 'exist'. In its 'movement' use, *lang* occurs with animates and natural forces that move within their natural habitats. Their movement is confined to a single location, and *lang* could not be used to express translocational motion. Given this distribution, the meaning of *lang* can be paraphrased as 'the Figure has the potential to move within the Ground'. The contextual reading then depends on other factors, e.g., on properties of the Figure: inanimate Figures would trigger an 'attachment' reading, while animate Figures or natural forces would trigger a 'movement' reading.

The database gives furthermore information about speaker variation: most speakers produced and accepted only *d'e* 'exist' in reference to static attachment scenarios (e.g., to hooks projecting off a wall), but some speakers systematically used *lang* in such cases. For these speakers, a second definition of *lang* becomes necessary (paraphrased as 'the Figure is attached to the Ground').

In its third use, *lang* occurs with Figures that are located in high places or in space (e.g., a pot located in a tree, as in 9 below). In such cases, speakers showed some variation: they either shifted to *lang* (as in 9-1), or they chose a locative verb that appropriately described the locative relation (e.g., in 9-2, *t'ong* 'sit' is used to stress that the pot supports itself autonomously in its location). Notice that, in the first case, *lang* is used together with the non-topological preposition *goe* ('location in a place'), while in the second case,

the appropriate locative verb is used together with the topological preposition *N-* ('location at an object').

(9-1)	*Goe-**lang** /*	***goe***	*pyak*	*t'eng-hoe*	*a? (…)*
	NOMZ(sg)-hang/move(sg)	PLACE	fork	tree-exactly	INTERR

(9-2)	*Goe-f'yer*	*nnoe*	***t'ong***	***m**-pyak*	*t'eng*
	NOMZ(sg)-become_big(sg)	LOC.ANAPH	sit(sg)	LOC-fork	tree

zak-yit	*ai?*
again	INTERJ

'(Is it) the one hanging in the tree fork? (…)
'This big one now sits in the tree fork, right?' [DIS_6.4/5-A/N]

The use of *lang* with Figures located in (high) places was probably originally motivated by their similarity to Figures that have 'the potential to move': inanimate Figures tend to be suspended from above (i.e., in a high place); and animate Figures move in their habitats (i.e., in Grounds that can easily be construed as places). The choice of preposition would then have revealed whether the speaker construed the Ground as a place (using *goe*) or an object (using *N-*). In the meantime, however, *lang* has probably acquired the distinct sense of 'location in a place': in this sense, *lang* can occur (a) with Figures that do not have the potential to move, and (b) with Ground phrase elements that are semantically general over 'place' and 'object'.

There are certainly other ways of interpreting the extensional data, and more could be said about the semantics of *lang*. Such an analysis is, however, not the purpose of this paper: the discussion in this section is meant to illustrate that the stimuli-based techniques generate a large database that can be fruitfully exploited for analyzing the semantics of individual expressions (see Hellwig 2003 for details of the analysis).

4.2. Privative oppositions (existential and postural verbs)

Often, there are some expressions that seem to be used interchangeably with other expressions. In such cases, it is usually very difficult to capture the semantic relations involved. For example, in elicitation sessions, Goemai speakers explicitly state that *d'e* 'exist' can replace any of the four postural verbs (*lang* 'hang/move', *t'ong* 'sit', *d'yem* 'stand', *t'o* 'lie'). Given this possibility, it could be assumed that the existential encroaches

onto the locative domain (as is the case in many different languages), and that it functions there as a semantically vacuous copula (similar to English 'be').

An analysis of the database, however, reveals a much more complex picture: it shows that (i) both the existential and the posturals are used to form existential statements and that (ii) the distribution of the existential is determined by its opposition to the posturals (i.e., it is not semantically vacuous). Both points are illustrated in the following paragraphs.

First, the posturals themselves are used to form existential statements. For example, in (10) below, speaker N. uses *t'o* 'lie' in the negative locative construction. He does not negate the position of the rope, but rather its existence in the specified location. Further analysis of the data indicates that the posturals only occur in contexts where the existence of a specific referent at a specific location is asserted or negated. As a consequence, sessions that merely elicit translation equivalents of English existential structures only ever generate Goemai *d'e* 'exist'. In fact, without the techniques described in section 3, the grammatical description of existential statements in Goemai would have been restricted to the description of *d'e* 'exist' – while the role of posturals would have gone undetected.

(10) A: *K'yang* *goe-t'o* *k'a* *muk-hoe*
rope NOMZ-lie(sg) HEAD(sg) 3Sg.Poss-exactly

fa?
INTERR

'What about the rope that lies on its top?'

N: *Kwai. (…)* ***K'yang*** ***t'o*** ***k'a*** ***ba***.
no rope lie(sg) HEAD(sg) NEG

'No. (…) There lies (= exists) no rope on top.'
[COMP_7-A/N]

Second, in locative contexts, the existential is only volunteered under one of the following conditions: the position of the referent is either unknown (e.g., because the Figure is hidden from view), or non-describable with a postural (e.g., because it is statically attached to the Ground; see section 4.1), or non-canonical (in the presentative construction only). In all other contexts, the appropriate postural is the preferred option. This distribution of the existential has consequences for its interpretation: upon hearing it, the addressee assumes that one of the above conditions holds. This

interpretation can be illustrated with the help of (11) below. The example is taken from a matching game, where speakers compare photos of bottles in different positions (upright, on side, upside down). Speaker A. picks a photo and introduces the bottle by means of *d'e* 'exist' in the presentative construction (11-1). In his response, speaker N. seeks clarification (11-2). Notice that he does not include the upright bottle in his response, but only the two non-canonically located bottles (the 'lying' bottle, and the 'standing', i.e., upside-down bottle). He apparently assumes that speaker A. would have used *t'ong* 'sit' if he had the canonically-located bottle in mind.

(11-1)	A:	*Ndoe*	*kwalba*	*hok*	*na*	*n-**d'e***	*zak-yit.*
		some	bottle	DEF	PRES	PRES-exist	again

'Behold, another bottle is (here) again.'

(11-2)	N:	*Goenang*	*nd'ûûn?*	*Goe-**t'o***	*n-**t'o***
		which(sg)	INSIDE	NOMZ(sg)-lie(sg)	ADVZ-lie(sg)

nnoe	*a*	*ko*	*goe-**d'yem***
LOC.ANAPH	INTERR	maybe	NOMZ(sg)-stand(sg)

*n-**d'yem**?*
ADVZ-stand(sg)

'Which among (them)? (Is it) this one that lies lying,
or the one that stands standing?' [DIS_14.5/6-A/N]

The distribution of the existential vis-à-vis the posturals can be explained by means of general pragmatic principles. The data suggests that they are in a privative opposition: the semantics of the existential are more general ('existence at a location') and are entailed by those of the posturals ('existence at a location in a specific position'). As suggested by a number of case studies, the distribution of expressions in privative oppositions is governed by the following pragmatic principle: the use of the less informative term (i.e., the existential) implicates that the more informative term (i.e., the relevant postural) is not applicable – if it were applicable the speaker would have used the more informative term in the first place (see Levinson 2000b for the general framework; see Hawkins 1991; Levinson 2000a; Wilkins and Hill 1995 for some case studies). In the case of Goemai, this general principle explains the restriction of the existential to unknown, non-describable or non-canonical locative relations.

4.3. Expressing non-canonicality

The database made it possible to discover and investigate different types of uses of one expression, e.g., of a postural verb. In all tasks, non-canonical locative relations generated two different usage patterns. In one pattern (labeled 'positional'), the speaker used the postural verb most appropriate to the current locative relation. In the other pattern (labeled 'classificatory'), the speaker used a so-called 'default' postural, i.e., (s)he used the postural that (s)he would have used if the referent were in a canonical relation. For example, calabashes and bottles would *t'ong* 'sit' by default.

Example (12) (taken from a matching game) illustrates a difference in how hearers interpret the two uses. In (12a), speaker A. uses the non-default postural *d'yem* 'stand' to focus on the non-canonical position of the calabash depicted in his picture (upside down). Speaker N. does not accept it because it does not adequately describe the calabash in his picture (upright). In (12b), by contrast, speaker A. uses the default postural *t'ong* 'sit' in reference to an upright bottle. In this case, speaker N. accepts it as an adequate characterization of the referent – even though the bottle in his picture is upside down.

(12) a. A: *To /* *d'a* *n-**d'yem*** *k'a* *k'aram.*
okay calabash PRES-stand(sg) HEAD(sg) mat

'Okay, behold, a calabash is standing on the mat.' (= upside down)

N: *D'a- /* *d'a* *na* *n-**d'e*** *d'i*
calabash calabash PRES PRES-exist LOC.ANAPH

k'a *k'aram. (…)* *M-maan* ***t'ong***
HEAD(sg) mat NOMZ-1Sg.Poss sit(sg)

*n-**t'ong***.
ADVZ-sit(sg)

'The calabash-, behold, the calabash is being there on the mat. (…) Mine sits sitting.' (= upright) [COMP_12-A/N]

b. A: *Goe* *na* *kwalba* *n-**t'ong*** *k'a* *kwati. (…)*
2Sgm see bottle PRES-sit(sg) HEAD(sg) box

'Behold, see a bottle sitting on the box.' (…) (= upright)

N:	*M-maan*	*a*	*haam-yim.*	*Ni*	***t'ong***	*d'i*
	NOMZ-1Sg.Poss	FOC	color-leaf	3Sg	sit(sg)	LOC.ANAPH

k'a.
HEAD(sg)

'Mine is of green color. It sits there on top.' (= upside down)
[COMP_3-A/N]

Similar differences in interpretation are found in all comparable situations, suggesting that the two uses have a different status. The difference can be captured with the help of a general pragmatic principle (see Levinson 2000b): to use a marked expression (i.e., a non-default postural) draws attention to a marked situation (e.g., the referent is non-canonically located). Upon hearing the non-expected postural, the addressee looks for some non-stereotypical property, and, as a consequence, does not repeat this postural if it does not match the current position (as in 12a). Upon hearing the unmarked default postural, by contrast, the addressee does not pay attention to the current position, but rather takes the postural to refer to the class of the referent (i.e., of objects that 'sit' by default). As a consequence, it is repeated, even if it does not match the current position (as in 12b).

Further semantic and pragmatic analysis shows that each nominal concept is assigned to one – and only one – default locative verb. The analysis thus establishes that expressions belonging to a major form class (i.e., to the class of verbs) can serve as nominal classifiers (i.e., in specific grammatical environments, they exhaustively divide the set of nominal concepts into mutually exclusive classes). Notice that it would not have been possible to prove the existence of the classificatory use on the basis of the naturally-occurring data alone. In the stimuli-based tasks, by contrast, the reference context (i.e., the current position of the referent) is known – and this makes it possible to distinguish the classificatory from the positional use, and to systematically investigate the conditions for its occurrence (see also section 3.2).

4.4. Delimiting semantic fields (locative and dispositional verbs)

As mentioned in section 2, there are approximately 35 different verbs (belonging to two different form classes) that can occur in the Goemai

locative construction. But although verbs of both form classes can occur there, the database shows that their distribution differs considerably.

The data shows that a 'where' question nearly always results in a spontaneous response with a locative verb. Dispositional verbs, by contrast, occur only infrequently. Some speakers offer them as alternatives in their subsequent responses, but other speakers explicitly reject them. Interestingly, such speakers only reject dispositionals in the locative construction (as in 13a), but freely produce them in other constructions, e.g., combining with locative verbs in serial constructions (as in 13b). That is, although their occurrence in the locative construction is rejected, the dispositionals nevertheless seem to appropriately describe some aspect of the spatial situation. Furthermore, their co-occurrence with locative verbs could suggest that the two verbs code different, but complementary, aspects of the same situation.

(13a) * *Tasa* ***d'ûût*** *sek* *t'u.*
plate lean BODY calabash_bottle

'The plate leans against the bottle.' [DRAW_05-A]

(13b) *Tasa* ***d'ûût*** ***d'yem*** *sek* *t'u.*
plate lean stand(sg) BODY calabash_bottle

'The plate stands leaning against the bottle.' [DRAW_05-A]

Further analysis then shows that the dispositional verbs occur in the locative construction under one of the following conditions: the speaker has witnessed the state change that preceded the state (e.g., the speaker has observed a person getting into a leaning position), or the Figure is in a non-canonical locative relation (i.e., in a relation that is likely to be interpreted as the result of a prior state-change). That is, their distribution reflects their lexical properties: they code a state change, not a state (see section 2). But while they can be integrated into the locative construction (under the conditions specified above),[14] they always assert the current spatial disposition of the referent – unlike locative verbs, they can never be interpreted in either an existential way (see section 4.2) or a classificatory way (see section 4.3). As such, they constitute a marked alternative, drawing the hearer's attention to a marked aspect of the situation.

Again, the different distribution of locative and dispositional verbs would not have been noticed when taking only the elicited and the naturally-occurring data into account. The elicited data would have shown that

dispositional verbs can occur in the locative construction – without revealing the conditions for their occurrence, and without showing their marked interpretation. The naturally-occurring data would have shown the distribution of locative verbs – but given the infrequency of dispositional verbs in the locative construction, their occurrence may have been overlooked altogether. In the end, the traditional grammatical analysis of lexical properties (see section 2) and the semantic analysis converged and helped to establish the boundaries of the two semantic fields of locative and dispositional verbs. Furthermore, the locative construction constitutes the source for a number of other constructions, e.g., the demonstratives. Since the dispositional verbs constitute marked alternatives in the locative construction, it is not surprising that only the locative verbs were grammaticalized further to occur as classifiers in the demonstrative.

5. Summary and conclusion

This paper focussed on the coding of postural semantics in Goemai grammar. Although Goemai grammar – just like the grammars of some other languages – pays close attention to the coding of such information, grammatical descriptions often have difficulties describing this phenomenon in an adequate way. It was argued that this difficulty largely results from a lack of suitable semantic data. The paper then illustrated and compared techniques employed in the collection of semantic data (section 3), and showed possibilities of how the extensional data could be taken as the basis for further semantic analysis (section 4). Although the presented analysis was cast in a specific framework (i.e., assuming a distinction between semantics and pragmatics, working with a monosemy bias, and assuming the existence of constructions as independent form-meaning pairings), the need for extensional data – i.e., for information about the usage of an expression, its distribution and its interpretation in context – is independent of the framework.

The stimuli-based techniques generated a database that made it possible to conduct a comprehensive semantic analysis. This analysis, in turn, is of importance to the grammatical analysis. Compare the analysis sketched out in section 2 (based on elicited and naturally-occurring data) with that in section 4 (based on stimuli data). In addition to developing an understanding of the semantics of each individual expression (section 4.1), the semantic analysis discovered a number of aspects that were previously

overlooked: section 4.2 showed that existential statements are formed by means of all five locative verbs (not only by means of the existential predicate *d'e*); section 4.3 showed that Goemai has a system of nominal classification coded in a set of five classificatory verbs; and section 4.4 showed that, under certain conditions, verbs of a different form class can occur in the locative construction – but they do not constitute its typical fillers, they receive a marked interpretation and they do not undergo the same grammaticalization processes as locative verbs.

All these aspects are relevant to the grammar of locative relations in Goemai. It is unlikely, though, that a non-semantic approach would have noticed them. Ameka and Levinson (in prep.-b), e.g., argue that some of the findings presented in section 4 are of relevance to other languages that have similar postural-type verb systems. Unfortunately, for most languages, the information that is necessary to prove or disprove their claim is not available – just as it was not available in the preliminary analysis in section 2.

While the grammatical analysis thus benefits from an in-depth semantic analysis, such an analysis may pose problems of a more practical nature: it is difficult and time consuming, and may therefore not be feasible for all parts of the grammar. This is a valid problem, nevertheless it will be worthwhile to conduct such an analysis for core parts of the grammar – very likely, other parts of the grammar will benefit as well. For example, in the case of Goemai, the analysis was not only concerned with a restricted set of five locative verbs, but also with the TAM system, verb serialization, lexical aspect and argument structure, non-verbal equational constructions, and the deictic system (as postural-type elements play an important role in all these areas). That is, the semantic analysis of five locative verbs made it possible to describe a large part of Goemai grammar from a semantic perspective.

Notes

1. I am very grateful to Felix Ameka, Alan Dench, Sonja Eisenbeiß, Nick Evans, Martina Faller and Friederike Lüpke, who have given valuable comments on earlier drafts of this paper. All remaining mistakes are, of course, my own.
2. My thanks go to the people of Kwande village, and especially to Mr. Louis Longpuan, without whose invaluable help this paper could not have been written. I also thank the Max Planck Institute for Psycholinguistics, Nijmegen, for funding the field research.

3. In addition to the grammars, there are some studies available that investigate postural-type expressions from a semantic or cognitive angle. However, most of them are concerned with the well-described Germanic languages (but see, e.g., Ameka and Levinson in prep.-a; Lang 1975; Merlan et al. 1997; Newman 2002). Some of them employ methods comparable to the ones discussed in this paper, and some explicitly discuss questions addressed in this paper.
4. The terms 'Figure' and 'Ground' are adopted from Talmy (1985).
5. In rendering the Goemai phonology, I use an adapted version of the practical orthography developed by Sirlinger (1937). The following symbols may not be self-explanatory: p', t', k', f', s', sh' = non-aspirated obstruents (symbols without the apostrophe represent their aspirated counterparts); b', d' = implosives; oe = [ə]; û = [ʉ].
   The abbreviations used in the interlinear glosses are as follows:

ADVZ	adverbializer	NEG	negation
Cl	classifier	NOMZ	nominalizer
COM	comitative	OBL	obligative
COMP	complementizer	Pl, pl	plural
DEF	definite	Poss	possessive
DEM.PROX	proximal demonstrative	PRES	presentative
FOC	focus	PROGR	progressive
INTERJ	interjection	PUR	purpose
INTERR	interrogative	Sg, sg	singular
LOC	locative preposition	SUB	subordinator
LOC.ANAPH	locative anaphor	/	intonation break
m	masculine		

   The source of an example sentence is given in square brackets, following the free translation.
6. The semantic analysis is based on two underlying assumptions. First, it is assumed that an expression is monosemous unless the data forces an interpretation in terms of polysemy. Second, it is assumed that there is a distinction between semantics and pragmatics. Although the semantic analysis is cast in this particular framework, many of the methodological questions are independent of the adopted framework.
7. A domain such as space lends itself easily to visual representation, as physical entities move or are located in physical space. But comparable methods can be employed for non-spatial phenomena as well. The field manuals of the Language and Cognition group at the MPI for Psycholinguistics contain detailed suggestions (Danziger 1993; Danziger and Hill 1993; Wilkins 1995; 1999; Levinson and Enfield 2001). See also Levinson (1992) and Pederson et al. (1998) for further discussions. See Berman and Slobin (1994), Chafe (1980), and Givón (1991) for the use of video films. See Eisenbeiss et al.

(1994) for stimuli-based methods in the study of language acquisition. See also the introductory text book by Samarin (1967).

8. A comparable method can be used with stimuli other than pictures: with video stimuli and with physical objects. In the analysis of Goemai, videos were used to generate data on the expression of caused and spontaneously emerging locative relations. Physical objects were used to complement the data generated with pictures. Consultants usually found relations easier to imagine when they were illustrated with objects. In addition, the use of objects allowed for more flexibility, as they could be manipulated on the spot. However, this method was less systematic, in that different consultants could not be presented with exactly the same task. In the end, it proved difficult to keep track of the contextual factors.
9. To be read as 5 out of 5 speakers responded spontaneously with t'o 'lie' as their first answer.
10. Notice that, for some studies, it may be desirable to generate contrastive uses. For this study, however, the picture book setup prevented the occurrence of one important type of use (see section 3.2).
11. Other setups are possible as well, e.g., the two players need not be screened off. Matching games are a common method in psychological research. In linguistics, they are especially used by members of the Language and Cognition group at the MPI for Psycholinguistics (see also footnote 7).
12. These two uses are labeled 'presuppositional' and 'assertional' respectively in (Ameka and Levinson in prep.-a).
13. See Turnbull (2001) for a discussion of similar variables in the context of pragmatic studies.
14. I am following a construction grammar approach here (see, e.g., Goldberg 1995), assuming that constructions are form-meaning pairings that exist independent of the lexical items that instantiate them, i.e., independent of their lexical fillers.

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Taking a closer look at function verbs: Lexicon, grammar, or both?

Eva Schultze-Berndt

1. Introduction

There are several ways in which a reference grammar of a language may incorporate information that is traditionally relegated to the lexicon. First, the grammar can make reference to lexical categories – parts of speech – and subcategories, e.g. formally circumscribed semantic classes. Second, for many lexical items the boundary between "content words" (which are only listed in the lexicon) and "function words" (whose meanings and functions, in traditional grammar writing, are described in the grammar) is difficult to draw. The gradient nature of the distinction between lexical and grammatical elements has long been recognised by functionally-oriented linguists, especially those with an interest in grammaticalisation (e.g. Bybee 1985; Lehmann 1995), and recently even by formally-oriented linguists (cf. e.g. the contributions in Corver and Riemsdijk 2001). For example, it appears entirely justified to treat in a reference grammar function verbs, i.e. closed (sub)classes of verbs which are used productively to form periphrastic predicates, generic nominals which can serve a classificatory function (cf. e.g. Dixon 1982a; Wilkins 2000), or so-called discourse particles, since all of these play an important role in how a particular language is actually used.

In this paper, I concentrate on function verbs (or "light verbs") as an example of a category on the boundary between lexicon and grammar. In many languages, function verb constructions are very frequent, and – to use Sapir's term – are an important part of the "genius" of the language, and need to be considered by anybody – whether language learner or linguist – who wants to get a realistic idea of how the language functions.

Function verbs not only occupy an intermediate position between content words and function words, but the description of their use also often has to make reference to lexical semantic (sub)classes of the elements they

combine with to form complex predicates. Both of these issues are brought out quite clearly in Dixon's (1991: 336–362) discussion of the English verbs *give, have*, and *take,* which are employed as function verbs (or in his terms, "secondary verbs") in complex predicates of the type *have a walk, have a stroke of something, give a laugh, give something a stroke, take a walk,* or *take a sniff of something*.

Thus, function verbs are independent verbs which can be used both as regular simple predicates and as parts of complex predicates. As such, they are clearly lexical items, not just grammatical items, but on the other hand they may fulfil functions that are often fulfilled by *bona fide* grammatical elements in other languages.

It is precisely because of this status and their role in complex predicate formation that function verbs have been the subject of considerable theoretical interest in recent years, as shown by a number of papers, theses and monographs that have been published on the topic (see Section 2.3 for some references). However, in most reference grammars of the languages that feature in these studies, or languages with a similar structure, the role of function verbs has not received the same amount of attention. Although one might expect that the intermediate status of function verbs would lead to an exhaustive coverage of their functions both in grammars and dictionaries of a given language, more often than not this is not the case. Rather, as Dixon (1991: 337) notes for English, function verbs often only receive marginal attention in reference grammars.

Similar remarks can be made for dictionaries – insofar as a dictionary exists for the language in question; as we know, this not the case for many languages of the world, since even linguists who advocate the documentation of small or endangered language often give very low priority to the production, let alone publication, of dictionaries. To the extent that they are accessible, dictionaries rarely provide systematic information on the complex lexicalised expressions formed with function verbs, either in the form of exhaustive listing, or in providing (in the entry of the function verb in question) the semantic generalisations that govern the formation of such expressions. Thus, the remarks of Hacker (1958), referring to the treatment of Hindi function verbs (here termed "auxiliaries") in grammars and dictionaries, have lost nothing of their relevance:

> In den Grammatiken sind die Hilfsverben sehr unzulänglich behandelt. Die Angaben sind nicht nur unvollständig, sondern oft auch ungenau, irreführend oder geradezu falsch. (…) Nur wenig Material konnte aus Wörterbüchern geschöpft werden. (…) Im allgemeinen konnten die Wörterbücher nur zur Feststellung der Bedeutungen isolierter Wörter benutzt werden. [In the

> grammars, the auxiliaries are treated very insufficiently. The statements are not only incomplete, but often also unprecise, misleading or downright wrong … Only little material could be taken from dictionaries. … Generally, the dictionaries could only be used to determine the meaning of isolated words.] (Hacker 1958: 184–196, translation mine, ESB)

In this paper, I will argue that these elements deserve a closer look in grammar writing, and provide some suggestions of how this could be achieved. The paper is structured as follows.

In Section 2, a working definition of function verbs is provided and illustrated with examples from different languages. In Section 3, I review the treatment of function verbs in reference grammars of languages where they are known to play an important role, and put forward some suggestions as to how their role could be more adequately captured. I also argue for a broad conception of "grammar" which licences, from a theoretical perspective, the incorporation of function verbs (and other lexical items with a similar status) in grammatical descriptions. Some conclusions are offered in Section 4.

2. Function verbs: definition and illustration

2.1. A working definition

The term "light verb" was coined for English light verbs by Jespersen ([1942] 1961: 117f.) and more recently is gaining currency in application to languages of other families; it corresponds to what Dixon (1991: 88) has called "secondary verb". The term *Funktionsverb* ('function verb') is prevalent in the German linguistic tradition, with *Funktionsverbgefüge* ('function verb structure') or *Zusammengesetztes Verb* ('compound verb') for the complex predicate. In writing on Indian languages, the terms "explicator verb" and "vector verb" are particularly common, although the terms "aspectual verb" and "auxiliary verb" are also found. The term "auxiliary" is also commonly used by Australianists to describe a similar phenomenon.

In this paper, the terms "function verb" and "light verb" will be applied interchangeably to the verbal element in complex predicates of the type *give a laugh* (the term "light verb" is used in particular to avoid proliferation of the word "function" in a single sentence or paragraph). Complex predicates, in turn, are defined as monoclausal constructions involving two predicative elements which jointly contribute to the valency of the complex

predicate (cf. Butt 1997: 108). The term "host" will be used as a cover term for the other constituent in complex predicates of this type, in order to avoid the question of which constituent should be regarded as the head or "main predicate" in these constructions.

More specifically, for the purposes of this paper, "function verbs" will be defined as forms which

a) are members of the class of verbs and as such may be used as simple predicates in independent clauses
b) are productively used to form complex predicates with members of an open lexical ("host") category (e.g. verb, nominal, ideophone …)
c) in the resulting complex predicate, carry all or most of the verbal inflections that are also found on verbs as simple predicates (if any)
d) are subject to collocational restrictions in their combination with host elements
e) are semantically "light" (while the host carries the main semantic weight in the complex predicate).

This definition, obviously, assumes that a category of verbs can be defined in a language (Criterion a). Moreover, the definition excludes phonologically null elements. It thus conflicts with theoretical approaches which consider a (potentially empty) light verb slot to be part of the basic clause structure in all languages. Likewise excluded are morphemes which are known or likely to have originated from independent verbs but can no longer be used as main verbs, such as the "verbal classifiers" of Gooniyandi (McGregor 1990, 2002) and the three auxiliaries of Wambaya (Nordlinger 1998).

Criterion (b) requires that the function verb productively combines with members of an open lexical class, e.g. nominals or open classes of preverb-like or ideophone-like elements. Complex predicates formed with e.g. preverbs from a closed class, as found in many Indo-European languages, are thus excluded. This criterion is also intended to capture the distinction between productively formed complex predicates and idiomatic phrases, difficult as it may be to draw in practice. Possible syntactic correlates of productivity – depending on the language and the type of complex predicate in question – include the potential for negation and passivisation (cf. Kachru 1987: 375 for Hindi).

While criterion (c) requires the function verb to carry verbal inflections if available in the language in question, in principle, the definition does not exclude combinations of a function verb and another, lexical, verb. Thus, the term "function verb" could also refer to semantically "light" verbs in a

serial verb construction of the type described for Kalam (Pawley 1993). This holds even if they are not formally distinguished from the other verbs in the construction (either because all constituents in the construction inflect for the same categories, or because none of them inflect). For practical purposes rather than for theoretical reasons, the scope of this paper is limited to function verbs which can be formally distinguished from the elements with which they are in combination by the presence vs. absence of certain inflections that correspond either to a finiteness distinction or to a part of speech distinction in the language in question.

In many grammatical descriptions, function verbs are referred to as "auxiliaries", or as semi-auxiliaries half-way on a grammaticalisation chain between full verbs and auxiliaries (Hopper and Traugott 1993: 108–114). Function verbs can, however, be distinguished from true auxiliaries by criterion (d) above, since the term "auxiliary", at least in the usage of most linguists, is restricted to those items which are part of an inflectional paradigm of a given part of speech and can be used with all, or at least a clearly defined subset, of its members, more or less independently of semantic considerations (but consider Heine 1993: 70 for a less restricted definition). This criterion still does not define a watertight boundary between function verbs and auxiliaries, even though some authors (e.g. Butt and Geuder 2001) have recently argued for a strict separation of these categories. A good example is the much-discussed auxiliary selection (i.e. the choice between the equivalents of 'have' and 'be' – with undisputed auxiliary status – in some Romance and Germanic languages), which is sensitive to a single semanto-syntactic component of the verb, its agentivity (or "unaccusativity"). One could regard auxiliaries and function verbs as the periphrastic counterparts of inflectional and derivational morphology, respectively, for which the distinction is also generally possible but in many individual cases fraught with difficulties.

Another problem of definition arises where a single "dummy" verb – usually one with a general action meaning ('do') – is used extensively in complex predicate formation. In most authors' usage, this type of verb also falls under the definition of "light verb" (although the term "auxiliary" is also employed). In these cases, it is more difficult to speak of collocational restrictions between the verb and the host, as required by criterion (d) above, since the function verb is not in semantic opposition to other function verbs. However, the light verb in this case is often still lexically restricted, in its occurrence, to certain subclasses of host. This is the case e.g. in Kanuri (Hutchison 1981: 90–111), where the "dummy verb" is obligatory with items of a certain lexical class ("verbs 2"), but does not form part

of the paradigm of the regular class of verbs ("verbs 1"). This type of light verb will not be considered in this paper.

Criterion (e), requiring function verbs to be semantically "light", is perhaps the most problematic, since in practice, it may prove difficult to distinguish function verbs from "ordinary", "heavy" verbs, except perhaps in the case of those languages (e.g. some Australian languages) where function verbs form a distinct part of speech category. The difficulty of defining and delimiting the class of function verbs in a language is also reflected in the practice of grammar writing: often, no clear indication of the number and type of function verbs is provided in a grammar. Rather, in one grammar after the other, one finds expressions like "verbs such as …", "the verbs … among others" or "the verbs most frequently used are …", followed by a fairly restricted list of perhaps 5-10 items. In other cases, reference grammars of one and the same language make contradictory statements about the size of the class. For example, Heidolph et al. (1972: 74–78) list 13 function verbs for German, but indicate that they do not wish to draw a strict line between function verbs and auxiliaries. Griesbach et al. (1986: 280–287), on the other hand, list around two hundred function verbs, and Engel (1996: 407), likewise, speaks of more than a hundred function verbs occurring in construction with an object noun phrase. In section 3.3 below it will be suggested that the frequency and productivity of a verb in complex predicate formation may be a more reliable indicator of its status than the semantic criterion alone. Moreover, at least for languages with nominal hosts, semantic weight also has a syntactic correlate. In true function verb expressions, unlike in ordinary noun-verb collocations, the host cannot be pronominalised (e.g. saying *she took it* rather than *she took a walk*), since the semantic weight of the light verb is not sufficient (cf. e.g. Helbig and Buscha 2001: 88).

For the purposes of the present paper, the scope of the discussion will be limited to verbs which are semantically general in the sense that they do not have a semantic predisposition to be complement-taking predicates; this excludes modal verbs such as *want* and phasal predicates such as *begin.* Some examples of those function verbs that fall under the scope of this paper are provided in the following section.

2.2. Some examples

Function verbs are an important feature in many European languages, but also in Iranian languages, Indian languages of both Indo-Aryan and Dravidian subgroups, East Asian languages such as Japanese, Korean, and Chi-

nese, and Northern Australian languages. Here, I can only give examples from a few of these language groups.

Most research on function verbs has been undertaken on European languages, notably English and other West Germanic languages (cf. e.g. Persson 1975; Yuan 1986; von Polenz 1987; Koo 1997: 68-79; Van Pottelberge 2001 for German; and Dixon 1982b, 1991: Ch. 11; Wierzbicka 1982, and Cattell 1984, for English). English function verbs were briefly illustrated in Section 1. In German, two types of function verb constructions can be distinguished, one with a deverbal nominal, and the other with a prepositional phrase involving a deverbal nominal. The latter type is illustrated in (1). In (1a), the function verb *kommen* 'come' is used in an inchoative interpretation. As the contrast between (1a) and (1b) shows, the verbs *kommen* 'come' and *bringen* 'bring' occur with the same host, with a concomitant change in transitivity. Moreover, the two complex expressions in (1a) and (1b) contrast with the simple verb (1c); this is true for many but by no means all function verb expressions in German (cf. Eisenberg 1994: 309).

(1) a. *und* *da* *jetzt* ***kommt*** *(…)* *die* *ganze* *Action*
and there now come:PRS.3SG DEF whole action

eigentlich *erst* ***ins*** ***Rollen***
really only into:DEF roll:ACTNOM

'and there now the whole action really only gets under way' (lit.: 'comes to roll') (Kölnkorpus[1]: "Polanski" [conversation about a movie])

b. *wir* *haben* *da* *die* *Sache* *erstmal*
we AUX:PRS.1PL there DEF thing first

ins ***Rollen*** ***bringen*** *müssen*
into:DEF roll:ACTNOM bring:INF must:INF

'we had to get things going first' (lit.: 'bring the thing to roll') (Kölnkorpus: "Tasso")

c. *der* *Ball* ***rollte*** *langsam* *ins* *Tor*
DEF ball roll:PST:3SG slowly into:DEF goal

'the ball rolled slowly into the goal' (constructed)

Iranian languages such as Persian and Kurdish rely very heavily on function verb constructions. In fact, it has been argued that (simple) verbs in these languages form a small class or even a closed class: Consequently, most light verb constructions do not have simple verb counterparts. Karimi (1997: 276) states that the number of verbs in contemporary Persian does not exceed 115, of which many are infrequent. Haig (2000) argues that verbs in Kurdish are a closed class, and presents the result of a text count according to which 60 verbs account for over 96% of all verb tokens.

Examples (2) and (3) illustrate complex predicates involving a light verb and a nominal host in Persian. (Persian, like German, in addition has function verbs constructions involving a prepositional phrase). Again, more than one light verb may appear with the same host, and the choice of light verb influences transitivity. The contrast between (2) and (3) also shows that more than one light verb can be used both in transitive and in intransitive complex predicates, depending on the lexical semantics of the host (cf. also Goldberg 1996).

(2) a. *Pezešk* *mæriz-ro* ***šœfa*** ***dad***
doctor patient-OBJ cure give.PAST.3SG

'The doctor cured the patient' (Megerdoomian 2002: 69)

b. *mæriz* ***šœfa*** ***yaft***
patient cure find.PAST.3SG

'The patient was cured' (Megerdoomian 2002: 69)

(3) a. *Hušœng* *Nader-ro* ***gul*** ***zœd***
Hushang Nader-OBJ deceit hit.PAST.3SG

'Hushang deceived Nader' (Megerdoomian 2002: 68)

b. *Nader* ***gul*** ***xord***
Nader deceit eat.PAST.3SG

'Nader was deceived' (Megerdoomian 2002: 68)

It is well known that function verbs are also prominent as an areal feature in South Asian languages of different genealogical affiliation (cf. e.g. Hook 1974, 1991; Abbi 1994: Ch. 3). The large Indo-Aryan languages, like Hindi

and Urdu, have been particularly well studied in this respect (cf. Mohanan 1994, 1997; Butt 1995, 1997; Butt and Geuder 2001).

Urdu has two distinct function verb constructions, one involving an object noun phrase as the host, and the other involving a bare verb stem, that is, a nonfinite form of the verb. Only the latter is illustrated in (4). In Urdu, as in German, complex predicates formed with a light verb often contrast with a simple, finite verb ((4a-c) vs. (4d)), although the number of simple verb also seems to be fairly small; Butt and Geuder (2001: 328) provide an estimate of around 200 verbs.

As in German and Persian, the choice of verb in the complex predicate may serve to express distinctions of transitivity ((4a-b) vs. (4c)). Some of the distinctions expressed by the choice of light verb are not easily captured either in terms of a grammatical feature or in an English translation. The verb *de* 'give' in (4a) simultaneously indicates completion of an action and outward directedness, while *le* 'take' in (4b) expresses completion and lack of outward direction (e.g. in the case that the action is performed for the actor's own benefit) (Butt and Geuder 2001).

(4) a. *Naadyaa=ne* *xat* ***lik^{h}*** ***dii-yaa***
Nadya=ERG letter.M.NOM write(NFIN) give-PERF.M.SG

'Nadya wrote a letter (completely, for the benefit of someone else)' (Butt and Geuder 2001: 327**)**

b. *Naadyaa=ne* *xat* ***lik^{h}*** ***lii-yaa***
Nadya=ERG letter.M.NOM write(NFIN) take-PERF.M.SG

'Nadya wrote a letter (completely)' (Butt and Geuder 2001: 331)

c. *vo* *xat* ***lik^{h}*** ***par-aa***
3SG.NOM letter.M.NOM write(NFIN) fall-PERF.M.SG

'He "fell to" writing a letter' (Butt and Geuder 2001: 331)

d. *vo* *xat* ***lik^{h}-aa***
3SG.NOM letter.M.NOM write-PERF.M.SG

'He wrote a letter' (Butt and Geuder 2001: 330)

A somewhat different type of light verb construction is an areal feature found in a number of Northern Australian languages, cross-cutting genea-

logical groupings. In these languages, the host element is not a nominal, but comes from an open class of underived predicative elements which will be termed "coverb" here. They constitute a part of speech distinct from both nominals and inflecting verbs (other terms found in the literature include "preverb", "verbal particle", and "uninflecting verbs"). Coverbs cannot take verbal inflections or occur as main predicates in independent clauses. Consequently, in these languages, most predicates are complex, and complex predicates usually do not have simple counterparts (although most of the inflecting verbs may be used either as simple verbs or as function verbs). Function verbs of this type in Australian and Papuan languages have also been analysed as event classifiers (e.g. Capell 1979; Silverstein 1986; Schultze-Berndt 2000; McGregor 2002; and Pawley 1969).

The data provided for illustration come from my own fieldwork on Jaminjung, a language belonging to the Jaminjungan or Yirram subgroup of the Mirndi family. In Jaminjung and some other (though not all) Northern Australian languages, as in Persian, inflecting verbs form a small class. In Jaminjung, the verb class (around 35 members) is even smaller than in Persian. As examples (5) and (6) show, more than one function verb can occur with the same host.

(5) a. *gugu-ni=biya* ***wurlmaj*** ***nga-wu-ngarna***
water-ERG/INSTR=now splash.water 1SG>3SG-POT-give

'I will put it (fire) out with water'

b. ***wurlmaj*** ***gan-angu***
splash.water 3SG>3SG-get/handle.PAST

'she put water on her' (ritual manner of introducing a stranger to a place)

(6) a. ***dibird*** ***ga-yu*** *langiny-gi*
be.wound.around 3SG-be.PRS tree-LOC

'(the snake) is wound around a tree'

b. ***dibird****=biji* ***yaniny-ma***
be.wound.around=only IRR:3SG>2SG-hit

'(the rock python won't bite you), it will only wind itself around you'

c. ***dibird*** ***nganth-angu*** *ngarrgina*
be.wound.around 2SG>3SG-get/handle.PAST 1SG.POSS

mununggu
rope

'you tangled up my fishing line'

The choice of verb may indicate a difference in transitivity (cf. (6a) vs. (6b-c)), but usually, in addition, it reflects other aspects of the event in question. Thus, the verb *-ngarna* 'give' in (5a), like its counterpart in Urdu illustrated in (4a), indicates outward directedness of an action, while the verb *-angu* 'get, handle' in (5b) and (6c) marks an event as one of physical or metaphorical manipulation, and the verb *-ma* 'hit', in one of its uses, can indicate complete affectedness of an undergoer (for more information, see Schultze-Berndt 2000: Ch. 5).

2.3. Properties of function verb constructions

At first sight, the examples of function verbs provided in the preceding subsection look remarkably similar. In particular, in all the languages illustrated, many hosts can combine with more than one function verb. Consequently, the function verb, rather than simply serving as a dummy verb and carrier of the verbal inflections, makes a semantic contribution to the overall expression. For example, a change in light verb may lead to a change in transitivity of the complex predicate.

However, on closer inspection, light verbs play a rather different role in the languages under consideration. The first parameter in which languages may vary is the types of hosts that function verbs may combine with. As we have seen, the hosts may be underived nominals, deverbal nominals, adpositional phrases, or members of a part of speech distinct from both nominals and verbs. Moreover, languages – like most of the languages illustrated in Section 2.2 – may employ more than one type of host in function verb expressions.

The second parameter on which languages differ is the size of the verb class. In some of the languages with function verb constructions, the class of true verbs is quite small, and consequently most predicates are complex predicates which do not alternate with simple verbs. Other correlates of the small class or closed-class status include a scarcity of morphological means for deriving verbs from verbs or from members of other word classes such

as nominals, and the integration of loanwords not as verbs but as members of the host category employed in light verb constructions (this point will be taken up again in Section 3.3). An overview of the similarities and differences between the four languages illustrated in Section 2.2 is provided in Table 1.

Table 1. Comparison of the functional load of function verbs (FV) structures in four languages

	German	Urdu	Persian	Jaminjung
Types of FV constructions	1. PP + FV 2. NP + FV	1. NP + FV 2. V_{nfin} + FV	1. PP + FV 2. N + FV	Coverb + FV
Number of (inflecting) verbs	open class	open class, but n ≈ 200	closed class, n ≈ 115	closed class, n = 35
Simple verbs corresponding to FV structures	most	all?/most for type 1, but not type 2	some	none (in independent clauses)
V-V deriving morphology	yes, productive	yes, e.g. causative	yes, e.g. causative	only reflexive
N-V deriving morphology	yes	only non-productive	no	no
FVs used to integrate loans	rarely	main strategy	main strategy	only strategy

This brief overview shows that in many languages, in particular in languages with a small class of verbs, function verb constructions are very frequent and have a high functional load. This alone would appear to be a good reason to give them sufficient attention in a reference grammar.

In addition, function verbs are of considerable theoretical interest to linguists in a number of domains. A recurring topic is that of the syntactic properties and appropriate syntactic analysis of the complex predicate formed with function verbs, given its intermediate status between a lexical and a syntactic entity (cf. e.g. Cattell 1984 for English; Butt and Geuder 2001 for English and Urdu; Goldberg 1996, Karimi 1997, Megerdoomian 2002 for Persian; and Nash 1982, McGregor 2002 for several Australian languages). Related to the problem of syntactic analysis is the analysis of the argument sharing (or "argument merger") between function verb and host (cf. e.g. Butt 1997 for Urdu; Mohanan 1994, 1997 for Hindi; Haig

2002 for Kurdish; Wilson 1999 for Wagiman; Schultze-Berndt 2000: Ch. 4 for Jaminjung).

Another line of research is concerned with the semantics of function verbs (e.g. Hacker 1958 for Hindi; Yuan 1986 for German and Chinese; Wierzbicka 1982, Dixon 1982b, 1991: Ch. 11 for English), as well as their potential for taking on grammatical or semi-grammatical functions, i.e. their possible grammaticalisation chains (e.g. Hook 1991 for Indian languages; von Polenz 1987 for German).

Finally, a number of publications assess the role of function verbs in language contact and areal convergence (e.g. Romaine 1989: 120-164 and Myers-Scotton 1993: 112–116 from the point of view of bilingual interaction in general; Masica 1976: Ch. 5, Abbi 1994: Ch. 3 for Indian languages; Dixon 2001 for Australian languages).

Still, despite the apparent importance of function verbs for the description and analysis of many languages, reference grammars (and to some extent also dictionaries) often contain very little information on these verbs and the complex predicates they are used to form. The treatment of function verbs in reference grammars is the topic of the following section.

3. The treatment of function verbs in reference grammars: Theory and practice

The phrase "theory and practice" in the section heading has at least two different readings. The first concerns the contrast between ideal ("theory") vs. actual ("practice") grammatical descriptions: this section contains both a review of the treatment of function verbs in existing reference grammars, and suggestions (which admittedly reflect personal preferences) as to what information might be included "in theory" in an ideal reference grammar.

The second reading of "theory and practice" concerns the relationship between linguistic theory on the one hand, and the practice of grammatical description and documentation on the other hand. It will be argued here that theoretical conceptualisations of grammar and lexicon influence what is included in or omitted from language descriptions. I will also provide the sketch of a model of grammar that provides the theoretical foundation for incorporating, in a reference grammar, information that is often assumed to be "lexical".

For the purpose of assessing the treatment of function verbs in currently available language descriptions, I surveyed some 40 reference grammars of languages where function verbs of different kinds are known to play an

important role. Both the selection of languages covered and the selection of grammars is eclectic rather than systematic, since the main aim of this paper is not a comprehensive survey of the treatment of function verbs cross-linguistically (which is far beyond its scope), but rather the illustration and discussion of some recurring issues that arise from attempting to fit function verbs into the mould of standard reference grammars. The languages for which grammars were surveyed for this paper come from the West Germanic, Indo-Aryan and Iranian subgroups of Indo-European, from the Dravidian family, and from various subgroups of Australian languages. Moreover, for practical reasons, I have limited myself to grammars written by scholars who are working mainly in the Western tradition (even though some of them are of non-Western origin), and no attempt has been made to include the treatment of function verbs in other traditions of grammar writing.

The suggestions put forward in this section do not amount to an attempt at standardisation. On the contrary, I view grammar writing as an art which resists standardisation, both because of cross-linguistic differences that demand different approaches, and because of individual differences between authors. Rather, I have attempted to specify the type of information that users of a grammar – whether they are interested in learning the language or whether they approach it with the goal of cross-linguistic comparison – will need in order to get a good grasp of the functional load of light verbs in a language, especially where this functional load is high.

The specific issues addressed in this section cover the theoretical analysis of complex verb constructions, with its practical implications for their place in the outline of a reference grammar (Section 3.1), the meaning and function of light verbs (Section 3.2), and their frequency and functional load (Section 3.3).

3.1. Analysis of function verb constructions and their place in a reference grammar

As already pointed out above, complex predicates formed with function verbs have a double nature: they are syntactically complex and (more or less) productive, but at the same time, they also form (more or less) lexicalised collocations. This double nature is, for example, reflected in the title of the section in Dixon (1976) (“Topic E: Simple and compound verbs: conjugation by auxiliaries in Australian verbal systems”) which comprises papers on function verbs and complex predicates in Australian languages, of the

type illustrated in examples (5) and (6). The term "compound verb" stresses the lexicalised nature of the combinations, whereas the expression "conjugation by auxiliaries" reflects their syntactic and productive nature.

As a result of their dual nature, complex predicates formed with function verbs do not easily fit into the standard outline of reference grammars with their division into "Morphology" (possibly divided into separate chapters by part of speech), "Phrasal syntax" and "Clausal syntax". Occasionally, this seems to have the result that they are not discussed at all, as in Selcan's (1998) grammar of the Iranian language Zazaki (though the important role of function verbs in this language is acknowledged in another grammar, Paul 1998).

Most frequently, one finds that function verbs are discussed under headings equivalent to "verb morphology", or more specifically, "word formation" or "derivational morphology". Among grammars of Australian languages, examples include Rumsey (1982), McGregor (1994), and Merlan (1994). Other examples are the Persian grammar by Lazard (1992) and the Kurdish grammar by Bedir-Khan and Lescot (1991).

In several grammars of Indo-Aryan languages written in the Lingua Descriptive Series / Routledge Descriptive Series format (based on Comrie and Smith 1977), function verbs and the complex predicates formed with them are treated in the subsection on "Compounding" (2.2.6), embedded in the section on morphology. Examples are Asher and Kumari (1997: 401–403) for Malayalam, Bhatia (1993) for Punjabi, Sridhar (1990) for Kannada, and Mahootian (1997: 283f.) for Persian.

Grammars where complex verbs are discussed under the heading of "Clausal Syntax" are found more rarely, although the Djaru grammar by Tsunoda (1981) is one example. Paul (1998), a grammar of Zazaki, treats N-V collocations formed with light verbs both under the heading of "Verb" (p. 100f.) and under the heading of "Syntax of the clause" (pp. 131–133); the information is partly repeated verbatim. In grammars that have a special chapter or section for verb phrases, the phenomenon naturally falls under this heading, as e.g. in the Maithili grammar by Yadav (1996: 191–209), the Tamil grammar by Schiffman (1999), the Kurdish grammar by MacCarus (1958: 95), or the grammar of the Australian language Ngankikurungkurr by Hoddinott and Kofod (1988).

A few authors reserve a separate section chapter for complex verbs which includes a discussion of the function verbs. Two unpublished Australianist grammars following this approach are Reid (1990) and Green (1989). The treatment of complex verbs involving function verbs in a separate section of the grammar seems to be more common in grammars with a

pedagogical rather than purely descriptive goal, perhaps reflecting the greater sensitivity of authors of pedagogical grammars to the high functional load of these structures. Examples are the Persian grammar by Lambton ([1953] 1961), the Hindi grammar by McGregor (1995), and the Urdu grammar by Schmidt (1999).

Some alternative possibilities are also attested. Thus, a certain tradition seems to exist among grammarians of German of discussing function verbs as a subclass of verbs in the "part of speech" chapter (e.g. Heidolph et al. 1972: 74–78; Engel 1996: 407–409; Zifonun et al. 1997: 53f.; Helbig and Buscha 2001: 68–92).

In a number of grammars (e.g. Rumsey 1982: 74 for Ungarinyin; Bedir-Khan and Lescot 1991: 119 for Kurdish), the section on parts of speech contains an introductory statement alerting the reader to the frequency of complex verbs alongside simple verbs. Perhaps more surprisingly, such a statement is lacking in many grammars, even if the language in question only has a small class of verbs. For example, in Lazard's ([1957] 1992) oft-cited Persian grammar, it is not until the section on compound verbs, which is one of the last sections of the book, that the reader learns that "[t]he number of simple verbs in Persian is relatively limited" and that "[v]erbal phrases … are extremely numerous and very much used" (Lazard 1992: 294).

In many grammars, the information on function verbs is distributed among several sections or chapters, often but not always with cross-references between them. Thus, in Tsunoda (1981), complex predicates in the Australian language Djaru are mentioned briefly (with cross-referencing) in the section on "verb complexes", but a full discussion is found in the section on "preverbs" (i.e. the hosts) (both under the heading of "Syntax"; see above).

Distribution of information among several sections of the grammar is particularly common when light verbs are regarded as fulfilling grammatical functions. For example, for a number of languages, the alternation of intransitive and transitive function verbs with the same main predicate is described as functionally equivalent to a morphologically marked transitivity change or a voice contrast. Accordingly, function verbs are discussed in the section on voice/transitivity change in grammars of these languages, e.g. Mangarayi (Merlan 1982: 132–134), Wardaman (Merlan 1994: 206–207), Urdu (Schmidt 1999: 165–166), Persian (Mahootian 1997: 224), and Malayalam (Asher and Kumari 1997: 270–271). The "voice-like" nature of an alternation between two function verbs is also emphasised by many grammarians writing on German, including Heidolph et al. (1972: 81).

Similarly, function verbs may be discussed under the headings of "Aspect" or "Mood/Modality". In grammars of Indian languages, in particular, there exists a tradition of describing light verbs (or a subset of them) as aspectual verbs (an analysis argued against by Butt and Geuder 2001). For example, Asher and Kumari (1997: 295–296) describe a set of five light verbs in Malayalam as perfective markers (glossed $\text{PERFV}_{1, 2...5}$).

This, admittedly brief, overview of the treatment of function verbs in a selection of reference grammars reveals huge differences between grammarians in their choices for placing the relevant information within the overall outline of a grammar. These differences can hardly be reduced entirely to language-specific differences between the structures in question. Rather, the differences are due, to some extent, to decisions made in the overall organisation of the grammar, and to some extent to theoretical differences in the treatment of structures on the borderline between lexicon and grammar.

As for the first of these factors, there are two possible basic organisational perspectives for a reference grammar (cf. e.g. Mosel 1987, this volume, Lehmann 1989, Comrie 1998). One possibility is to proceed from form to function (the semasiological or analytic perspective), that is, the organisation is exclusively by language-specific categories and constructions, which is both an advantage (in that the language-specific structures are recognised) and a disadvantage (in that comparison of different grammars is made more difficult). The second possibility is an organisation from function to form (the onomasiological or synthetic perspective). This has the advantage of (potentially) facilitating cross-linguistic comparison, but has the disadvantage that information on multifunctional constructions is distributed among several sections of the grammar. In the case of light verbs, it is particularly true that their functions often cannot be neatly assigned to specific categories (e.g. "Aktionsart marking"), because the lexical semantics of the verb is retained to a considerable extent (cf. Butt and Geuder 2001; Van Pottelberge 2001).

But, although most existing reference grammars are indeed predominantly organised from form to function, some mixing of levels can be encountered, accounting in part for the distribution of information on function verb constructions in various parts of the grammar. As pointed out above, this is true to a considerable extent for grammars written in the Lingua Descriptive Studies format (as also indicated by Comrie 1998: 13). In the following, it will be assumed that the outline of the grammar is from form to function, i.e. that function verb constructions are dealt with in a single chapter or subsection of the grammar. This is not to suggest that the

onomasiological perspective (i.e. from function to form) should be given up entirely: it could be reflected in typologically informed indexing and/or cross-referencing (which is often but not always found in current practice). Thus, cross-references could be added to the section on function verb constructions in cases where the light verbs fulfil functions fulfilled by *bona fide* grammatical elements in other languages, e.g. aktionsart marking, causative or detransitive marking, or verbalisation of non-verbal constituents.

The second factor that accounts for the attested differences between grammars in their treatment of function verbs has to do with the theoretical difficulties, in many grammatical frameworks, of analysing structures that are at the same time syntactic in nature (since the constituents are both independent words) and lexical in nature (since combinations of host and function verbs tend to be lexicalised), and where moreover one of the constituents (the function verb) displays properties of a both content words and grammatical morphemes.

It will be suggested here that these different aspects of function verb structures are best captured, in the practice of grammatical description, if one views grammar as a set of constructions, and recognises that grammatical constructions comprise many expressions that are commonly treated as "idiomatic" because they are centred around content words, or words on the boundary between content and function words.

The construction-based approach to grammar has been quite explicitly endorsed by many structuralist linguists such as Bloomfield ([1933] 1970) and Hockett (1958), as well as more recently by those linguists pursuing what has been labelled "Cognitive Grammar" (e.g. Langacker 1987, 1990, Lakoff 1987) and "Construction Grammar" (e.g. Fillmore 198; Fillmore et al. 1988; Kay and Fillmore 1999; Goldberg 1995; Michaelis and Lambrecht 1996; Croft 2001). A construction-based approach is also explicitly or implicitly adopted in many works with a typological-functionalist orientation.

Grammatical constructions can be characterised as conventional pairings of a complex form which is partly schematic, and a constructional meaning, i.e. as complex signs or "schematic symbolic units" (Langacker 1987: 58). Constructions comprise patterns traditionally treated under the heading "morphology" (e.g. a verb stem with a transitivity-changing suffix) as well as patterns traditionally termed "syntactic" (e.g. a verb form preceded by an object noun phrase). This approach therefore easily accommodates expressions that are not easily classified as either "complex words" or "syntactic expressions", including the function verb constructions that are the focus of this paper.

Moreover, constructions in this sense include schemas which are partly filled by a phonologically specified form, if this filler constitutes a necessary part of the larger pattern. The filler in question could be a grammatical formative, e.g. a specific causative suffix which appears in construction with an unspecified slot for, say, an intransitive verb. Partially specified constructions, however, also include structures that are usually treated as idioms, e.g. the X *let alone* Y construction in English (as in *Nancy will not eat cod* ***let alone*** *sardines)*, discussed by Fillmore et al. (1988). The construction-based perspective thus allows for a much broader definition of what is part of the grammar, and makes the strict division between "grammatical" and "lexical" items unnecessary. This may mean that information from the lexicon (or in practical terms, the dictionary of a language) is repeated in the grammar, allowing for redundancy for the sake of a greater adequacy of the language description with regard to language use.

It is easy to see how this broad conception of constructions could be of relevance for the treatment of function verbs. Each combination of a specific function verb with a slot for the relevant class of hosts (typically, a semantically defined subclass of hosts filling a specific syntactic slot, e.g. nominalised verbs) can be analysed as a construction in its own right, which has a specific function or "constructional meaning" (see further 3.2). Translated into grammaticographical practice, it could be treated as a construction at phrasal level, in a separate section.

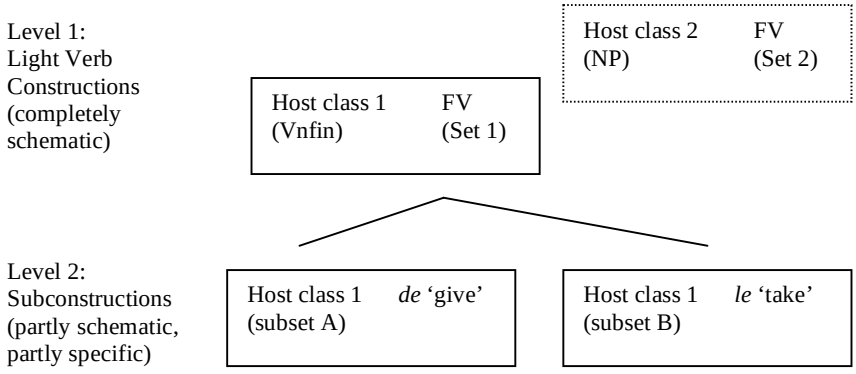
Other information relevant at this level of analysis concerns the selectional restrictions between the function verb in question and the subclasses of the host category that it collocates with, and the argument structure and nature of argument sharing for this particular subconstruction. Assuming a basically semasiological outline of the grammar, all functions of multifunctional light verbs could be discussed in the same section. For example, complex predicates involving the light verb *de* 'give' in Urdu (cf. ex. (4a)) could be described as a construction type where the light verb is responsible for the transitive nature of the complex verb, and has both the functions of indicating completion of the activity denoted by the host, and the outwardly directed nature of this activity (cf. Butt and Geuder 2001).

There are, however, also properties shared by all function verb structures involving a particular host category. These include, obviously, the category of the host (e.g. deverbal nominal, bare verb stem, or a member of a distinct part of speech such as the "coverbs" of Northern Australian languages), but also the degree of syntactic independence of the host and the function verb (as revealed e.g. by modification, determination, scope of negation, and separability). As pointed out in Sections 2.2 and 2.3 above, a

language may have more than one construction at this level. Thus, function verbs in German may combine with either noun phrases or prepositional phrases. Similarly, in many Indo-Aryan languages, light verbs may combine with the bare stem of verbs, with a non-finite form of a verb, or with a nonderived nominal.

It is thus useful to conceive of constructions as forming a taxonomic network. In the case of function verbs, at the upper level of the taxonomy, we find a schematic construction consisting of a slot for a host category and a slot for a set of function verbs, respectively. At the lower level, we find a partially specified construction involving a specific function verb (which is, in this respect, treated like a grammatical formative). By way of example, a small section of such a network for function verb constructions in Urdu is provided in Figure 1.

Figure 1. Constructions and subconstructions involving Light Verbs



3.2. Meaning and function

The most crucial aspect of how function verbs are treated in a reference grammar is, obviously, the discussion of their function. In most of the grammars that I have surveyed, however, the meaning and function of light verbs is only dealt with very briefly if at all. There are some grammars in which no systematic (i.e. verb-by-verb) description of their function is given at all, e.g. the Persian grammar by Mahootian (1997: 283f.) and the grammar of Kannada by Sridhar (1990: 287–289). Statements of one sentence or at most a paragraph per verb are the most frequent option (cf. e.g Yadav 1996: 201–208 for Maithili; Schiffman 1983: 81–90 for Kannada),

and a discussion of more than half a page is quite uncommon. The twenty pages devoted to the description of the meaning of individual function verbs in one of the light verb constructions in Tamil found in Schiffman (1999: 83–104) probably constitute the richest description encountered in the survey.

In languages where different function verbs contrast with the same host (e.g. with resulting differences in aktionsart or valency; see above), some indication and illustration of the contrast is often given (as e.g. in Pandharipande 1997: 529 for Marathi; Cardona 1965: 131–133 for Gujarati; Hoddinott and Kofod 1988: 170–177 for Ngankikurungkurr), sometimes even in the form of a table. However, no information was provided in any of the grammars on the range of hosts for which the contrasts hold. As a result of these practices, it would be quite difficult to come up with a systematic cross-linguistic survey of the functions of light verbs, at least on the basis of reference grammars.

The problems that grammarians face when dealing with the meanings and functions of light verbs are manyfold. First there is the meta-theoretical problem of division of labour between grammar and lexicon already discussed in Section 3.1: most authors of grammars will be likely to assume, either explicitly (as e.g. in Schmidt 1999: 96) or implicitly, that semantic information of this kind should be provided in the dictionary, not the grammar of a language. As pointed out in Section 1, though, dictionaries often do not provide detailed information on the use of function verbs, either.

A second problem for the grammarian is that function verbs cannot be discussed in isolation. Function verbs or light verbs, as defined in Section 2.1, are by definition part of complex predicates. That is, their function can only be discussed with reference to the specific construction they appear in, by specifying the syntactic category or part of speech of their host (see Section 3.1). Very often, moreover, a discussion of the meaning of function verbs has to make reference to semantically defined subclasses of a single category of hosts. In describing the function of light verbs, it is important – but often difficult – to disentangle the contribution of the host from the contribution of the function verb to the interpretation of the complex predicate.

There are, however, several important clues to the meaning of light verbs, which, if systematically included in descriptions of languages, would provide the reader with a much better idea of their actual range of functions.

One indication – which is seemingly obvious, but by no means always invoked in reference grammars – is the meaning of a given function verb when used as a simple verb. Ideally, the description would include an indication of the true semantic range of the verb as an independent verb (beyond providing a mere gloss), and of any similarities and differences that can be discerned in the semantic entailments of the verb in the main verb use and in the function verb uses (cf. e.g. Schultze-Berndt 2000: Ch. 5; Butt and Geuder 2001).

The second clue is the privative opposition between the presence of a function verb and its absence, in languages where the verbal or finite form of the host can also be used as a simple predicate (cf. Abbi 2001: 192), and/or the equipollent opposition between different function verbs attested with the same host. The more systematic the differences in meaning between complex predicates formed with the same host but different function verbs, the more precisely the contribution of the function verb to the meaning of the whole can be delimited.

A third type of information, which however presupposes a very good command of the lexicon of the language in question, is the nature of the host classes that the function verbs combine with, since the common semantic components of the hosts can provide important clues to the meaning of the function verb itself. Especially where no clear generalisations can be drawn as to the semantic classes of host expressions (e.g. expressions of locomotion, expressions of sound emission, activities, or the like), lists of lexical items could be provided to supplement the discussion and to enable users of the grammar to draw their own generalisations. Although this may be regarded as a proliferation of lexical information in the grammar (and has obvious disadvantages in terms of space considerations), the usefulness of lists of this sort is obvious for those users of a grammar who are primarily interested in learning the language or gaining grammatical insights about their native language or a language they already know well. Moreover, linguists of various theoretical persuasions, including typologists, have become more and more aware of the central role of semantics for certain aspects of grammar. For example, the importance of semantic subclasses has been recognised in the literature on aspect and aktionsart (cf. Sasse 2002 for a review) and on valency and argument structure (e.g. in the "unaccusativity" discussion; cf. e.g. Levin 1993, Levin and Rappaport Hovav 1995). Cross-linguistic generalisations in these areas can only be drawn by comparing the semantic classes of lexical items exhibiting a certain grammatical or collocational behaviour.

3.3. Information on usage

In this section, it will be argued that a reference grammar should also attempt to capture the status of the grammatical structures that it describes in terms of their usage and their functional load, since this information is essential for any user of a grammar who wants to get a "feel" for the language in question – whether they are consulting the grammar as learners or for the purposes of cross-linguistic comparison. The example of function verbs will again be used to illustrate the point.

In current grammatographical practice, information either on the frequency of function verb expressions in general or on the productivity of individual function verbs is rare, beyond statements like "very common", "the most frequent verbs", or "more common in written language".

In a number of the grammars surveyed, though, reference is made to the fact that certain light verbs are used productively to integrate loanwords; cf. e.g. Bhatia (1993: 324) for Punjabi, Pandharipande (1997: 529) for Marathi, Schmidt (1999: 95) for Urdu, Sridhar (1990: 289) for Kannada, and McGregor (1996: 47) for Nyulnyul. In these, as in many other languages (cf. Moravcsik 1975; Hock 1991: 386; Myers-Scotton 1993: 112–116), "verbal" loanwords from the donor language are incorporated as nominals or non-finite or non-inflecting predicates in the recipient language, and have to be combined with a light verb to be able to function as a predicate in an independent clause. The employment of specific function verbs in the integration of loans is an important indicator of their productivity.

The functional load of specific light verbs can moreover be stated in terms of frequency. Type frequency concerns the number of different collocations that a given function verb enters into. Token frequency concerns the overall frequency of the verb in discourse (in its function verb use). In existing reference grammars, such information is almost never to be found. This can partly be related to the preoccupation with "competence" – as opposed to "performance" – in a lot of mainstream linguistics in the 20th century, including descriptive linguistics.

Ideally, moreover, grammarians would provide frequency indications relative to discourse genres – even when there is no absolute agreement on how to delimit these. Information on the frequency of certain constructions relative to discourse genre is very scarce in existing reference grammars (the grammar of English by Biber et al. 1991 being a notable exception), and the information given by different authors may sometimes be contradictory. Thus, in English, according to Quirk et al. (1997: 751) and Hopper (1991, 1996), complex predicates formed with a closed subclass of verbs

are more frequent than simple verbs in informal written or spoken discourse. Likewise, Dixon (1991: 337–338) finds that *give a*, *take a*, and *have a* constructions are "found far more frequently in colloquial than in formal styles of English". On the other hand, according to Biber et al. (1991: 1028), collocations involving the verbs *have*, *make* and *take* are prevalent in written registers. Similar claims have been made for German function verbs, e.g. by Heidolph et al. (1972: 81).

Today, grammarians are in a more fortunate position than grammarians until recently, because with electronic data processing and the methods of corpus linguistics, frequency information can be compiled much more easily. If included in a language description, frequency information can also provide an important clue to the delimitation problem discussed in Section 2.1, since productivity may be used as one of the criteria for the distinction between function verbs and fully lexical verbs, and also for the degree of grammaticalisation of individual function verbs (cf. Hook 1991).

4. Conclusions

In this paper, I have argued that ideally, descriptions of a language (and specifically, reference grammars) should aim at capturing, as far as possible, how the language is actually used, in giving attention to structures in proportion with their importance in the language. Specifically, these structures may include some that are more "collocational" or "idiomatic" in nature in that they incorporate elements on the boundary of "lexical word" and "function word", of which function verbs are just one example. In addition, these structures may be of limited productivity, i.e. their description involves reference to semantic properties, not just categorial properties, of the fillers of the "open" slot in a construction.

In the case of function verbs, it was argued that the complex predicates they are employed in can be regarded as constructions in their own right, and not just as mere functional equivalents or quasi-equivalents of commonly found morphological marking, such as word-class changing or transitivity-changing derivational morphology, or aspect or aktionsart marking. On a higher taxonomic level, it is often possible to distinguish different types of function verb constructions – depending on the type of host – and to describe their respective syntactic properties, such as the tightness of nexus between the host and the function verb. On a lower taxonomic level, each specific light verb can be taken to define a subconstruction which has a specific function (or which is, potentially, multifunctional). The construc-

tional function or meaning can be delimited by taking into account, among other things, the meaning of the verb involved as a main verb, the common semantic components of the classes of hosts it combines with, the oppositions it enters into with other function verbs occurring with the same class of hosts (if applicable), and the semantic difference between a simple verb and a function verb construction based on the same host (if applicable). Moreover, it was argued that it is important to give an indication of the frequency and productivity of each function verb, if possible, relative to specific text genres.

A description of this kind obviously implies a good documentation of the language in terms of a substantial corpus of texts, which would enable one to measure frequency and provide a good indication of the range of application of a construction in spontaneous usage. It also implies a documentation that is not driven by purist concerns, but captures actual language use, since, as we have seen, code-switching phenomena and integration of recent loans can provide important insights into the functional load of light verb constructions.

It seems that theoretical obstacles often prevent the inclusion of semi-grammatical (or semi-lexical) items such as function verbs in a reference grammar. Many models of grammar maintain a strict separation of "grammar" and "lexicon". As Mosel (this volume) also points out, this borderline is a linguistic construct, and many aspects of language use are only captured by recognising that many expressions are both conventionalised (lexicalised) and formed by productive means (cf. also Pawley 1986).

There obviously also exist a number of practical limitations to the implementation of the suggestions made above (cf. also Mosel, this volume). The time limitations and personal interests of grammar authors will determine to some extent how much attention is paid to which area of the grammar. Space limitations (which are in turn conditioned by marketability), too, may preclude an in-depth discussion of function verbs, at least under the current standard of the one-volume reference grammar. Moreover, it is unrealistic to expect this type of information in a reference grammar that is the outcome of a PhD thesis, especially in an academic climate where it is crucial to finish one's PhD in a short time. One might argue that, especially in the case of languages that are endangered or at least not widely spoken, a description that is incomplete in some respects is better than no description at all. The danger in producing a reference grammar under severe time constraints, however, is that once a reference grammar of a language exists – especially for a small or endangered language – the chances are small that someone will later take a closer look at function

verbs and other constructions involving items on the boundary of lexicon and grammar.

Notes

1. The data come from "Kölnkorpus", an unpublished corpus of spoken narratives recorded at the Linguistics Institute, University of Cologne.

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Converbs in an African perspective

Azeb Amha and Gerrit J. Dimmendaal

1. The issue

The frequent use of converbs, or non-finite verb forms marking a clausal dependency relation, is a well-known property of languages in a linguistic zone identified by Masica (1976) the core of which coincides with the Indo-European and Altaic language area. In our contribution, we intend to have a closer look at converbs in African languages. This type of construction is found in Afroasiatic languages of Ethiopia, as already noted in Masica (1976). Less well known apparently among general linguists is the fact that this feature is also attested in a variety of Nilo-Saharan languages spoken mainly west of the Ethiopian region, and extending into Nigeria and Niger.

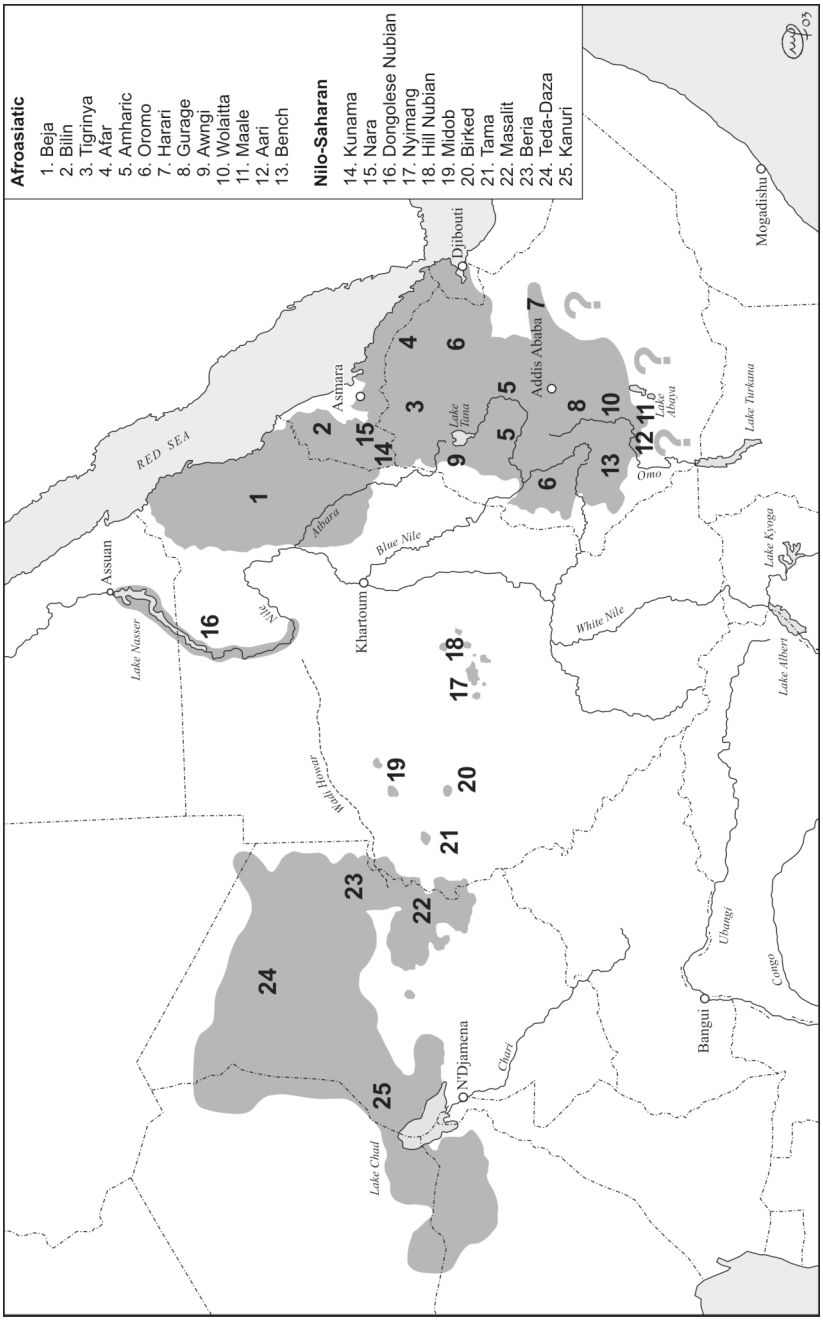
Below, we present an initial survey of morphosyntactic, semantic and functional properties of converbs in these Afroasiatic and Nilo-Saharan languages. In addition, and related to the more general purposes of the volume in which the present contribution appears, we intend to look at the way converb constructions have been described by Africanists in different grammars. More specifically, the question is raised to what extent the analytical and descriptive practices inherited amongst Africanists have influenced the treatment of these phenomena in the different genetic groupings where they occur, thereby illustrating a specific tradition of grammar writing in African linguistics with respect to such syntactic strategies. We also address the question whether these phenomena in the two language phyla are best explained as historically independent phenomena or, alternatively, as the result of areal diffusion.

2. Distribution of the phenomenon in Africa

In his investigation of Ethiopia as a linguistic area, Ferguson (1976: 75) pointed towards the presence of converbs (or "gerunds" as the author calls them) as one outstanding property of the region. Tosco (2000) has questioned the validity of Ferguson's claim that Ethiopia constitutes a linguistic area as such, but the author concedes that converbs are indeed prominent in a number of Afroasiatic languages in the area. Tosco (2000: 345) further suggests that the presence of converbs in Ethiopian Semitic languages may be "… the result of old Cushitic influence".

It is a well-known fact that converbs are particularly common in verb-final languages cross-linguistically (cf. the studies in Haspelmath and König 1995). On the African continent, verb-final languages are common in particular in north-eastern Africa, as well as in the Sahel region west of this area; languages in this area, belonging to Afroasiatic as well Nilo-Saharan, indeed all appear to have converbs (see Map 1). A verb-final ordering also occurs in a group of Niger-Congo languages spoken in the Niger Delta, known as the Ijo-cluster, as well as in Central Khoisan languages in southern Africa, as argued by Heine (1976) in his survey of constituent order in African languages. However, neither the verb-final Ijo languages nor the Central Khoisan languages appear to have converbs. In our discussion below, we therefore focus on the typological zone involving Afroasiatic and Nilo-Saharan languages in north-eastern Africa as well as the eastern Sahel zone.

At least two basic requirements are met by converb constructions in the languages surveyed below: firstly, the morphological requirement, namely that they are morphologically distinct from main verbs as well as dependent verb forms occurring in conditional, purposive, or reason clauses. Secondly, they cover two or more of the semantic roles of the converb which are attested cross-linguistically (cf. Haspelmath 1995; König 1995), including the expression of adverbial modification of manner and conjoining of series of events usually anterior to or simultaneous with the event expressed by the main verb.



Map 1. The areal distribution of converbs

3. Converbs in Afroasiatic

3.1. Omotic

When translating a sentence from German such as the following, *Nachdem die Polizei ihn hartnäckig befragt hatte, zeigte der Dieb den Platz an dem das Geld verborgen war* into a proto-typical Omotic language such as Wolaitta, one notices major differences in strategies used to enhance the storyline in narrative discourse. Where German or other Germanic languages would use adverbial clauses, followed by a main clause, Wolaitta would use a main clause with one main verb occurring in sentence-final position, preceded by dependent clauses containing finite verbs which are formally distinct from the main verb (or verbs in adverbial clauses). Unlike the main verb, these dependent verbs cannot form a clause by themselves; moreover, in Wolaitta this type of dependent verb, hereafter converb, does not inflect for aspect, whereas main verbs do. Also, contrary to main (i.e. final) verbs, converbs in Wolaitta and other African languages with converbs do not take illocutionary force or epistemic modality markers.

(1) *polísee* *mint-í* *ʔoicc-ín*
police.DEF:NOM strong:CAUS-CNV ask-DS:CNV

kaisóy *miiʃʃáa* *k'ott-ído*
thief.M:NOM money.M:ACC exist-PF:REL

soh-uwa *bess-í* *g-iisi*
place.M:ACC show-M:CNV say-3MSG:PF
'After the police interrogated him thoroughly, the thief showed them where he had hidden the money'

As illustrated by this example, converb constructions may also be used where English or German would use a manner or degree adverb ('thoroughly'). When comparing converb constructions in Wolaitta with other Omotic languages, one notices that these dependent verb forms or converbs may be subject to restructuring in terms of their "finiteness". Whereas subject agreement markers on converbs are common, these markers do not necessarily alternate for gender or number, contrary to main

verb paradigms in this Afroasiatic branch; also, tense or aspect may or may not be expressed on the converb, as the following comparison of Omotic languages should illustrate. Below we present a survey of functionally similar non-final verb types that we consider to be converbs in Omotic languages, regardless of the exact term used by the original author; a similar approach will be followed in the discussion of data from Cushitic, Ethio-Semitic as well as Nilo-Saharan languages.

Breeze (1990) is the first exhaustive documentation of the Omotic language Bench. As in many other domains of its grammar, Bench exhibits some unique features in its converb form. This involves the fact that it has four paradigms of converbs (or 'participles' as Breeze calls them), which are formed on the basis of the "past stem" or "future stem" of the verb. The distinction between the basic verb root, the past tense and future tense stem of verbs is characterized by specific morphophonemic alternations often affecting the final consonant of these three verb forms. The list of the four converb/participle forms of Bench is taken from Breeze (1990: 27–29). The superscripted numbers in the examples indicate tone-levels; this language is reported to have six distinct phonemic tones: five level or register tones numbered from 1 to 5 beginning with the lowest, and one rising glide from level 2 to level 3.

– The past participle: past stem + -i^5 (for 3MSG, 1PL inclusive, 2PL and 3PL) or -a^4 (for 3FSG, 1SG, 2SG and 1PL exclusive) or -o^4 (as an alternative marker for 1PL exclusive).

	ham^3	'go'
	han^3*k'i*^{5}	'he having gone'
compare:	*han*^{3}*k'e*^{2}*ne*^{3}	'he went'
	gaz^1	'take out'
	ga^1*za*^{4}	'she having taken out'
	ha^3*nk'e*^{2}*ne*^{3}	'she went'

– The present perfect participle: past stem + aspect markers -*Ns*^{4}-, -*ng*^{4} or -*ankæ*^{4}- + person-gender markers -i^5 or a^4.

šer^4	'be frightened'	*šer*^{4}*k'-n*^{4}*g-a*^{4}	'she having become frightened'
sur^2	'sleep'	*sur*^{2}*k'-an*^{4}*k'-i*^{5}	'he having fallen asleep'

– The imperfect participle: future stem + stative suffix -*ag*^{3}- + person-gender markers -i^5 or -a^4

ham^{3}	'go'	*ha*^{4}*m-a*^{3}*g-i*^{5}	'he going'
ik'^{1}	'grow'	*i*^{1}*k'-a*^{3}*g-a*^{4}	'she growing'

– The negative participle: future stem + negative suffix *-arg*^{4}- + *-u*^{2} or *-i*^{5} or *-a*^{4} (+ tone alternation??)

ham^{3}	'go'
ha^{4}*m-ar*^{4}*g-u*^{4} / *ha*^{4}*m-ar*^{4}*g-i*^{5}	'not/without having gone'

With respect to the distribution of the four converb forms above, Breeze (1990: 55) makes the following observation: "While the final participle in a series or a lone participle can be any one of the four different participle forms, the non-final ones in a series always have the past participle form. The tense of these is determined by that of the final participle in the series." In other words, converb formation in Bench potentially involves two layers of dependency. Some examples:

(2) *go*^{3}*dab*^{2}*ind*^{5} *han*^{3}*k'-i*^{5} *ko'yi*^{5} *e*^{3}*ti*^{5}
Godab.CON go-3M search-3M take-3M

a^{4}*-tsi*^{5} *ta*^{4}*am*^{4} *pa*^{2}*ši*^{5} *ts'ya*^{2}*ts'u*^{2}
bring-3M 1-ABL together tie-3M
'He went and searched for Godab, took and brought him and tied him together with me'

(3) *ha*^{4}*kn*^{5} *no*^{1}*t-i*^{5} *ya*$^{2\text{-}3}$*k-n*^{4}*s-i*^{5} *wo*^{3}*ts'-i*^{5} *ye*^{3}*ʔ-i*^{5} *a*^{2}*t-i*
far.LOC see-3M find-PF-3M run-3M come-3M arrive-3M

nor^{2}*gn*^{3} *its*^{5} *kuč* ^{1}*kan*^{4} *go*^{4}*čču*^{2}*e*^{3}
butter 3+3POS hand-LOC pull-3M-FIN
'Having seen from far, he came running and snatched the butter from their hand'

The tense-aspect and negation marking morphemes which occur preceding *-a*^{4} (masculine) and *-i* ^{5} (feminine) in Bench are identical in main verbs and converbs. (See also Hayward 1991 for an in-depth study of the synchronic and historical role of the suffixes *-a* and *-i* in the inflectional paradigms of a large number of Omotic languages.) In other Omotic languages, more specifically in Gamo, Kullo (i.e., Dawro) and Wolaitta, these very same agreement morphemes (*-á* and *-î*) are directly attached to the verb root to form the converb yielding proto-typical converbs with reduced tense-aspect marking. Still other Ometo languages, e.g. Dime, Maale and Zayse use

only one of these two morphemes thereby failing to show the gender and number distinction which is indicated in Bench. Thus, in Dime the converb is invariably marked by *-a* and in Maale and Zayse it is marked by *-i*.

As Hayward (1990) shows, Aari is unique within Omotic in marking person as well as number distinctions on the converb; other Omotic languages show a reduction in the person, number and/or gender distinction in converbs. On the other hand, like many other Omotic languages, Aari does not show tense-aspect distinctions on the converb. Compare the inflection of the verb *baʔ-* 'bring' in the affirmative perfect and imperfect main verb (from Hayward 1990: 475) and the converb paradigm of *ʔits-* 'eat' given in Hayward (1990: 488).

Table 1. Comparison of the verb *baʔ-* 'bring' and the converb *ʔits-* 'eat'

	Main Verb			
	perfect		imperfect	
1SG	*báʔ-tit*	'I brought'	*bábaʔ-di*	'I bring'
2SG	*báʔ-tay*	'you brought'	*bábaʔ-day*	'you bring'
3SG	*báʔ-ta*	'he/she brought'	*bábaʔ-da*	'she brings'
1PL	*báʔ-tö*(*ö*)*t*	'we brought'	*bábaʔ-dö*(*ö*)*t*	'we bring'
2PL	*báʔ-tet*	'you brought'	*bábaʔ-det*	'you bring'
3PL	*báʔ-tek*	'they brought'	*bábaʔ-sek*	'they bring'
	Converb			
1SG	*ʔiš̀-ito*		'I having eaten'	
2SG	*ʔiš̀-ayo*		'you having eaten'	
3SG	*ʔiš̀-iyo*/*ʔiš̀-iš̀o*		'he/she having eaten'	
1PL	*ʔiš̀-ö*(*ö*)*to*		'we having eaten'	
2PL	*ʔiš̀-eta*		'you having eaten'	
3PL	*ʔiš̀-eka*		'they having eaten'	

In Wolaitta there are three converb types: 1) same subject anterior converb, 2) different subject anterior converb, and 3) the simultaneous converb (cf. Adams 1983; Azeb Amha 2001a; Lamberti and Sottile 1997). Of these, the same-subject anterior and simultaneous converbs show partial agreement with the subject (i.e. they indicate only gender and number properties of

the subject) whereas the different-subject converb is an invariable morpheme *-(i)n*. Furthermore, negation cannot directly be marked on the same-subject anterior and simultaneous converb form in Wolaitta. Rather, in Wolaitta the parallel of 'without-Verb' converb type shown for Bench above involves a main verb inflected for person, negation and (future) tense plus a different-subject converb marker *-(i)n*, e.g. *ʃamm-ídî* '(he/we/you.pl/they) having bought' versus *ʃamm-énná-n*'with out buying' (the latter form may be used for all person/number or gender). In contrast to the converb, main verbs in Wolaitta show subject agreement for each person, number and gender as well as for aspect and negation.

Table 2. Aspect and person inflection on Wolaitta main verbs and converbs[1]

Same Subject Converb

	Anterior		Simultaneous
	short form	full form	
1SG	*wot't'-á*	*wot't'-ádá*	*wot't'-aíddá*
2SG	*wot't'-á*	*wot't'-ádá*	*wot't'-aíddá*
3FSG	*wot't'-á*	*wot't'-ádá*	*wot't'-aíddá*
3MSG	*wot't'-í*	*wot't'-ídí*	*wot't'-iíddí*
1PL	*wot't'-í*	*wot't'-ídí*	*wot't'-iíddí*
2PL	*wot't'-í*	*wot't'-ídí*	*wot't'-iíddí*
3PL	*wot't'-í*	*wot't'-ídí*	*wot't'-iíddí*

Main Verb

	Perfective	Imperfective
1SG	*wot't'-aási*	*wot't'-aísi*
2SG	*wot't'-ádása*	*wot't'-aása*
3FSG	*wot't'-aásu*	*wot't'-aúsu*
3MSG	*wot't'-iísi*	*wot't'-eési*
1PL	*wot't'-ída*	*wot't'-oósi*
2PL	*wot't'-ídéta*	*wot't'-eéta*
3PL	*wot't'-ídósóna*	*wot't'-oósóna*

The same-subject anterior converb in Wolaitta has short and long forms. The short form is mainly used in verb compounding (i.e., in complex predicates) whereas the long converb may be used for a number of functions including the expression of manner, sequentiality, aspectual

distinctions and clause chaining. The verb root used in Table 2 is *wot't'-* 'run'.

With respect to Maale, Azeb Amha (2001a) shows that this Omotic language has three distinct types of converbs: 1) same-subject anterior converb, which is used only to express events taking place prior to the event expressed by the main verb, as in example (4a), and 2) what can be called a general converb, which fulfils various functions including anteriority, simultaneity, clause-chaining and marking the first component of a complex-predicate (4b). This latter type is also used when the subject of the converb and the main verb are coreferential; 3) the different-subject anterior converb is used when the subject of the converb and the main verb are different, as in (4c). All converb types are directly attached to the verb root, and they do not distinguish tense, person, number or gender.

(4) a. *ʔízí* *mís'-ó* *tik'-áʔʔo* *ʔáá-ɗ-é-ne*
3MSG:NOM tree-ABS cut-CNV$_2$ left-PF-A:DCL
'He left, having cut the wood'

b. *ta* *ʔíndá* *túk-ó* *burk'-iʃ-í*
1SG:GEN mother-NOM coffee-ABS boil-CAUS-CNV$_1$

káts-ó *kats-í* *ʔas-ó* *ʔéél-é-ne*
food-ABS cook-CNV$_1$ people-ABS call-PF-A:DCL
'My mother made coffee and she prepared food and invited the people (who were working on the farm into the house)'

c. *ʔízí* *mís'-ó* *tík-ém* *núúní* *makiin-aa*
3MSG:NOM wood-ABS cut-CNV$_3$ 1SG:NOM car-LOC

c'aan-é-ne
load-PF-A:DCL
'He having cut the wood, we loaded it on the car'

Zayse has a cognate converb to the Maale general converb (illustrated in 4b). As Hayward (1990, 1991) demonstrates, the converb in Zayse is interesting in that it is expressed by one and the same form as one of the paradigms of the main verb which he labels the "short perfect". Regarding this Hayward (1991: 550) writes: "... the short perfect occurs in clauses where there is no constituent under focus, i.e., in a situation of neutral focus. Significantly, it is this very same form which functions as a converb

in the language. Thus, the same form occurs as a final verb and as a non-final verb". The following two examples from Hayward (1991: 550) illustrate the interaction between focus marking and the grammatical use of converbs.

(5)	*tai*	*ʔesa*	*kallonna*	***gwiidi***
	I-NOM	him	stick.with	hit (short perfect)
	'I hit him with a stick'			

(6)	*ʔe-ʔatsi*	***geli***	*ʔuttottesin*
	the man.NOM	enter (Converb)	sit.copula.3MSG-PF
	'Having entered, the man *sat*'		

The dual syntactic behaviour of the verb root + *-i* form in Zayse is a rare phenomenon both typologically as well as in view of the synchronic converb-main verb distinction in other Omotic languages. Hayward (1991 and in subsequent publications) has offered a convincing historical explanation for this development which will not be further discussed in this paper.

As this preliminary survey of a variety of Omotic languages should make clear, there is a continuum with respect to the type and degree of inflection found on converbs: number (singular versus plural) or gender (feminine versus masculine) may or may not be distinguished, as are tense or aspect; also, coreferentiality versus disjunctive reference may or may not be distinguished, whereas negation marking may or may not be used in combination with some converb marking morphemes. This type of restructuring historically of course is also common with main verbs occurring sentence-finally in an independent clause. In order to be able to develop a general comparative grammar, however, one needs a cross-linguistically useful set of concepts which form bench-marks for comparing language structures. Consequently, the proto-typical verbal nature of these forms in dependent clauses which cannot constitute an independent utterance by themselves are central taxonomic characteristics. As shown through additional examples below, these forms may grade into consecutive (medial) verbs on the one hand, and participles and gerunds on the other.

3.2. Cushitic

Although the converb construction is often regarded as one of the characteristic features of Cushitic languages, it does not seem to be found in all members of this family. For example, no converb constructions have been reported for the southern-most Cushitic languages, spoken in southern Ethiopia, Kenya and Tanzania (see also Map 1). Sasse (1976) and Tosco (2001) do not mention any converb or participial construction for Dhasanech. Also, in the closely-related language Tsamakko, which is spoken north of Dhasanech, there is no converb (Savà 2005). Similarly, in Iraqw, a Southern Cushitic language spoken in Tanzania, the "consecutive" suffixes are not attached to the dependent verb, but rather occur in combination with pronominal markers preceding the dependent verb (cf. Mous 1993: 146–147).

In this section we briefly discuss data from Cushitic languages where the converb is well documented and languages where this is less clear; moreover, these languages represent different morphological strategies in marking converbs. Thus, Awngi formally distinguishes the converb from main verbs and within the paradigm of the converb it distinctly marks each person, number and gender. In Oromo on the other hand, the converb is distinguished from the main verb through the lengthening of the final vowel of the inflected indicative verb; apart from this phonological process, there is little difference between the converb and the main verb. In Hadiyya, as in Oromo, the tense-aspect and agreement marking is not reduced in the converb. As a matter of fact, some main-verb forms are in fact formally simpler than the converb.

Awngi is one of the four Agaw (or Central Cushitic) languages in addition to Bilin, Kemant and Khamtanga, which are spoken in northern Ethiopia and southern Eritrea. Official figures in Ethiopia show that there are about 500,000 speakers for the Agaw languages, although some of these languages are being replaced by the Semitic languages: Tigrinya and Amharic, e.g. Kemant, which has only around 1,600 speakers (Zelealem Leyew 2003).

In Hetzron's (1969) monograph on the verb in Agaw languages, there is also a section on converbs. Hetzron outlines the form and function of the converb in Awngi in a clear manner, and he presents a number of illustrative examples extracted from texts (most of which, to our regret, are not inter-linearized). According to Hetzron (1969: 14) the converb in Awngi "mainly expresses that the action contained in it simply precedes

the one of the following verb. It has only one form, but semantically its tense, aspect, and mood are the same as those of the subordinating verb". Hetzron further lists the main uses of the converb:

- Simple succession of actions.
- The content of the converb expresses information on the manner in which the event expressed in the subordinating verb is carried out, e.g. *zurk-amá* 'turning' in *zurk-amá fayngo jemerúnà* 'turning, they started searching'. Hetzron notes that in this context the converb may occur after the main verb. In all other cases, subordinate (dependent) verbs occur preceding the main verb.
- Verbal government, i.e. a converb might be required by the subordinating verb for expressing aspectual distinctions, e.g. *widɨng* 'to finish' as in *gɨʃkamá widániki* 'and when they finished digging'. A similar use of the converb to express aspectual meaning is recorded for Omotic languages.
- Direct speech is always followed by the verb *nɨŋ* 'to say' and if there is another verb of speaking, the converb of *nɨŋ* 'to say' is used, e.g. *namá kásiχwà* 'saying, he asked'.

As Hetzron (1969: 15) shows, the converb in Awngi distinguishes person, number and gender (except in the case of the second person singular and the third person feminine). In addition to these properties, the main verb in Awngi distinguishes four main (affirmative) indicative paradigms, based on the combination of two tenses (present and past) and two 'aspects' (sometimes called 'definite' and 'indefinite'). Compare the paradigms of the "imperfect indefinite" (which expresses an action in the present or future) and the converb form of the verb *des-*, 'study' cited from Hetzron (1969; gloss by AA & GJD) and shown in Table 3 below.

The Cushitic language Hadiyya together with Libido, Kambata, Alaba, Sidamo and Burji forms the Highland East Cushitic branch of the Cushitic family. Sim (1989) presents a detailed study of predicate conjoining in Hadiyya where the so-called converb construction is central. The converb in Hadiyya is interesting since the main and converb form of the verb in this language exhibit no 'asymmetry' in tense-aspect and agreement marking. In fact, Sim (1989: 150) claims that the present perfect form of the main verb in Hadiyya is derived from the converb$_1$ through back-formation.

Table 3. Imperfect indefinite and converb form of the verb des- 'study'

	Main Verb	
1SG	*des-é*	'I study /shall study'
2SG	*des-té*	'you study /shall'
3MSG	*des-é*	'he studies /shall study'
3FSG	*des-té*	'she studies /shall study'
1PL	*des-né*	'we study /shall study'
2PL	*des-tánà*	'you study /shall study'
3PL	*des-ánà*	'they study /shall study'
	Converb	
1SG	*des-ata*	'I having studied'
2SG	*des-tata*	'you having studied'
3MSG	*des-amá*	'he having studied'
3FSG	*des-tata*	'she having studied'
1PL	*des-nana*	'we having studied'
2PL	*des-tɔ́kamá*	'you having studied'
3PL	*des-kamá*	'they having studied'

As the paradigms in Table 4 taken from Sim (1989: 143 and 154) show, there is no morphological reduction in the dependent converb verbs. Both in the main verb (column 2) and converb forms (specifically converb 2 forms in column 3) the vocalic elements *-oo-*, *-u-* and *-aa-* indicate imperfect, simple perfect and present perfect forms respectively, whereas the consonants of the suffixes co-vary with person, number and gender of the subject. The verb root presented in Table 4, is *mass-* 'take'.

Table 4. Haddiyya main and converb forms of the verb *mass-* 'take'

	Main Verb		
	Imperfective	Simple PF	Present PF
1SG	*mass-oomo*	*mass-ummo*	*mass-aamo*
2SG	*mass-itootto*	*mass-ititto*	*mass-itaatto*
3MSG	*mass-ookko*	*mass-ukko*	*mass-aakko*
3FSG	*mass-itamo*	*mass-ito?o*	*mass-ito?ookko*
3POL/PL	*mass-akkamo*	*mass-akko?o*	*mass-akko?ookko*
1PL	*mass-inoommo*	*mass-inummo*	*mass-inaammo*
2PL	*mass-itakkamo*	*mass-itakko?o*	*mass-itakko?ookko*

	Converb	
	CNV_1	CNV_2=Simple PF
1SG	*mass-aamma*	*mass-ummaare*
2SG	*mass-itaa*	*mass-itaare*
3MSG	*mass-aakka*	*mass-ukkaare*
3FSG	*mass-ita?a*	*mass-ito?aare*
3POL/PL	*mass-akka?a*	*mass-akko?aare*
1PL	*mass-inaamma*	*mass-inummaare*
2PL	*mass-itakka?a*	*mass-itakko?aare*

The following example derives from a story about 'two cheats' in Hadiyya (Sim 1989: 383). The converb forms are here presented in boldface:

(7) ***dabassanta?a*** ***ki?la?a*** *lamim* ***amatt'ita?a*** *ki?la?a* *googoom*
exchanging rising both taking after the.road

mattakko?o *yakkamo* ***matta?a*** ***ki?la?a*** *tocconne*
they.went one.says going rising at-side

fissita?a ***ki?la?a*** *fook'a?lam* *ammane* *marabo*
taking.out rising opened time honey

massukkaannik	*oreeta*	*buuro*	*massukkaanik*	*bucca*
one.who.took	dung	butter	one.who.took	earth

lamim	***moʔlaʔa***	***kiʔlaʔa***	***hooggaʔa***	***kiʔlaʔa***	***muunnitaʔa***
both	seeing	rising	weakening	rising	howling

uttaʔa	*lamim*	*min*	*mine*	*mattoʔo*	*yakkamo*
quiting	both	house	house	they.went	one-says

'After they traded, they took (their goods) and went on their way, it is said. After going, they took it out at the side (of the road), and the one who took honey – dung; he who took butter – earth. The two, after seeing, after being deflated, stopped howling about it and went to their separate houses, it is said.'

Sim (1989) argues that the term "serial verb construction" is a more appropriate term for the Hadiyya converb construction because, according to him, the definition of this term subsumes most functions of converb constructions. As Bisang (1995) shows, there is a high degree of functional similarity between converbs and verb serialization. However, there are also some clearcut syntactic and morphological distinctions between these two. Apart from the fact that (African) serial verb languages tend to be verb-second or SVO languages, there are differences in cross-reference marking. As we saw for the Omotic language Wolaitta, for example, the subjects of converbs and main verbs are not necessarily identical (or coreferential). In fact, Hadiyya also marks switch-reference, as Sim points out (1989: 154). Switch-reference does not seem to be a characteristic of languages with verb serialization.

Although the converb in Hadiyya is morphologically cumulative, i.e. is clearly marked for aspect and person just like main verbs, it cannot occur in the syntactic position of main verbs (i.e. as a sentence-final element) and it cannot form a sentence on its own. Secondly, the morphological forms marking nominal and verbal inflection on converbs and main verbs are not identical.

Oromo is an East Cushitic language spoken in central, south-east and western Ethiopia, each region representing a distinct dialect. This language belongs to the sub-group of Cushitic which is reported not to have converbs (cf. Tosco 1996: 84). However, a number of descriptions on this language include a verbal form whose function is similar to that of the converb in other Ethiopian languages. For our purpose here, we consider two studies on this language which furnish complementary information on the converb. Gragg's (1976) documentation of the structure of the Wollega

dialect shows the morphological contrast between main verbs and converbs, but unfortunately it does not contain much information about the function of the latter category. Griefenow-Mewis and Tamene Bitima (1997) on the other hand is a study fully focused on the functions of the converb, with illustrative material from texts.

Gragg (1976: 192–193) describes – what he calls – 'consecutive clauses' in Oromo as follows:

> [f]or simultaneous action Oromo can use the present participle: *hojjetaa ñaata* 'he eats while working.' For posterior action Oromo uses the converb: *mana adeemnaan rafi* 'having gone home, sleep/ Go home and sleep!' However, the most frequent way to indicate that the action of one clause is simultaneous with or immediately prior to the action of a second clause is to use the simple past, with a lengthened final vowel. This construction corresponds to the converb construction in Amharic, and frequently corresponds to conjunction in English ...

Note that in the above quote, two types of "simultaneous" clauses are identified, one which is based on the "present participle", and the second which is based on the simple past tense. In both types lengthening of the final vowel is obligatory, and this vowel lengthening seems to be crucial in distinguishing the converb from main clauses with the present and past tenses.

Griefenow-Mewis and Tamene (1997) analyse dependent clauses with verb-final long vowels in Oromo in more detail. Using examples from Oromo texts, Griefenow-Mewis and Tamene identify four functions for the construction in question. It is clear that these functions correspond to the function of converbs in other Afroasiatic languages (compare the Awngi and Hadiyya forms above as well as the case of Omotic and Semitic languages elsewhere in this paper) but also cross-linguistically (cf. Haspelmath and König 1995).

– 'The co-ordination of actions that follow each other', as in the bolded verb below:

(8)

haati	*tulluu ganama*	*saʔaatii*	*tokkotti*	***kaatee***	*bultee*
mother	Tullu morning	clock	one.at	got.up.F	breakfast

k'oppheessiti
she.prepares

'Tullu's mother gets up in the morning at 7 o'clock and prepares breakfast'

– 'Serial verbs' in constructions where the two co-ordinated verbs result in a new functional unit, e.g. ***dheessanii*** *deemani* 'they escaped and went away (i.e. they left unnoticed)'. The authors further report that this type of construction often involves 'verbs of speaking'.

– 'Adverbial constructions' in 'co-ordinated verbs ... the first verb of which describes a manner or situation or sometimes a place, that is characteristic for the action expressed by the second verb', as the converbs *weeddisaa* 'singing' and *figee* 'run' do in example (9).

(9) *bantiin* *weeddisaa* *figee* *isaan* *bira* *darbe*
Banti singing ran them near passed by
'Banti passed by them singing and running'

– 'Compound verbs' formed by lengthening the final vowel of a conjugated verb plus a conjugated present or past form of the verb 'to be' (i.e. *jira* and *tura* respectively in 10a and 10b).

(10) a. *inni* ***adeemee jira*** 'he went' (lit.: 'He went he is')

b. *inni* ***adeemee ture*** 'he has left' ('lit.:'He went he has been')

In forming the converb from a tensed verb, Oromo thus is similar to Bench (Omotic) above. The Oromo verbs illustrated above are used in order to express the simple perfect and the pluperfect in the same way as converbs in Ethio-Semitic languages are used in forming compound tenses. This suggests that the notion of "asymmetry" in marking tense-aspect and subject agreement between the converb and main verbs does not apply to Oromo (cf. Bisang 1995, where asymmetry in the inflection of converb vs. main verbs is demonstrated to be crucial for distinguishing "converb languages" and "serializing languages").

3.3. Semitic

The converb construction is also attested in several Ethio-Semitic languages. Since this construction is generally absent in other Semitic languages of the Middle East, its presence in the Ethio-Semitic languages

is attributed to Cushitic (and/or Omotic) influence. The following extensive quote from Hetzron (1975a: 113) summarizes the origin and the distribution of the converb construction in Ethio-Semitic languages.

> A number of features common to ALL the Ethiopian Semitic languages but not found elsewhere in Semitic are probably all due to the early influence of Cushitic and argue for monogenesis ... Some features are not found in all the languages, but they are found in representatives of each branch while not in the closest relatives of these. Such a feature is the use, employing a Semitic form according to a Cushitic pattern (i.e. calqued on Cushitic), of the converb (gerund) instead of sentence coordination. The converbial constructions are common in all the Ethiopian Semitic languages and were already so in Ge'ez, but the original converbial forms (based on the Semitic pattern (säbir(ä)-) are found today (in addition to Ge'ez) in Tigrinya, (but not in Tigre), Amharic, Argobba and, with a limited application, in central and western Gurage (with a modified pattern *sïbirtä-)* and Gafat.

An example of the "original converbial form" as stated in the above quote can be seen from the Amharic paradigm in this section in which the unique converb stem *CäCC-* (for first person *CäC(C)ïCC-*) is followed by inflectional morphemes which indicate the person, number and gender of the subject of the converb. In contrast to these, Harari (which is spoken in the south-eastern part of Ethiopia) and some of the Gurage languages have an invariable form for the converb. For example, Leslau (1945: 70) writes: "Harari, and probably also Gafat [an extinct Ethio-Semitic language, AA & GJD], express the gerundive by the element *-ma* suffixed to the first verb: (Harari) *fac'äma räkäbä* 'having looked for (or looking for), he has found'. Hetzron (1975b: 40) also states that in these South Ethio-Semitic languages, i.e., Harari, Silt'i, Woläne and Zway the original form of the converb (attested e.g. in Ge'ez and Amharic) is lost and "a partially tense-marked converb was adopted: past, nonpast or jussive/imperative forms followed by a converbial particle *-m*(*a*) or *-ane*/*i*."

In a remarkably concise and clear paper, Goldenberg (1988) distinguishes between Ethio-Semitic languages which according to his criteria have either converbs (Con.) or gerund (Ger.), or both. Thus, according to this author, Amharic has both gerunds and converbs, Tigre has converbs but no gerunds, and Tigrinya has gerunds but it has no converbs, as shown in Table 5 adopted from Goldenberg (1988: 91).

Table 5. Comparison of Ethio-Semitic languages

	Amharic	Chaha	Tigrinya	Tigre	Harari	Kïstane
Ger.	*säbro (3MSG)*	*(sïbitä)*	*säbiru*	—	—	—
Con.	*säbbärä-nna*	*säpärä-m*	—	*sabra-ka*	*säbära-ma*	*säbbärä-m*

Goldenberg's grouping of the above Ethio-Semitic languages seems to depend on the type of inflectional markers the verbs take. That is, those languages in which a finite verb takes an invariable co-ordinating morpheme are said to have converbs whereas those that have a non-tensed verb which is marked for nominal inflection are said to have gerunds. Goldenberg illustrates the gerund and converb in Amharic respectively as *säbro* 'he having broken', *säbra* 'she having broken' and *säbbärä-nna* 'he broke and ... ', *säbbäräcc-ïnna* 'she broke and ... ' [the triliteral root *s-b-r-* means 'break'; AA and GJD]. He also demonstrates that in Amharic these forms may be used interchangeably without a change in meaning. Consider the following example:

(11) a. *lïju* *tammämä-ïnna*
child:M:DEF be.sick:3MSG:PAST-COORD

hakim *bet* *wässädut*
doctor house take:3PL:PAST
'The child got sick and they took him to the hospital'

b. *lïju* *tamm-o* *hakim bet*
child:M:DEF be.sick:3MSG:CNV doctor house

wässädut

take:3PL.PAST
'The child having been sick, they took him to the hospital'

However, there are contexts in which converbs and co-ordinate verbal forms are not interchangeable, e.g. where the converb is used as an adverbial modifier and in compound verbs. In our view, at least in the case of Amharic verbal forms *säbbärä-ïnna* 'he broke and … ' etc., it would not be appropriate to use the term converb since this is clearly a simple coordination of two main clauses by means of *ïnna* 'and' which can also be used for co-ordinating two noun phrases as in, *mäs'ïhaf ïnna ïrsas* 'a book and a pencil'. Such consecutive (as against converb) forms are used when focusing on the sequencing or temporal ordering of specific events. The

converb in Amharic on the other hand has a distinct stem: *CäC(C)(ï)C-* (for the first person singular *CäC(C)(ï)CC-)* to which person, gender and number markers of the subject noun are added. Consider the form of *näggärä* 'tell' below.

Table 6. Amharic *näggärä* 'tell'

1SG	*nägïrr-e*	'I having told'
2MSG	*nägr-äh*	'you (m) having told'
2FSG	*nägr-äš*	'you (f) having told'
3MSG	*nägr-o*	'he having told'
3FSG	*nägr-a*	'she having told'
1PL	*nägr-än*	'we having told'
2PL	*nägr-accïhu*	'you (pl) having told'
3PL	*nägr-äw*	'they having told'

Hetzron (1972: 99–100) identifies three 'major functions' for the above converb forms in Amharic. According to this author, each of the three functions is distinctively signalled by word-final pitch/stress.

– *Consecutive*, where the action of the converb takes place prior to the event expressed in the next verb. In this function, the final syllable of the converb has 'high pitch stress'.

(12) a. *k'om-ó* *tänaggärä*
get.up-3MSG:CNV speak:3MSG:PAST
'He got up and talked'

b. *bält-ó* *hedá*
eat-3MSG:CNV go:3MSG:PAST
'He ate and went'

– *Serial*, where a chain of actions, each marked by a converb, takes place, constituting one activity and the final verb is the conclusion of the activity. In this function, the final syllable of the converb has 'rising stress'.

(13) *bärr-u-n* *käft-´ó* *ï-bet* *gäbt´-ó*
door-DEF-ACC open-3MSG:CNV LOC-house enter-3MSG:CNV

ïk'awïn *azzägajt-´ó* *bet-u-n*
goods.DEF-ACC arrange-3MSG:CNV house-DEF-ACC

t'ärg-´ó *hedä*
sweep-3MSG:CNV go:3MSG:PAST

'He opened the door, entered the house, arranged the things, swept the house, and left'

This prosodic distinction on the intonational-phrase-final syllable, however, does not appear to be made by all native speakers, according to our information.

– *Coextensive*, where there is no subsequent relation. In this function, the converb does not carry special stress. Three sub-functions are included under the coextensive: 1) the actions of the converb and the final verb occur simultaneously (and the converb is a stative verb), as in ex. (14); 2) the contents of the two verbs (converb and final) make up one verbal meaning, as in (15); 3) the use of the converb is governed by the lexical nature the subsequent verb, as in (16):

(14) *k'om-o* *tännaggära* 'he talked standing'
get up-3MSG:CNV speak:3MSG:PAST

(15) *tämällïs-o* *hedä* 'he went back [=returning]"
return-3MSG:CNV go:3MSG:PAST

(16) *t'ät't'ït-o* *c'ärräsä* 'he finished drinking'
drink-3MSG:CNV finish:3MSG:PAST

Hetzron (1972) also discusses the structure of the so called *m*-converb in some south Ethio-Semitic languages, which is formed from a tensed verb (see above) and the *t*-converb in some Gurage languages, which is similar to the converb paradigm in Amharic but with an additional *t*- within the inflected converb. For reasons of space and also because the functions are essentially similar to that of Amharic above (i.e. consecutive, serial and coextensive), we will not discuss Ethio-Semitic any further, and instead move on to another major African language phylum where converbs are attested, Nilo-Saharan.

4. Converbs in Nilo-Saharan

In his comparative study of "Sudansprachen" (Sudanic languages), the great Africanist Westermann (1911: 61) made reference to a morphosyntactic property which he called verbal compounding ("Verb-Anhäufungen"). For Westermann, Sudanic languages constituted an areal and genetic grouping, roughly corresponding to Niger-Congo and Nilo-Saharan in modern terms, and contrasting with Hamito-Semitic (or Afroasiatic in more modern terms) mainly towards the north as well as with Bantu mainly towards the south of this belt.

As observed in our survey of Afroasiatic languages with converbs above, verbal compounding is also prominent in these languages. But Westermann was quite right in pointing out that Nubian languages (now classified as Nilo-Saharan), for example, also tend to form complex predicates on the basis of two or more verbal roots or stems. As we know today, Nilo-Saharan languages in which this typological property is attested also tend to use converbs in order to mark dependency relations. In fact, verbal compounding seems to be the outcome of a rather permanent drift or slant from collocations of converbs plus main verbs in Afroasiatic as well as Nilo-Saharan languages (Azeb Amha and Dimmendaal 2005).

There is no general consensus on the genetic classification of Nilo-Saharan languages (the interested reader is referred to Ehret 2001 for further details). At the same time, lower-level units such as Nilotic, Nubian or Saharan have been accepted for decades by most scholars working on these languages. Below, we present a survey of converb constructions in these lower-level genetic units from an areal perspective, starting from the westernmost Nilo-Saharan languages where converbs are attested, the Saharan languages spoken in the region around Lake Chad, and moving eastwards towards the Afroasiatic area in north-eastern Africa. Unfortunately, this listing cannot be exhaustive. There are a number of subgroups belonging to the Eastern Sudanic group within Nilo-Saharan where converbs may in fact be common, but where data are inconclusive, e.g. Nyimang and Afitti, two closely related languages spoken in the Nuba Mountains, and possibly, a number of Surmic languages spoken in an area adjacent to Omotic (Afroasiatic) languages in Ethiopia. A proper investigation of converbs and related properties in these languages can only be undertaken once more detailed data become available.

4.1. Saharan

The westernmost languages on the African continent with converb constructions probably are to be found in Saharan, a Nilo-Saharan subgroup situated in a region comprising north-eastern Nigeria, eastern Niger, Chad, and to a lesser extent northern Cameroon. The Saharan group consists of Kanuri, Tibu, Berti and Beria (or Zaghawa).

The first detailed analysis of a Saharan language was presented by Lukas (1937) for Kanuri. Lukas gives an extensive discussion of verb morphology (1937: 35–126), and makes reference to the so-called "conjunctive", which is used "… to connect actions with other actions which carry them on." The Kanuri conjunctive, which is fully conjugated for person and which never stands alone, is treated as a tense form by Lukas, next to the continuous, optative, predicative and other verb forms. In addition, the author makes reference to dependent verb forms used in adverbial temporal clauses (Lukas 1937: 70–71), as well as participial tense forms (Lukas 1937: 72–73) and verbal nouns (Lukas 1937: 75–76), playing various roles as nominalized forms in the tense-aspect system. Cyffer (1978), in his study on the verb in Kanuri, refers to this dependent verb form as the consecutive.

Similar structures appear to occur in Teda-Daza, a Saharan language spoken in Chad, Libya, Niger and Nigeria. In their description of the Tibu variety of Teda-Daza, Ch. and M. le Coeur (1956) point out that Teda often uses clausal juxtaposition in order to express a sequence of actions. The semantic interpretation as either involving anteriority or cause/effect relations, is expressed either through aspectual oppositions or by way of distinct verb forms (e.g. relative, conditional, or gerunds), according to Ch. and M. le Coeur (1956: 104).

One thus observes a syntactic strategy in these languages which is reminiscent of converb constructions elsewhere. But in the absence of a full identification of the verbal (as against nominal) nature of these constructions, and possible alternative verb forms in other dependent clauses, their status must remain somewhat ambiguous as yet.

The first clear-cut reference to the grammatical concept of converb within Saharan studies, or Nilo-Saharan linguistics for that matter, is to be found in a recent study by two linguists working in a project on language contact in north-eastern Africa and Southeast Asia at the University of Mainz (Germany). In their highly interesting description of the Saharan language Beria (also known as Zaghawa), Crass and Jakobi (2000) make

reference to the sequencing ("Sequentionalisierung") of event structures, which is formally marked by way of a suffix -ɛ/-e on the verb of the dependent clause (presumably the same suffix historically as the Kanuri consecutive marker -*ɛ* described by Cyffer 1978).

(17) *áī bágárá égī nɔ̀ɔ́g-é gènìr ɟúgí*
1SG friend my visit:1SG-CNV village:DAT/LOC go:1SG:PF
'I went (in)to the village to visit my friend'

The order of event description in the example above appears to be anti-iconic, in that the visit follows going to the village in event sequencing, but is mentioned before it in the sequencing (although this could also be a translation problem). As pointed out by the authors, the same suffix is used in order to express an adversative meaning.

(18) *kìɛ̀ égīr bágárá égī káṛ-ɛ̄ áī*
place my:DAT/LOC friend my come:3SG:PF-CNV 1SG
bìɛ̀r é-ɾɔ̀
house:DAT/LOC 1SG:be-NEG
'my friend came to me, but I was not there (at home)'

Crass and Jakobi distinguish this type of construction from other types of dependency relations, e.g. those expressing a temporal relation:

(19) *úú bágárá égī kárí-dɔ̄ áī áár`*
TEMP friend my come:3SG:PF-REL 1SG already
ɛ́kɔ̂ldʊ kīɛ̄gí
school:DAT/LOC leave:1SG:PF
'when my friend came, I had already gone to school'

Apparently, the authors were advised with respect to terminological use by a typologist with distinctive knowledge about Asian as well as Ethiopian languages with converbs, Walter Bisang, himself a contributor at the time to the volume on converbs edited by Haspelmath and König (1995). Here, then, is the first instance of in-depth research into the use of converbs in a Nilo-Saharan language.

4.2. Maban

The Maban group within Nilo-Saharan constitutes a poorly understood cluster of languages spoken in Chad, Sudan, and northern Congo (Brazzaville). It consists of Maba, Masalit, Runga and Mimi. Trenga (1947) constitutes one of the first sources on these languages, more specifically on Maba or Bura Mabang. As pointed out by the author (Trenga 1947: 94), a sentence like 'the lion left, ate, became satiated, came back and entered' involves one main verb 'entered', occurring in sentence-final position; all remaining forms expressing events are expressed by way of, what the author calls, "participial" verb forms in Bura Mabang. The texts (Trenga 1947: 141–209) in fact contain numerous examples of this type of (converb) construction:

(20) *soḷtān abdülkérīm ūld ğamé gāk makkaginér*
sultan Abdulkerim son of.Djame when Mecca.from

taranu dār tonğur-na karan iokoïn tuğuno
he.came land Toundjour-GEN come:CNV seen:CNV he.returned
'When Sultan Abdulkerim Ould Djame came from Mecca, he went to explore the land of the Toundjour and returned.'

In their survey of the Maban group, Tucker and Bryan (1966: 197) again use the term "participle" (formed by way of a suffix *–Vn* in the Maban group) in their description of this syntactic phenomenon. The authors also point out that "[w]here several Verbs are involved, the Participle … is used for all except the last" (Tucker and Bryan 1966: 204). An example from Bura Mabang, where the 'ing' in the interlinear glossing, retained from Tucker and Bryan, marks off converbs:

(21) *ti ja torrombosi tenen nar-an nemere ka-dau-an*
he then camels his bringing well saddling

timsig-go ka majetu tene ka torrombosi-nuun
Princess-the and slaves her and camels-on

ta-ndan-a
he.caused.to.mount
'Then he, having brought his camels and saddled them well, mounted the Princess and her slaves on the camels'

Interestingly, Tucker and Bryan draw attention towards typologically similar constructions in Nilo-Saharan groups such as Barya, Kunama, as well as to the Cushitic language Bilin (1966: 589) and the Semitic language Amharic; clearly, then, the authors were fully aware of the fact that similar strategies are found in these other languages.

In a more recent study, Edgar (1989: 34–35) has presented a list of suffixes in Masalit, Maba's closest relative within the Maban group, which are added to verbs in order to express semantic notions such as condition, but also a sequence of actions, or simultaneous actions. In a sequel with Masalit texts (Edgar 1990), the author gives various examples of this morphosyntactic strategy:

(22) a. *màsàrá fòrtá ráyìn kói yàsín*
Masalit Furs:ACC driving all killing

gàmàràddíinwò ìibìná
Qamruddiin:ACC they.seized
'the Masalit drove the Fur out and killed them all and took Qamruddiin'

b. *màdá làŋán ñùŋgú ñǎn sá tàaráŋá*
millet.beer drinking meat eating rain it.finished

kòrnáŋ sìr ɛ́nà
getting.up going.away they.did
'they drank the beer and ate the meat and when the rain stopped, they got up and went on their way'

c. *káàmbo kìyɛ́ɛdɛ̀ máamà tùyá*
people.with walking rabbit he.killed
'while walking with the people, he killed a rabbit'

In his description of another Maban language, Aiki (Runga), Nougayrol (1989) focuses on phonology and lexical categories, rather than on complex clauses. But when studying the texts included in his description (Nougayrol 1989: 87–103), one gets the impression that this language does not use converbs. Aiki as well as the Maban language Kibet are spoken in the border area between the Central African Republic and Congo (Brazzaville), where mainly Central Sudanic languages are spoken. Converbs do not seem to occur in this latter Nilo-Saharan group. Only historical-comparative research can help to clarify whether the absence of this feature is due to loss (or "negative borrowing") in Aiki and Kibet, or

whether, alternatively, converbs in other members of the Maban group spoken further towards the north are to be explained as the result of diffusion across the group after they had split up. The situation accordingly would be similar to that observed for Ethiopian Semitic above.

The Maban group shares many morphosyntactic properties with other Nilo-Saharan groups in the area, e.g. Fur (or Amdang) as well as the Taman languages. These features include a verb-final syntax, extensive case marking, adverbial clauses preceding the main clause, as well as morphophonemic alternations involving metathesis and consonant mutation. It is not clear whether Fur (or the closely related Amdang language) use converbs. But for Tama, one of the members of the Taman cluster, there is clearcut evidence for converb construction as a strategy expressing dependency relations within a complex clause.

4.3. Tama

The Tama(n) cluster, situated in the border area between Sudan and Chad, includes at least the following languages: Erenga, Sungor, Merarit, and Tama. Since these languages are spoken in an area adjacent to the Saharan cluster, where converb constructions are common, and since the Tama languages share many morphosyntactic properties with these and other neighbouring languages, one would expect these languages to use converbs in complex clauses. This indeed turns out to be the case. As yet unpublished fieldnotes collected by the second author of the present contribution show that at least one language from this cluster, Tama, uses this strategy in order to express a sequence of actions. Tama distinguishes between imperfective and perfective aspect in main verbs; also, person marking is expressed on such verbs. In a corresponding converb paradigm in Tama person marking is retained as a formal inflectional category (although the actual person-marking morphemes are not necessarily identical between main verb and converb), but aspect does not appear to be marked, as the following paradigms for the verb ‘go’ illustrate:

Table 7. Paradigm of the verb‘go’in Tama

	IMPERFECTIVE	PERFECTIVE	CONVERB
1SG	*n-òòǐ*	*n-óó!rú-ŋó*	*n-a̋w*
2SG	*òòǐ*	*óó!rú-ŋó*	*a̋w*
3SG	*lóǐ*	*wa̋!rú-ŋó*	*k-a̋w*
1PL	*k-òòǐ*	*k-óó!rú-ŋó*	*k-a̋w*
2PL	*òòyɛ́*	*óó!rɪ́ó-ŋó*	*a̋wɔ́*
3PL	*lóɛ́*	*wa̋!rɪ́ó-ŋó*	*ka̋wɔ̀*

Tama is a verb-final language with core as well as peripheral case marking, where dependent clauses including those containing converbs precede the main clause.

(23) *wâ* *n- a̋w* *ánnún* *gǐ* *ùnnùn*
1SG:NOM 1SG-go:CNV mother:ACC with father:ACC
gǐ *sàláàm* *n-ɛ́sɛ̂ì*
with greeting 1SG-perform
‘I am going to see/visit my father and mother’

Converb paradigms in Tama are formally distinct from other types of verbs in dependent clauses, e.g. in adverbial clauses of time. The latter are characterized by a suffix -sɛ on the final verb in the dependent clause:

(24) *tíín-sɛ́* *Khartoum* *wó!rú-ŋó*
3SG:eat-PF Khartoum 3SG:go-PF
‘after having eaten, (s)he went to Khartoum’

Within Nilo-Saharan, the Nubian languages probably constitute Tama’s closest relatives. Their closest relative in turn appears to be Nara (in Eritrea). As shown next, converbs are extremely common in at least one variety of Nubian as well as in Nara.

4.4. Nubian

The Nubian languages are spread over a large area of the northern Sudanese Nile Valley with an extension into Egypt, the Nuba Mountains, and Darfur. To date, there is only one Nubian language for which converb

constructions have been described in considerable detail. Given the fact that several Nubian languages are closely related, it is to be expected that varieties other than Dongolese Nubian have converbs as well. Unfortunately, however, not enough positive evidence is available for this morphosyntactic property in the remaining Nubian languages. For example, Werner (1987) presents an extensive description of verb paradigms in Nobiin (Nile Nubian), but their role in discourse is not further discussed. We will therefore restrict the discussion to Dongolese Nubian as described by Armbruster (1960). In his impressively detailed study, Armbruster describes how constructions in at least one variety of Nubian, Dongolese Nubian (spoken mainly in the Upper Nile valley region of northern Sudan and southern Egypt), may consist entirely of verbal stems or parts of verbs. As noted by the author (p. 261) with respect to the types of verb-complex where all components are verbal stems, the former part, though formally verbal, is functionally adverbial, and so is grammatically subordinate to the latter part, the verb:

(25) *aw wiccirki* *sokkɛ-ǧómkori*
1SG.stick.ACC take.up:CNV-strike
'taking up my stick I struck him/her/it'

Armbruster also contrasts what would today be called converb constructions with consecutive or subsequent event descriptions, pointing out that when verbs are to be coordinated, distinct consecutive verb forms are used, each of which is conjugated (Armbruster 1960: 262).

4.5. Nara and Kunama

Several hundred miles east of the region where Dongolese Nubian is spoken, another Nilo-Saharan language with converbs, Nara (also known as Nera or Barya), is found. In their survey of languages of north-eastern Africa, Tucker and Bryan (1966: 334) have pointed out with respect to this language in western Eritrea that "where several verbs are involved, the gerund… is used in all except the last …" The authors give a number of examples in their description.

(26) a. *o* *go* *mes-ing* *oto*
me to speak-ing he.came
'he came to speak to me'

b. *bel-ling oto*
forget-ing he.came
'(I) having forgotten, he came'

In a subsequent study, Thompson (1976: 490) arrived at similar conclusions with respect to the use of Nara "participles", as the author calls them; the latter are not inflected for tense, aspect or mood, unlike the last verb. Adjoining the Nara region in western Eritrea, another genetically isolated Nilo-Saharan language cluster with converbs is spoken, Kunama. Tucker and Bryan (1966: 346) with respect to this group: "where several Verbs are involved the Participial form is used in all except the last…" The authors distinguish between a Present Participial (or Gerund) form, and a Past Participial form (or 'Permansive', following a tradition in Semitic studies).

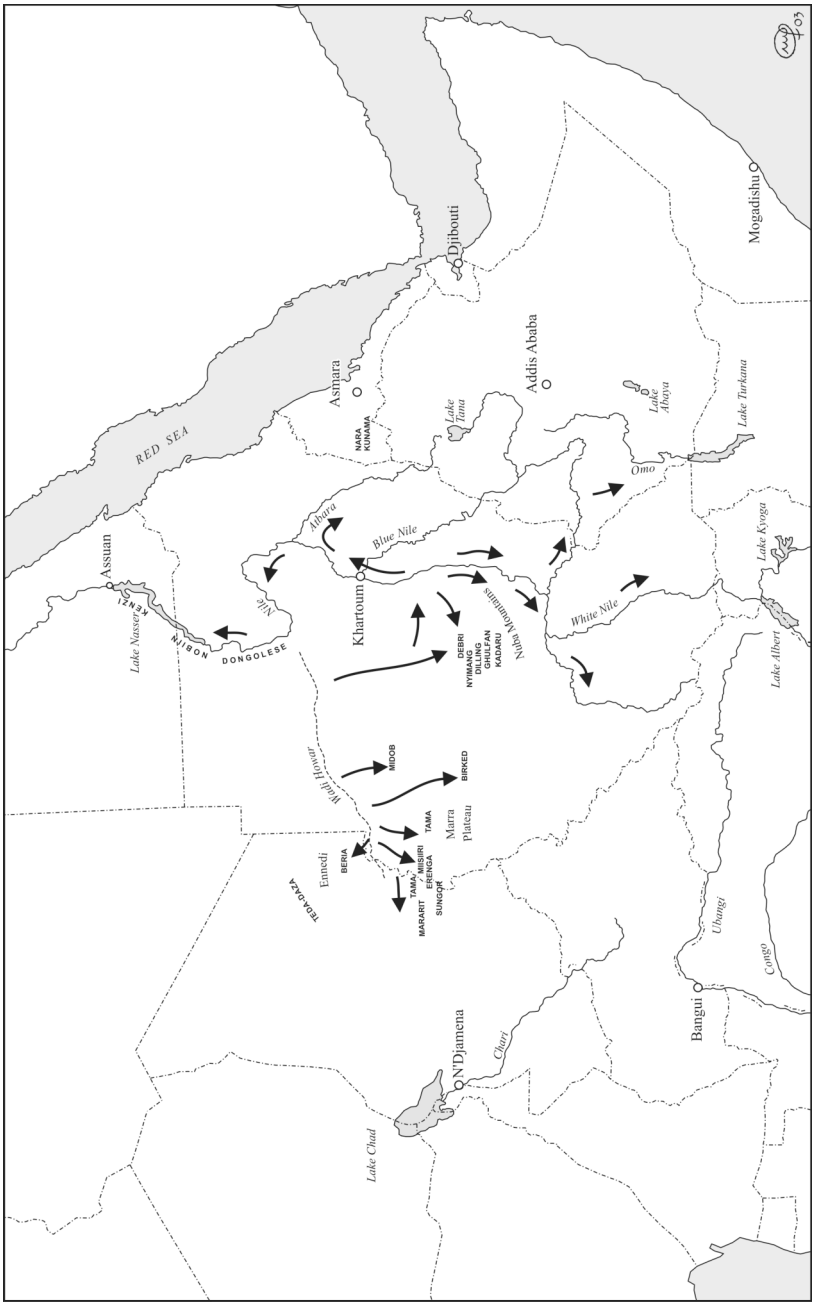
In a more recent study, Thompson (1989: 338) points out that subordinate clause markers in the Kunama group are added to verbs, and that they are used for clauses in sequence or simple compound sentences. Thompson further points out (p. 338) that "Bender [i.e. the editor of the volume; AA and GJD] calls such dependent verb forms "converb", on the suggestion of Hetzron after Polotsky". Bender himself published a sketch of the same language cluster, and in fact uses the term converb (Bender 1996: 36-38), moreover pointing out that converb constructions are in contrast with auxiliaries and compound verbs. Also, converbs are contrasted with participles and gerunds in his Kunama sketch; the latter two categories use the full range of demonstratives, possessive suffixes, and thus are more referential or nominal in character than converbs, as pointed out by Bender.

5. A note on diffusion versus genetic inheritance

African languages with converbs have a clear-cut areal distribution. First, they occur in Afroasiatic languages of Ethiopia belonging to Omotic, Cushitic, and Semitic. In the case of Semitic it is clear that converbs are the result historically of areal adaptation to the structure of neighbouring Cushitic and Omotic languages. What about Nilo-Saharan then? Nilo-Saharan languages in which converbs are attested do not form a genetic subgroup within the phylum, in fact several of them are only distantly related, e.g. Saharan and Nubian. Nevertheless, as these Nilo-Saharan languages share other typological properties with Afroasiatic languages,

e.g., a verb-final syntax with extensive case marking, and as this cluster of properties is absent in Nilo-Saharan languages further to the south, some historical explanation is in order; cf. Heine's (1976) typology of African languages based on the order of meaningful units, which appears to have been the first to point out that these Nilo-Saharan languages probably form a convergence zone with Afroasiatic languages in north-eastern Africa.

Today the Nilo-Saharan languages sharing the set of typological properties alluded to above do not form an entirely contiguous zone geographically, as Map 1 helps to illustrate. They are spoken in an east to west dimension though often in isolated spots in the eastern and central Sahel region. However, there is interesting paleoclimatic evidence that the picture was different several thousand years ago. Between 9000 and 4000 B.C. this region was more humid, held numerous lakes, and teemed with fauna savannah, as shown by Pachur and Kröpelin (1987). During this period the southern edge of the eastern Sahara was some 500 kilometres further north than today, whereas there was a river system characterized by numerous ground water outlets and freshwater lakes with an overall length of more than 2700 km, known as the Wadi Howar, flowing eastwards from Eastern Chad and entering the Nile between the third and fourth cataracts. There is also archaeological evidence that this region played an important role in the areal diffusion of material culture, e.g. the distribution of particular earthware traditions (Jesse 2000; Keding 2000). The Wadi Howar region appears to have been abandoned by humans about 1000 B.C. As Map 2 shows, today's Nilo-Saharan languages with converbs are spoken towards the south and west of the Wadi Howar region, in areas where there is enough water supply. Possibly, then, we are dealing with an ancient diffusion zone whereby the Wadi Howar as an east-west connection played a role in the diffusion of linguistic features amongst the various languages of the area, including the use of converbs. Given the widespread use of converbs in the Ethiopian region over genetically rather distinct groupings (Omotic, Cushitic and Ethiopian Semitic), and the absence of this feature in other Afroasiatic branches (Chadic, Berber and Ancient Egyptian), northeast Africa probably served as the centre of diffusion with respect to the use of converbs. The gradual desertification in the Saharan region over the past 5000 or 6000 years resulted in geographical isolation of Nilo-Saharan language groups, and a concentration of settlements along remaining water sources in the Nuba mountains and west of this region in Sudan, as well as in the border area between Chad and Sudan, a region



Map 2. The Wadi-Howar diaspora

characterized by mountains and watersheds. Due to the relative isolation of these areas and paucity of contact with other languages or language types, these languages appear to have retained these archaic diffusional traits.

6. Catching African languages with converbs: Some cross-linguistic generalisations

In the previous sections we illustrated the structure and use of the converb in two African language phyla. In this section we present a synthesis of the main findings by listing the main characteristics or recurring features of converbs reported for these African languages. In doing so, we will indicate whether or not these findings are different from languages outside the continent. The descriptive data emerged from different Africanist streams at times isolated from one another as well as from language typology in general. We will begin therefore with a more general point about the effect of these various research traditions on the understanding of converbs from a general linguistic point of view.

In studies on Afroasiatic languages there has been a strong tendency to focus on morphological properties of the converb, whereas its function has been described mainly in terms of conjoining relations. Although the morphosyntactic properties reported in the various languages appear to be similar, the terms used by different authors to designate this category in the extant languages are quite diversified, as Table 8 (below) shows.

The nomenclatural differences observable between various authors with regard to the dependent-verb type discussed in this paper at times has led to opposing claims regarding the structure of languages in the area. Thus, where one author claimed that a certain language lacks converb constructions, e.g. Goldenberg (1988: 91) with respect to Tigrinya, other authors e.g. Hetzron (1975b) make an assertion to the contrary. Similarly, Tosco (1996: 84) states that " East Cushitic languages other than Highland East Cushitic do not have a converb". In contrast to this latter assertion studies on some of the languages belonging to the East Cushitic group report a special dependent verb form which has functions parallel to the converb in Amharic. Among these we find Gragg (1976) and Griefenow-Mewis and Tamene (1997) on Oromo, or Bliese (1976) on Afar. It seems that the difference in opinion is based on the emphasis attached to some morphological aspect. Thus, Goldenberg's (1988) view that Ge'ez, Amharic and Tigrinya have gerunds seems to depend on the fact that the

verbal form under consideration – our converb – is non-tensed (containing just a verb stem plus nominal inflection), whereas the forms he does label as converbs in Tigre, Harari, Chaha, etc. are tensed (i.e. verb stem-aspect-conjunctive particle). Exactly the opposite view is expressed with respect to East Cushitic languages, which – in spite of the functional parallel – are said to have no converbs because the verbs in question are morphologically marked for tense.

Table 8. Alternative terms for converb constructions in Afroasiatic studies

Language	Label	Author
Amharic, Oromo, Wolaitta	Gerund	Ferguson 1976, Leslau 1995, 2000, Kapeliuk 1997, Lamberti and Sottile 1997
Gurage, Amharic, Awngi, Aari	Converb	Polotsky 1951, Hetzron 1969, 1975b, Tosco 1996, Hayward 1990, Azeb Amha 2001
Afar, Beja, Bench	Participle	Tucker and Bryan 1966, Bliese 1976, Hudson 1976, Breeze 1990
Oromo	Consecutive	Gragg 1976,
Amharic	Constructive mood	Isenberg 1842
Amharic	Short imperfect	Cotterell 1964
Amharic, Argobba	Conjuctive verbs	Hudson 1997
Hadiyya, Oromo	Serial verbs	Sim 1989, Griefenow-Mewis and Tamene 1997
Hadiyya	Medial verbs	Sim 1989
Burji, Gedeo, Sidamo	Dependent verbs	Wedekind 1990

The use of these various labels appears to have hindered comparative studies aiming at properly establishing the morphological, syntactic and pragmatic features of converb constructions. The distinctive functions of converbs as against “gerunds” and “participles” as found in Indo-European languages was observed as early as 1842, when Isenberg wrote the following in his grammar of Amharic:

> This is a singular mood, which has nothing corresponding, either in our European or in the other Semitic languages; although its form, as far as the simple one is concerned, answers the Ethiopic infinitives *gäbir* and *gäbro*; but this mood is not an infinitive. It has nothing of a substantive character; whereas the infinitive is the first verbal substantive, possessing both the character of substantive and verb. Nor is there any other mood to which it exactly corresponds: neither participle or gerund, nor finite verb, will answer it; although it may be occasionally translated by either, and sometimes by an adverb.

Isenberg coined the term "constructive mood" for constructions now commonly referred to as converbs. However, the use of terms such as "gerund" and "participle" persisted. In a number of publications on Ethio-Semitic and Cushitic languages, Hetzron insisted that the term "converb" is more appropriate than other terms in describing dependent verb forms which are used in order to "conjoin" sentences and to form complex predicates (cf. Hetzron 1975b, 1976). More specifically, Hetzron (1976: 59) criticized the use of the terms "participle" and "perfectum subordinatum" in studies of Agaw (Cushitic) languages:

> This is a typical translation-oriented nomenclature rendering the pseudo-literal translation of the form into European languages, rather than recognizing its true function within Agaw. The same is true for the use of the term "gerund" (French "gérondif") in Ethiopian-Semitic, inspired by the "petit nègre" translation "en faisant" rather than by analysis of its true function.

Hayward (1991) makes similar observations about terms and traditions in this respect. He also points towards the *apparent* functional similarity between participles and converbs, and states that the alternative use of these two terms obscured the functional difference among these forms, namely that "… while participles have both verbal and nominal characteristics, converbs are only ever verbals" (Hayward 1991: 548). The term "gerund" is also rejected for a similar reason: "Many earlier, and some more recent, Ethiopianist linguists refer to these forms as 'gerunds' (Italian gerundio, French gérondif, etc.). In view of the entirely non-nominal properties of these forms, this term seems singularly inappropriate" (Hayward 1991: 547).

In his survey of morphosyntactic strategies across languages, Payne (1997: 320) states "... in clause-chaining languages, ... the sequentially final in a clause chain is inflected for tense or aspect while the other clauses are not". Indeed, cross-linguistically, the temporal, aspectual or

modal interpretation of the converb construction often depends on the main verb. According to Masica (1976: 112) one of the possible collective characteristics of conjunctive participles is "lack of such features of the finite verb as personal endings – attribution of subject and also absolute tense deriving from the finite verb on which it is dependent". The condition that the converb should be a non-finite (especially non-tensed) form is also considered to be essential in the definition of the term 'converb' in the typological study by Haspelmath (1995). However, a number of languages which do not adhere to this restriction are reported, e.g. Huallega Quechua (Haspelmath 1995: 9). In a number of African languages the converb is also marked for tense and/or aspect, as we saw above. Among the Afroasiatic languages there appear to be two types of languages with respect to finiteness. In some languages the suffix marking the converb may occur in combination with tense-aspect markers. Languages that form the converb from a tensed verb include Oromo, Hadiyya and Sidamo (Cushitic languages), and Bench (Omotic), Silt'i and Zway (East Gurage within Ethio-Semitic) and Outer South Ethiopic languages such as Soddo, Goggot and Muher (cf. Hetzron 1997: 547). In other Afroasiatic languages the converb is formed by affixing nominal inflectional morphemes (i.e. person, number and/or gender markers or case) to a verb root or a verb stem without tense-aspect or modality marking morphemes. It is still the case, however, that the morphemes marking subject agreement in converbs are distinct from those which mark subject agreement in main verbs, as can be seen from the paradigms of Awngi (Cushitic); Bench and Wolaitta (Omotic). In Amharic, Argobba, Ge'ez and Tigrinya (Ethio-Semitic) most of the agreement markers on converbs are similar to possessive suffixes (cf. Leslau 1995, 2000).

The situation appears to be equally diverse in Nilo-Saharan languages with converbs, but detailed analyses are still lacking in this respect. Crass and Jakobi (2000) point out that in the Saharan language Beria the converb is inflected for person as well as aspect, in other words it has the same inflectional properties as independent or main verbs. Dongolese Nubian and Tama on the other hand appear to belong to the first type, where only the last stem in such a complex predicate is conjugated (Armbruster 1960: 260 for Dongolese Nubian; Dimmendaal, unpublished fieldnotes, for Tama).

In terms of the actual temporal relation between the converb and the main verb most studies have shown that the converb expresses a situation that is anterior (consecutive) or simultaneous with that expressed by the

main verb. However, languages differ in the morphological treatment of the temporal relation between anterior and simultaneous verbs, e.g. by related but distinct morphemes (Wolaitta, Maale), by unrelated morphemes (e.g. Amharic), or by using verbs belonging to different modal paradigms (as in Oromo).

Another feature which received attention in many studies is the syntactic position of converbs. In Afroasiatic and Nilo-Saharan languages with converbs the latter usually precede the main verb regardless of the temporal relation between the two verbs. This contrasts, for example, with what has been reported for Russian, e.g. by Jacobsson (1969: 54), where it is observed that "... the gerund normally stands after the main verb if it expresses a contemporaneous action ... while it stands before the main verb if it expresses a preceding action". In Afroasiatic and Nilo-Saharan languages with converbs, word order is not employed for distinguishing between co-temporality (simultaneous) and sequentiality (anterior or posterior). Rather, most of these languages (though not all, e.g. Oromo, which only changes the modality of the verb) use morphological means for such temporal distinctions.

One additional characteristic feature of converbs, attested in all the languages surveyed but not discussed further here for reasons of space, is their role in the formation of complex predicate or compound verb forms, whereby the converb plus a main verb construction express a single event or situation. For example, Adams (1983: 168-173) and Azeb Amha (2001b: 60-62) show that in Wolaitta the function of such verb compounding varies from lexical to adverbial (e.g temporal) modification of V_1 by V_2 and more grammaticalized (aspectual interpretation) in which the lexical meaning of V_2 does not seem to (directly) contribute to the meaning of the compound verb. Similar uses of the converb in verbal compounding are also reported for Maale (Azeb Amha 2001a), Zayse (Hayward 1990), and Amharic (Leslau 1995, 2000). Masica (1976) includes a similar kind of verb compounding in his typological study and in his areal map involving eastern (Asian), western (Indo-European) and southern (East African) languages. (See also Azeb Amha and Dimmendaal 2005 for a survey of this phenomenon in African converb languages.)

Some of the languages examined distinguish between same-subject converb markers and different-subject converb markers (e.g. most of the Omotic languages), whereas others do not make this distinction. For example, the first person singular converb marker in the Amharic examples

below remains the same although the subject of the converb and the matrix verb are identical in (27a) and disjunct in (27b).

(27) a. *wädïk'k'e* *tänässahu*
fall.1SG:CNV get.up.1SG.PAST
'Having fallen, I got up'

b. *wädïk'k'e* *anässa-ñ*
fall.1SG:CNV raise:3MSG:SUBJ:PAST-1SG:OBJ
'I having fallen, he helped me to stand up'

Compare also the example from the Nilo-Saharan language Nara in (26) above, showing how one and the same converb is used for either type. By contrast, in Wolaitta, the form of the converb differs depending on whether the subject of this verb and that of the matrix verb is the same or not, as can be seen from the equivalent forms of the above Amharic sentences. The different subject marker (DS) -*in*(*i*) is invariable for person, number or gender.

(28) a. *kúnd-ádá* *dend-aási*
fall-1SG:CNV get.up-1SG.PF
'Having fallen, I got up'

b. *táání* *kúnd-ín* *ʔí* *táná* *dent-íísi*
1SG:NOM fall-DS:CNV 3MSG:NOM 1SG:OBJ raise-3MSG.PF
'I having fallen, he helped me to stand up'

The use of such morphological distinctions needs to be further studied on the basis of text analyses and spontaneous dialogues.[2] At present, most of the material available on the converb suggest that more studies focusing on the syntactic and discourse-pragmatic aspects of this verbal form are needed. There are already some publications along these lines, but these are limited to a few well-documented languages. One such example is Gasser (1983), a study on topic continuity reporting on the role of converbs and other dependent verbs in maintaining text coherence with data from one of the oldest novels in Amharic. Leslau (1995, 2000) presents a remarkably detailed analysis of the converb on Amharic. Similarly, Wedekind (1990) on Gedeo, Burji and Sidamo (Highland East Cushitic languages) departs from the morphology-centred tradition of (Afroasiatic) linguistics, instead basing himself on historical narratives and stories

thereby dealing not only with morphological, but also with syntactic as well as pragmatic features such as focus strategies.

Studies based on larger text corpora can make important contributions to our understanding of additional interesting aspects of converbs, e.g. frequency of use (cf. Masica's 1976: 130 observation on this). In many of the languages surveyed, the converb is reported to be used extensively in narratives. In his description of the Nilo-Saharan language Bura Mabang, Trenga (1947) also included texts with interlinear glossing (pp. 144-209). When studying these, one notices that converb ("participial") forms are indeed frequently used. For example, in the first text containing thirteen lines, there are twelve converbs. Breeze (1990: 54-55) reports that in the Omotic language Bench "participles" are extremely frequent: "In fact, their occurrence outnumbers that of other verb forms in a ratio of approximately 3:1. They often occur in series with up to four different participles following one after the other"; also, "[t]he same participle may be reduplicated up to four times to indicate repetitive action." (Breeze 1990: 55). Similarly, Bliese (1998) shows that in a discourse analysis of Amharic narrative texts, a converb or a series of converbs followed by a main verb in the perfective aspect is the most preferred strategy of showing main events. In contrast to this, Kapeliuk (1997: 496) observes that "in contemporary Amharic there has been a sharp decline in the use of the historical gerund as a subordinate verb form." The author refers to a statistical study undertaken by F.P. Cotterell, who demonstrated that the use of the gerund dropped from almost one hundred in a sample of one thousand words in a text from 1880 to twenty four per thousand words in a text written 85 years later.

Another poorly understood aspect of the pragmatic role of converbs is their use as main predications. No examples are available as yet for Nilo-Saharan languages in this respect. But for Afroasiatic languages there are various indications. For Amharic Leslau (1995: 363) observes the following: "At times the gerund stands alone at the end of the sentence without a principal verb. ... This usage of the gerund occurs when it refers to, or is a continuation of, a thought expressed in the preceding statement, or in an answer to a question". Consider the responses in (29b) and (30b) for the questions in (29a) and (30a):

(29)	a.	*kassäcc*	*yät*	*alläcc*	b.	*hed-a*
		K.	where	exist:F:Q		go-3FSG:CNV
		'Where is Kasech?'				'Why, she has already left'

(30) a. *mïgïb allä*
food exist:M:Q
'Is there food?'

b. *molt-o*
be.plenty-3MSG:CNV
'(There is) plenty indeed!'

Alternatively, a strong wish may be expressed this way in Amharic (from Leslau 1995: 363)

(31) *yïh mïskin bädänb bält-o ayïcc-e-w*
this:M poor.person well eat-3MSG:CNV see-1SG:CNV-3MSG:OBJ
'I wish I could see this poor person well fed'

Similar strategies have been observed for Tigrinya by Kogan (1997: 438), and for the Omotic language Maale by Azeb Amha (2001a). What these strategies seem to express is an antecedently existing common ground or engagement in a prior statement in a speaker-hearer interaction. As pointed out by Du Bois (2002),

> In the syntax of engagement, words and structures and other linguistic resources invoked or constituted by the first speaker-including stances-are frequently reused by the second, whether the second speaker's stance is parallel, opposed, or simply orthogonal to the first's.

The independent use of converbs in these African languages would seem to constitute an almost perfect example of the type of dialogic syntax alluded to by Du Bois. Compare also Evans (to appear) for a cross-linguistic survey of this phenomenon. Such pragmatic strategies may only be discovered through the collection of various types of discourse, e.g. connected speech or texts, or, alternatively, by learning to speak the language, which may also create a critical awareness of contrasting strategies; compare, for example, the discoveries made by Armbruster or Ch. and M. Le Coeur, who were fluent speakers of the languages they investigated. To this, we may now add knowledge derived from the study of converbs outside of Africa. There appears to have been no general awareness among most Africanists of any typological similarities with the better known converb languages of Asia, or Papuan languages using medial verbs. On the other hand, the fact that Nilo-Saharan languages in particular have not played a role in the typological discussion on converbs so far (e.g. in the volume edited by Haspelmath and König 1995) appears to have been largely due to the fact that typologically similar phenomena in these languages have been couched in a plethora of distinct terminologies. As we saw above, it was only during the second half of the 1990s that

authors started using the term converb in the context of Nilo-Saharan studies, although in Afroasiatic studies it was introduced forty years earlier.

Only by cross-breeding between these descriptive traditions from Asia, America and Africa with language typology (as a heuristic device) may we begin to understand the range of morphosyntactic, semantic and pragmatic possibilities allowed for in converb constructions, and thus ultimately catch the grammatical structure of these languages.

Notes

1. The full form of the converb (as well as the main verb paradigm) actually is derived historically from a complex form, i.e. converb plus the existential verb *de?-* which itself is inflected like the converb (cf. Hayward 1984).
2. It is not that scholars who worked in earlier grammars did not collect texts or did not use them in their analysis. On the contrary, most of these scholars lived among the speech community, spoke their subject language fluently and collected a number of texts (Goldenberg, Drewes, personal communication). The fact that more exhaustive syntactic, pragmatic and comparative or typological study of converbs and perhaps other related categories was not carried out could be due to some extent to the priority given to family-internal comparison.

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Abbreviations

A	affirmative
ABL	ablative
ABS	absolutive
ACC	accusative
CAUS	causative
CNV	converb
CON	connector
COORD	coordinative
DAT	dative
DCL	declarative
DEF	definite
DS	different subject
F	feminine
FIN	final
GEN	genitive
LOC	locative
M	masculine
NEG	negative
NOM	nominative
OBJ	object
PAST	past
PF	perfective
PL	plural
POL	polite
POS	possessive
Q	question
REL	relative
SG	singular
SUB	subject
TEMP	temporal

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From Eurocentrism to Sinocentrism: The case of disposal constructions in Sinitic languages

Hilary Chappell

1. Introduction

1.1. The issue

Although China has a long tradition in the compilation of rhyme dictionaries and lexica, it did not develop its own tradition for writing grammars until relatively late.[1] In fact, the majority of early grammars on Chinese dialects, which begin to appear in the 17th century, were written by Europeans in collaboration with native speakers. For example, the *Arte de la lengua Chiõ Chiu* [Grammar of the Chiõ Chiu language] (1620) appears to be one of the earliest grammars of any Sinitic language, representing a koine of urban Southern Min dialects, as spoken at that time (Chappell 2000).[2] It was composed by Melchior de Mançano in Manila to assist the Dominicans' work of proselytizing to the community of Chinese Sangley traders from southern Fujian. Another major grammar, similarly written by a Dominican scholar, Francisco Varo, is the *Arte de le lengua mandarina* [Grammar of the Mandarin language], completed in 1682 while he was living in Funing, and later posthumously published in 1703 in Canton.[3]

Spanish missionaries, particularly the Dominicans, played a significant role in Chinese linguistic history as the first to record the grammar and lexicon of vernaculars, create romanization systems and promote the use of the demotic or specially created dialect characters. This is discussed in more detail in van der Loon (1966, 1967). The model they used was the (at that time) famous Latin grammar of Elio Antonio de Nebrija (1444–1522), *Introductiones Latinae* (1481), and possibly the earliest grammar of a Romance language, *Grammatica de la Lengua Castellana* (1492) by the same scholar, although according to Peyraube (2001), the reprinted version was not available prior to the 18th century. Not surprisingly, the Nebrija gram-

mars were indirectly influenced by even earlier Greek models (for more detailed discussions, see Breitenbach 2001, Mair 1997 and Peyraube 2000, 2001).[4]

Since a Greco–Latin model is one that is evidently designed for highly inflectional languages, it is not surprising to find standard chapters in missionary grammars include the topics of verb conjugations with accompanying abundant description of tenses: the pluperfect preterite, the future, the infinitive and the subjunctive; also declination of nouns and pronouns, including features of case, gender and number. Consequently, information is not always presented economically or concisely. For example, in the 1620 *Arte de la lengua Chiõ Chiu*, complete verb conjugations are given for the verb *lāy* 'to come' in Southern Min for both the present and the perfect, even though the forms remain invariable. The 'paradigm' in (1) presents the typical case in the Sinitic taxon where the description of aspect and resultative phase markers would in fact be more appropriate for verb morphology than tense (see Chappell 1992a):

Table 1. Arte de la lengua Chiõ Chiu [Grammar of the Chiõ Chiu language] (1620: 11)

Spanish romanization	Chiõ Chiu characters	17th century Spanish translation and English
guà lāy	我來	— 'I come'
lu lāy	汝來	*tu bienes* 'you (sg) come'
ý lāy	伊來	*aquel biene* 'that one comes'
guàn lāy	阮來	*nosotros benemos* 'we come'
lŭn lāy	恁來	*vosotro benis* 'you (pl) come'
ín lāy	因來	*aquellos bienen* 'those ones come'

The same situation obtains in Varo's grammar for conjugating the verb *gái* 愛 'to love' [contemporary Mandarin *ài*] in the Nanjing-based Mandarin koine of the late 17th century (translated by Coblin and Levi 2001: 117). Note that Varo explicitly acknowledges Nebrija's grammatical framework in his prologue (page 1a, Coblin and Levi 2001: 5). While Varo does discuss the non-Indo–European category of the classifier in a chapter on numbers and numerals as the category of 'particles', de Mançano relegates these to an appendix at the end of his grammar of Southern Min. Similar

phenomena and chapter layouts can be found in the grammars of Chinese languages written in Latin by Martino Martini, *Grammatica Sinica*, circa 1653, (see Bertolucci 1998: 349–481 for a reproduction) and Theophilus Bayer who presents an edited and revised version of the 1620 *Arte* translated into Latin, and a grammar of literary Chinese (1730). From this it should not be inferred that grammatical analyses from this period are completely inadequate, but rather that there is a distinct mismatch between the structure of the target language and the framework for analysing it. Hence, in this early phase of grammar-writing for Chinese languages, it is reasonable to claim there was little influence of language type on the design of grammars for Chinese languages.[5]

The description of possible accusative marking for direct objects is a case in point.[6] The grammars by de Mançano and Varo both point out that there are no particles for the accusative case in Chiõ Chiu or Mandarin respectively, explaining that these cases can only be recognized by position in the sentence. This is certainly true for basic S–V–O clauses. Varo states that '[T]he accusative … has no particle which governs it. … However, common practice is to put it after the verb' (translation of p. 24 by Coblin and Levi 2001: 63).

Significantly, Varo goes on to make an astute observation regarding a certain usage in this Southern variety of Mandarin which would doubtlessly be labelled a 'serial verb construction' by contemporary linguistic theory. His remark concerns verbs of taking in two related structures containing a preposed object, which he does not however treat as being coded in the accusative case: 'In the verbs "to take" and "to bring" the accusative is anteposed to the verb, e.g., "bring water", *xùi nà lâi* 水拿來; … . If one wants to speak a bit better and more elegantly, one can start the sentence with the *nà* 拿, and then immediately after that put the name of the thing which is to be taken or brought, and finally the verb, e.g., *nà xùi lâi* 拿水來 (Coblin and Levi 2001: 65). Many examples of both kinds of construction, albeit in a more highly grammaticalized stage, will be treated in §§3–8. It is interesting to note that Varo does not mention the use of either *bă* or *jiāng* which were both in evidence in vernacular works during this period of Modern Mandarin. As will be explained below, *jiāng* 將 is the main Medieval Chinese marker of the accusative or 'disposal' function, while *bă*把 – which superseded *jiāng* by the time of Late Medieval Chinese – is the marker used contemporaneously in standard Mandarin and many Northern Mandarin dialects.

It is only much later, when the first indigenous Chinese grammar was published, that the promise of a potentially new tradition begins to emerge: this was the 1898 *Mǎ Shì Wéntōng* [Treatise on grammar by Ma] written by Ma Jianzhong near the end of the last Chinese dynasty, the Qing (1644–1911). It describes literary Chinese, however, and not any vernacular form. It, too, is based on a Greco-Latin model, as the author himself states at various points in the text, while it eclectically adheres to Chinese philological traditions at the same time (details are to be found in Mair 1997, Peyraube 2001). Peyraube (2001) argues that *Mǎ Shì Wéntōng* uses the 17th century *Grammaire de Port-Royal* as its model.[7] Since Classical Chinese is the object of description in his grammar, Ma treats only the use of instrumental *yǐ*, the Archaic Chinese precursor of the construction types discussed in this study. Nonetheless, many aspects of his terminology and framework are innovative, bearing discernible and lasting influence on the directions of contemporary linguistics in China (Peyraube 2000).

The 20th century has since seen an exponential increase in the publication of grammars, particularly on spoken Mandarin Chinese. These are written in mainly structuralist and functionalist frameworks, with the best known of these in English, being undoubtedly Yuen-Ren Chao's *A Grammar of Spoken Chinese* (1968) and Charles Li and Sandra Thompson's *Mandarin Chinese: A Functional Reference Grammar* (1981), among many others. In the Chinese-literate world, Lü (1941), Wang Li (1943) and (1944), Gao (1957) and Zhu (1980) stand out as major *opera inter alia*. Notably, these works treat Mandarin Chinese on its own terms, with special chapters on categories and constructions that are not found in most European languages, such as classifier phrases and clause nominalizations, verb copying, complex stative constructions (verbal complements of extent and manner), double subject and topic prominence structures.

It is a curious paradox that standard Mandarin (*pǔtōnghuà*), in its turn, has become the model of grammar on which descriptions of other Sinitic languages are regularly based, both by Chinese and western scholars.[8] This templatic approach has a similar consequence that key typological features and patterns shared between Southern Sinitic languages such as Cantonese (Yue), Shanghainese (Wu), Hakka (Kejia) and Hokkien (Southern Min) are often overlooked, simply because Mandarin does not possess them. This problem is pointed out severally in Chappell (1992a, 1994, 2000, 2001a, 2001b, 2001c, to appear and in prep.), studies which examine the differences in the functions, types and range of usage for aspect markers, negative adverbs, dative, passive, causative constructions, evidentials, and *say*

verbs *inter alia*.[9] This new Sinocentrism is pointed out in the relevant places in §§3–8. It also becomes clear that, from a linguistic point of view, Mandarin is not always in fact the ideal typological representative for Sinitic languages.

1.2. The disposal constructions in Standard Mandarin

In Sinitic languages, the canonical position for a direct object argument is to follow the transitive verb without any accusative case marking, as de Mançano and Varo rightly observed: Subject – $\text{Verb}_{\text{transitive}}$ – Object; similarly for intransitive verbs when not being used in a presentative function, the subject precedes the verb: Subject – $\text{Verb}_{\text{intransitive}}$. When a direct object argument with the role of affected patient occurs in a non-canonical position preceding the main verb, this is signalled by a special marker preposed to it, for example, *bǎ* in standard Mandarin. Note, however, that preposed direct object arguments are not required by the grammar to take such accusative marking – morphologically unmarked OV constructions are common in Chinese languages, where the direct object noun has given information content (but is not necessarily an affected patient). In a similar fashion, disposal constructions may extend to coding affected patients of intransitive events, but not in all Sinitic languages.

As a consequence of the affectedness feature, the predicate may be required to depict a telic event causing a change of state in the patient noun, as argued in Chappell (1992b) and Sun (1997) *inter alia*. This means that, for Mandarin, the predicate may not comprise a bare monosyllabic verb; and it is generally true that either complex resultative verbs, aspectually marked verbs or postverbal nominals (locatives, copular-like complements of equative and *creation* verbs and indirect objects of ditransitive verbs) are to be found in disposal constructions, for example in standard Mandarin and Hong Kong Cantonese. However, the precise constraints depend on the individual language, since Nanchang Gan, Meixian Hakka and Southern Min are not subject to this constraint in its strictest form.

To serve as a starting point for the discussion, the configuration for the construction type identified in all the Sinitic languages in this survey can be stated in general terms as follows. Note however that a significant part of my description is to show variations on this theme which exist in particular dialect groups:

$(NP_{CAUSE/SUBJECT})$ – [MARKER + $NP_{AFFECTED\ PATIENT}$] – VP[10]

The disposal constructions in Sinitic languages are in fact functional correlates to the well-researched *bǎ* construction in Mandarin, known as the *chùzhìshì* 處置式in Chinese linguistics. In Mandarin, they serve to foreground a referential noun in preverbal position, specifically one which has the semantic role of affected patient, either the direct object argument of a transitive verb, the intransitive subject of an unaccusative verb, or even the subject of an unergative verb, provided this has a reflexive effect, thereby causing a change of state in the undergoer-subject.[11]

(1)	把	我	洗	得	累壞	了
	Bǎ	*wǒ*	*xǐ*	*de*	*lèi-huài*	*le*.
	ABS	1SG	wash	EXT	tired–INTS	PFV

'Because of this, I washed until I was exhausted.'

For this reason, the construction could be labelled 'absolutive', but just in the case of Mandarin. This is by virtue of the morphologically marked argument being a non-agent – it does not act upon any other entity – while the ergative argument is backgrounded.[12] Clause-initial agent NPs may in fact be ellipsed, as example (2) demonstrates from written Mandarin.[13]

Hence, I begin the analysis with examples from the best-known and described of all the Sinitic languages, Standard Mandarin. The purpose is to provide the necessary background information on the state-of-the-art for research into this topic; and importantly to set the scene for highlighting the diversity which is evident in the following descriptions of other Chinese languages. Speakers of Mandarin dialects constitute the largest proportion of all Sinitic languages in China, totalling more than 70% of the Han Chinese population (Chappell 2001a, see also note 15 on standardization).[14]

The first main subtype of the disposal construction in Mandarin is the most common one, where the use of *bǎ* serves to mark a direct object. It can be given the following representation:

I. $(NP_{SUBJECT})$ – [$MARKER_{ACC}$ + $NP_{DIRECT\ OBJECT}$] – $VERB\ PHRASE_{TELIC}$

(2) Standard Mandarin disposal construction with *bǎ*: [15]

往後	天	黑下去	前	就
Wǎng-hòu	*tiān*	*hēi-xiaqu*	*qián*	*jiù*
after: that	sky	dark–INCH	before	then

把 苦根 送回去
bǎ ***Kǔgēn*** ***sòng-huiqu***.
ACC NAME escort-return:go
'After that, before it got dark, (I) would take Kugen home.'
(from novel by Yu 1994: 273)

In this example, a specifiable result state can be interpreted as the change in location for Kugen, achieving his arrival at home. Note that the agent has been ellipsed but is recoverable from the surrounding context. Counterpart S–V–O forms of disposal constructions are not always possible, as in this case: **Wǒ sòng-huiqu Kǔgēn* [1SG–escort–return–NAME].[16] Nonetheless, let us consider the case for the next example of a *bǎ* construction, given in (3), which may be contrasted with a topicalized patient construction of the form O–S–V, in (4).

(3) Standard Mandarin disposal construction with *bǎ*:
$(NP_{SUBJECT})$ – $[bǎ_{ACC}$+ $NP_{DIRECT\ OBJECT}]$ – $VERB\ PHRASE_{TELIC}$
她 把 問題 講 得 很 清楚
Tā *bǎ* *wèntí* *jiǎng* *de* *hěn* *qīngchu*
3SG ACC question talk EXT very clear
'She explained the question very clearly.'

(4) Topicalized patient construction O–S–V in Standard Mandarin:
$(NP_{SUBJECT})$ – $VERB$ – NP_{DO}[– $VERB$ – EXT – $VERB_{RESULT}$]
這個 問題 她 講 得 很 清楚
Zhèige *wèntí* *tā* *jiǎng* *de* *hěn* *qīngchu*
this:CLF question 3SG talk EXT very clear
'She explained the question very clearly.'

Note, however, that when non-*bǎ* correlates are possible, they are not equivalent from either a semantic or discourse point of view, for the features described. For instance, in (4), the direct object is topicalized into clause-initial position which enables preservation of information concerning the manner of explanation (*qīngchu* 'clearly'), a feature more concisely coded by the *bǎ* construction.

As pointed out above, there is a second subtype of the disposal construction in Mandarin which permits an intransitive subject to occur in the same marked position as the direct object. It does not increase the valency of the

verb, however, but has a distinctly causative meaning. In fact, the causing event can be coded in the slot for the erstwhile agent of a transitive clause:[17]

II. ($NP_{CAUSING\ EVENT}$) – [$MARKER_{ABS}$+$NP_{INTRANSITVE\ SUBJECT}$] – $VERB\ PHRASE_{TELIC}$

(5) Standard Mandarin absolutive disposal construction with *bǎ*:

田裏	的	活	已經	把	家真		
Tiān–li	*de*	*huó*	*yǐjīng*	*bǎ*	*Jiā Zhēn*		
field–in	LIG	work	already	ABS	NAME		
累	得	説話		都	沒	力氣	了。
lèi	*de*	*shuō–huà*		*dōu*	*méi*	*lìqi*	*le*.
tired	EXT	talk		all	NEG	strength	CRS

'Working in the fields had already made Jia Zhen so tired that she had no strength to talk.' (from novel by Yu 1994: 126)

The fact that some kind of specifiable result state must be coded particularly in the case of the intransitive variant is clear from the unacceptability of **bǎ tā lèi le* 把她累了[ABS–3SG–tired–CRS] which only expresses a general state of affairs.

Turning now to the non-Mandarin Sinitic languages, the trend in descriptive studies is to look for the cognates of either Mandarin *bǎ* < 'grasp, take' or its precursor *jiāng* < 'lead, guide, take', which serves the same function as *bǎ* but is found mainly in literary genres, for example, written Mandarin Chinese. This is particularly a problem in large dialect surveys which use questionnaires based on translating Mandarin sentences or eliciting equivalent morphemes in the target language, as, for example, in Zhan and Cheung (1988) on Yue dialects or Li and Zhang (1992) on Min dialects. It may also be noted that Southern Min, Cantonese and many Hakka dialects all make use of cognates of the literary marker *jiāng* and thus appear to preserve a more archaic feature of Chinese. Such descriptions usually concentrate on the fact that this construction tends to be more limited in use than in Mandarin.

While this may be true, what such a Mandarin-based Sinocentric approach inadvertently conceals are two other important sources for disposal markers in certain Sinitic languages. While many Sinitic languages use a verb of taking or grasping in this function, but not necessarily one that is cognate with either *jiāng* or *bǎ*, others such as Southern Min, and certain Wu and Hakka dialects, deploy accusative markers that have evolved out of

a comitative. A third group of Chinese languages evinces a pathway from verbs of giving, in particular, Xiang and Wu dialects. Surprisingly, this kind of phenomenon, if mentioned, is treated as an oddity or aside in descriptive grammars, simply because it does not correspond to a model of grammar based on Standard Mandarin. Hence, there is a need for a *tertium comparationis* or truly typological approach in the study of Sinitic languages: empirical data from all major dialect groups within Sinitic must first be compared before setting up an eventual pan-Sinitic description of invariant syntactic and semantic features of accusative constructions. This study represents an initial step in this direction.

There are nonetheless important exceptions to this rule: While specific instances of this Sinocentric, specifically Mandarin-centred, tendency are pointed out in §§3–8 below, this analysis makes use of several recent and excellent studies of accusative constructions in Sinitic languages which do indeed examine the divergences from Mandarin. These include Cheung (1992), Lin (1990), Teng (1982), Cheng and Tsao (1995), Wu (1992), Xu and Tao (1999), and Zhou (1991). The study of diversity is particularly well-developed in research on Southern Min languages – the difference in markers and structure is perhaps too striking to be overlooked, as §3 demonstrates.

In the main part of this study, I first outline the diachrony of *bǎ* and *jiāng* constructions, then present a description of a range of disposal constructions in a further six Sinitic languages, according to two main parameters: (i) the source of the case marker and (ii) the construction type in terms of its configuration; also (iii) semantic and syntactic constraints, where known. All three parameters are shown to differ across Sinitic languages. Not only do the markers have different etymological sources, but the construction types include those with postverbal resumptive pronouns, those which require a possessive NP in the accusative NP slot, and yet others which permit the accusative NP to occur in clause-initial position.

The six non-Mandarin languages are Southern Min, Hakka, Cantonese, Shanghainese, Xiang and Gan in that order. These constitute the linguistically best-established groups within the Sinitic branch of Sino-Tibetan; another three – Hui, Jin and Pinghua – are less well-studied at this point of time (see Chappell 2001a). This enables a final intra-Sinitic grouping of accusative constructions according to the first two typological parameters.

The terms ‘subject’, ‘agent’, ‘direct object’, ‘indirect object’, ‘argument’, ‘case’, ‘ergative’, ‘accusative’ and ‘absolutive marker’ are used as syntactic terms (Dixon 1979, 1991) whereas ‘affected patient’ refers to the

semantic role of the accusatively marked NP. Whenever the label 'Mandarin' is used, it refers to Standard Mandarin or *pǔtōnghuà*, unless otherwise indicated. For the main discussion, including the next section on diachrony, I use the terms 'disposal construction' and 'accusative marker' given that the use of the construction with intransitive predicates is not well-researched at the present time with regard to most of the other Sinitic languages. Significantly, preliminary indications point to their use being restricted to transitive verbs in some languages, such as in Cantonese (see §5 below) and Hakka (§4). Furthermore, the absolutive function in Mandarin itself did not develop prior to the Modern period, post-13th century (Alain Peyraube, pers. comm.).

2. Diachrony of disposal constructions

It is well-known that *jiāng* 將 is the most frequent exponent of the disposal construction at the end of the Early Medieval period, specifically, during the Sui dynasty (6th c. CE) but that it lost this position of pre-eminence to the *bǎ* 把construction during the Tang dynasty (618–907 CE), most likely between the 7th – 8th centuries (Peyraube 1985, 1994). The marker *jiāng* itself had similarly developed by analogy with the instrumental *yǐ* construction dating back to the period of Late Archaic Chinese (5th – 2nd centuries BCE) (see Peyraube 1996, Sun 1996: ch. 3).[18]

The disposal markers seen in vernacular texts of the Medieval Chinese period are typically deverbal prepositions (or 'coverbs') that evolve out of the V_1 position in serial verb constructions of the form: ($NP_0[_{SUBJECT}]$) – $\mathbf{V_1}[_{take}]$ – $NP_1[_{DO}]$ – V_2 – $NP_2[_{DO}]$ to first indicate instrumental then finally accusative functions. These include *jiāng* 將'to guide, lead', *bǎ* 把 'to grasp, hold', *chí* 持 'to grasp, hold', and *zhuō*捉 'to clutch, hold, seize'. The degree of grammaticalization of these verbs into case markers can be tested with aspect marking: *bǎ* in Mandarin and *jeung*^{1} in Cantonese do not take any aspect suffixes in their contemporary use. That is, they are no longer used as verbs, whereas disposal markers in other Sinitic languages can be, for example, *lau*^{11} which can still be used as a verb meaning 'to mix together' in Hakka (see example (21) below). Construction types with similar sources and evolution pathways can be found in many Southeast Asian languages, as detailed in Bisang (1992).

Each of these stages of grammaticalization for Medieval Chinese is exemplified with a lexical postverbal $NP_2[_{DO}]$, a pronominal one, and finally a

case where there is no $NP_2[_{DO}]$ (all examples are taken from Peyraube 1985, 1996):

(6) Medieval Chinese instrumental construction with *jiāng*:

$(NP_0[_{SUBJECT}])$ – **V_1**$[jiāng$ 將$]$ – $NP_1[_{DO}]$ – V_2 – $NP_2[_{DO}]$

輕	將	玉版	橋	花片
Qīng	*jiāng*	*yùbǎn*	*qiáo*	***huāpiàn***
lightly	take$_{ACC}$	jade:piece	hit	flower:petal

'(She) lightly hits the flower petals with a piece of jade.'
[Zhang You: Gongzi Xing張祐：公子行]

(7) Medieval Chinese accusative construction with *jiāng* and a resumptive postverbal pronoun as $NP_2[_{DO}]$

$(NP_0[_{SUBJECT}])$ – **V_1**$[jiāng$ 將$]$ – $NP_1[_{DO}]$ – V_2 – $NP_2[_{DO}]$
where $O_1 = O_{2\,[pronoun]}$

船者	乃	將	此	蟾	以		
Chuán–zhě		*nǎi*	*jiāng*		*cǐ*	*chán*	*yǐ*
boat-AGT		then	take$_{ACC}$		this	toad	with
油	熬	之					
yóu	*āo*	***zhī***					
oil	fry	3SG					

'Then the boatman took the toad and fried it.' [Lu Xun: Zhi Guai陸 勛 志怪]

According to Peyraube (1996: 169–170), after $NP_2[_{DO}]$ is omitted under coreferentiality conditions with $NP_1[_{DO}]$, V_1 grammaticalized into a preposition. Although it is very difficult to detect precisely when this syntactic reanalysis occurred, the following kind of example shows that semantically *jiāng* is being used more like an accusative marker than a verb of taking:

(8) Medieval Chinese accusative construction with *jiāng* and no postverbal $NP_2[_{DO}]$:

$(NP_0[_{SUBJECT}])$ – **Prep**$[jiāng$ 將$]$ – $NP_1[_{DO}]$ – V_2

誰	將	此	義	陳
shéi	*jiāng*	*cǐ*	*yì*	*chén*
who	ACC	this	idea	expose

'Who could express this idea?'

(Dufu: Ji Li Shi'er bai 杜甫： 寄李十二白, 8th century)

The use of both markers, *jiāng* and *bǎ*, continued throughout the Early Mandarin period. In contemporary Mandarin, however, *jiāng* is no longer a feature of the colloquial language but may still be found in literary genres. In the following sections, I will show that at least two of the Sinitic languages, Hakka and Cantonese, also permit postverbal pronominal objects, similar to the structure in (7). This appears to be clearly related to the structure found in these vernacular works of Late Medieval Chinese, and thus a retention which standard Mandarin no longer permits, as shown in the grammatically unacceptable use of a third person pronoun *(*tā)* in postverbal position: *Yúshi chuánf jiù bǎ zhè zhī chánchú yòng yóu jiān le (*tā)* 於是船夫就把這隻蟾蜍用油煎了（*它）thereupon–boatman–then–ACC–this–CLF–toad–use–oil–fry–PFV–(*3SG).

3. Southern Min

The archaic Min dialect group has its heartland in China's southeastern province of Fujian and includes a large community of Southern Min speakers in neighbouring Taiwan, not to mention outliers in northeastern Guangdong (Chaozhou, Shantou), the Leizhou peninsula and Hainan island. Min dialect speakers comprise approximately 4.1% of Sinitic languages, with 2.8% belonging to Southern Min.

The morpheme *kāng* ~ *kā* in Taiwanese Southern Min has a function similar to the Mandarin *bǎ* construction where it marks a preverbal and typically referential direct object, though its usage appears to be broader than in Mandarin, in terms of co-occurring verb classes (see Teng 1982, Tsao 1991, Cheng and Tsao 1995). Although most contemporary descriptions of Southern Min describe one use of *kā* or *kāng* as a marker of a preposed direct object, it occurs under different circumstances to the Mandarin correlate *bǎ* and is consequently not viewed as the true 'dialectal' counterpart. This role is rather taken on by a cognate of *jiāng*, as in Yuan (1960: 285). Two examples of *kā* follow from my transcription data on the Taiwanese variety of Southern Min.

(9) Taiwanese Southern Min accusative construction with *kā*:

($NP_{SUBJECT}$) – [$K\bar{A}_{ACC}$ + NP_{DO}] – VERB PHRASE

所以	阮	攏	共	褲	褪 起來
só - í	*gún*	*lóng*	*kā*	*k'ò*	*t'ǹg – k'í–lâi*
therefore	1PL	all	ACC	trousers	take:off-DIR

'So we all took our trousers off (to go swimming).'
(Jesse's Story: 116)

(10) Taiwanese Southern Min accusative construction with *kā*:

($NP_{SUBJECT}$) – [$K\bar{A}_{ACC}$ + NP_{DO}] – VERB PHRASE

啊	汝	共	汝	的	氣力	攏
a	*lì*	*kā*	*lì*	*ê*	*khuì-lat*	*lóng*
PRT	2SG	ACC	2SG	GEN	strength	all

用去	啊
iòng-khì	*a*
use-DIR	PRT

'You used up all your strength.' (Jesse's Story: 823)

In Chappell (2000), I trace *kā* back to Medieval Chinese *gòng* [**gjowŋH*], a marker of the comitative that evolved from an earlier verb in Archaic Chinese meaning 'to gather, to share', and show that it has further grammaticalized into this function of an accusative (Chappell 2000). [19]

Southern Min is a highly stratified language, with at least three historical layers involved in its formation, two colloquial and one literary, the latter being comprised of borrowings from the Tang dynasty (see Mei and Yang 1995). In many Southern Min dialects, a cognate of the Medieval Tang dynasty form of the disposal marker *jiāng* 將is used [romanized as *chiong* in the Church romanization system] alongside *kā*, producing a hybrid form with colloquial *kā*, exemplified by (12). This construction type, exemplified for Taiwanese, differs markedly from the Mandarin type described in §1.2.[20] Note that the use of *chiong* belongs however to a somewhat more formal register, according to Tsao (1991: 383).

(11) Taiwanese Southern Min hybrid form with two accusative markers:
$(NP_{SUBJECT})$ – $[CHIONG_{ACC}$ + $NP_{DO(i)}]$ – $[K\bar{A}_{ACC}$ + $PRONOUN_{DO(i)}]$ – VP

將	門	共	伊	關	起來
chiong	*mn̂g*	*kā*	*yī*	*kui*^{n}	*khì–lâi*
ACC_1	door	ACC_2	3SG	close	INCH

'Close the door.'
[more literally: take the door, take it and close]

Fusion and contraction of *kā* with its following 3SG resumptive pronoun regularly occurs in Taiwanese: *kā yī* > *kah* [= *kaʔ*^{32}], but not for any other pronominal form (Teng 1982: 337). Furthermore, both fused and unfused forms of *kā* can be used in a variation on this construction type in (12), where the patient noun is in clause-initial position. The example in (12) from a spoken narrative has been selected for its similarity to (11):

(12) Taiwanese Southern Min accusative *kah* construction with a clause-initial object:
$NP_{OBJECT(i)}$ – $[KAH_{ACC}$ + $NP_{DO}]$ – VP

門	共	關	關	起來	啊
mn̂g	*kah*	*kui*^{n}	*–kui*^{n}	*khì–lâi*	*a*
door	ACC:3SG	close	– close	INCH	PRT

'(we) closed, closed the door.' (Jesse's story 543)

This particular construction type is neither standard nor regular for Mandarin which, in any case, avoids the use of 3SG pronoun for inanimates. While the translation in (13) is not impossible, (14) presents the preferred form.[21]

(13) Standard Mandarin:

? 門	把	它	關起來
?Mén	*bǎ*	*tā*	*guān–qilai*.
door	ACC	3SG	close–INCH

?'As for the door, close it.

(14) Standard Mandarin absolutive construction with *bǎ*:
($NP_{SUBJECT}$) – [$MARKER_{ACC}$ + $NP_{DIRECT\ OBJECT}$] – $VERB\ PHRASE_{TELIC}$
把 門 關起來
Bǎ *mén* *guān–qilai*.
ACC door close–INCH
'Close the door.'

Yuan (1960: 286) reports that this construction type with a clause-initial object is also found in the Xiamen, Chaozhou, Hainan and Southern Zhejiang dialects of Southern Min. Ying and Tsao (1995) claim that the portmanteau form in (12) shows a further development in Taiwanese whereby *kah* is undergoing reanalysis as a passive prefix. This is aided by the fact that *kah* and *kā* are virtually indistinguishable in fluent speech, both being articulated without syllable closure and low falling tone in unstressed position: *kà*. This construction type also exists in certain Wu dialects (see §6).

4. Hakka

Hakka is concentrated in an area which straddles Northeastern Guangdong, Southern Jiangxi and Southwestern Fujian provinces. Nonetheless, communities are scattered throughout Guangdong province, inhabiting Yue or Cantonese territory, as well as being found in Sichuan province. The estimated number of speakers is circa 3.7% with Meixian or Sixian Hakka generally being considered the representative variety. This refers to a locality within Northeastern Guangdong province (see Chappell and Sagart in press). With regard to disposal markers, three main points of view are in evidence according to the main reference grammars of Hakka: (i) Hakka does not have a disposal construction *in stricto sensu* due to the fact a marker distinct from Mandarin *bǎ* is used (He 1993: 26 on Dabu Hakka *tet*); (ii) only the cognates of *jiāng* are identified (Yuan 1960: 176; Luo 1985: 300; Rey 1926: III) with the non-colloquial nature and lack of 'linguistic development' of this construction, compared to Mandarin, being alluded to, as in Xiang (1997: 421); or (iii) the accusative case is claimed to be never marked (translation of (1909) Basel grammar of Sin-on Hakka, in Part 3, Chappell and Lamarre 2005: 59).

In contradistinction to these studies, I first illustrate some disposal constructions with the exponent *tsiong*^{44} in Hakka (cognate with Mandarin

jiāng), and second, a variant form with a resumptive pronoun. Finally, I examine two spectacular cases of disposal markers in Hakka which show quite distinct sources from Mandarin and most other Sinitic languages, excepting Wu.

In Hakka dialects, the use of cognates of Medieval Chinese *jiāng* 'guide, lead' is widespread, according to published descriptions. However, two construction subtypes can be identified: one is similar in form to Mandarin, while the other is distinct due to the presence of a postverbal resumptive pronoun.

Subtype (i): Two examples follow, the first one from a story told in a southern variety of Guangdong Hakka from Sung Him Tong near Hong Kong. Both are of the same construction type as in Mandarin. Hence, it is only the use of the marker *jiāng* which differs.

(15) Sung Him Tong Hakka disposal construction with *tsjiong*[1]:
($NP_{SUBJECT}$) – [*TSJIONG*[1] $_{ACC}$ + $NP_{DIRECT\ OBJECT}$] – VERB PHRASE

卒	之	就	將	口	隻	鷂	崽
tsut[5]*–tsji*[1],		*tsj'iu*[4]	*tsjiong*[1]	*ngjia*[3]	*tsak*[5]	*tsjiau*[2]*–tsai*[3]	
in:the:end		then	ACC	that	CLF	child–DSIMN	

救開	口
kjiu[4]*–hoi*[1]	*lɔ*.
save–PFV	PRT

'(Sima Guang) saved the child.' (Sagart 1982: 21)

Similar examples are easy to find in the Meixian, or the northeastern variety of Hakka.[22]

(16) Meixian Hakka disposal construction with *tsiong*[44]**:**
($NP_{SUBJECT}$) – [*TSIONG*[44] $_{ACC}$ + $NP_{DIRECT\ OBJECT}$] – VERB PHRASE

苗公	將	煎魚仔	食撇 哩
miau[52]*kung*[44]	*tsiong*[44]	*tsien*[44]*ng*[11]*nge*[31]	*set*[5]*–pet*[1]*te*[11]
cat	ACC	fried fish	eat–COMP–PRT

'The cat ate up all the fried fish.' (Xie 1994: 303)

Subtype (ii): However, in Hakka dialects, a trace of the earlier serial verb construction of Medieval Chinese can be found, as exemplified by (7) above: SUBJECT – V_1[take] – O_1 – V_2 – O_2. Rey (1926: III) gives an example of a resumptive third person singular pronoun being used with the disposal marker in the Jiayingzhou variety of Northeastern Hakka, the dialect

represented in his dictionary. Note that 'Jiayingzhou' is in fact an older obsolete name for Meixian Hakka.

(17) Northeastern Hakka: Jiayingzhou or Meixian Hakka
$(NP_{SUBJECT})$ – [*TSIONG* $_{ACC}$ + $NP_{DIRECT\ OBJECT(i)}$] $VERB_1$–($VERB_2$)–$PRONOUN_{(i)}$

將	裡隻	雞	拿來	食帛	佢
tsiōng	*lì tchâc*	*kē*	*nā–loî*	*chǐt–p'êt*	***kî***
ACC	this–CLF	chicken	bring	eat–COMP	**3SG**

De cette poule, n'en laissez rien.
['Eat up all this chicken.']

Apart from the use of the marker *tsiong*[44], several Hakka dialects make use of disposal markers which are distinct from either Mandarin *bǎ* or *jiāng*. The use of a different exponent for this function in the Dabu dialect of Hakka makes an interesting case, particularly given that it lies in geographic proximity to the prestige dialect of Meixian. Instead of using the widespread marker *tsiong*[44], Dabu employs *tet* 得 < 'to gain, to give'. Another distinction is the requirement of a possessive NP as the patient following the marker *tet*, as described by He (1993: 73–74), exemplified in (18):

(18) Dabu Hakka construction with *tet* and a possessive object**:**
$(NP_{SUBJECT})$ – [*TET* $_{ACC}$ + POSSESSIVE NP_{DO}] – $VERB_1$–($VERB_2$)

佢	得	口	碗	打爛
kî	*tet*	*nga*	*vón*	*tá–làn*
3SG	ACC	1GEN	bowl	break:into:pieces

'S/he broke my bowl.'

One of the comitative prepositions in Hakka dialects is *t'ung*[11] 'with, and' (< 'to accompany').[23] It also has a benefactive use but, strikingly, can be employed in Meixian Hakka in the same way as *tsiong*[44] in accusative function. Similarly to the case in Dabu Hakka, Lin (1997: 103) observes that the disposal noun phrase governed by *t'ung*[11] must be possessive. This is not the case, however, for the benefactive use in (19).

(19) Meixian Hakka – Benefactive use of *t'ung*^{11}
($NP_{SUBJECT}$) – [*T'UNG*^{11}+BENEFACTIVE NP] –$VERB_1$– ($VERB_2$)

你	同	我	寫	一	張	單
gnî	*t'oûng*	*ngaî*	*sià*	*ŷt*	*tchōng*	*tān*
2SG	BEN	1SG	write	one	CLF	list

'écris–moi une liste' ['Write a list for me.'] (Rey 1926: 1131)

(20) Meixian Hakka – Accusative use of *t'ung*^{11}
($NP_{SUBJECT}$) – [*T'UNG*^{11}+POSSESSIVE NP_{OBJECT}] –$VERB_1$– ($VERB_2$)

thìn–chhȯk	*òi*	*thûng*	*a-shuk*	*kài*	*vuk*
定著	愛	同	阿叔	個	屋
certainly	want	ACC	uncle	GEN	house

tsò–háu–lôi
做好來
make-COMP-come
'You certainly have to finish building uncle's house.'

Y. Lin (1990) provides further data on Hakka dialects, showing that not only may *t'ung*^{11} be used as an disposal marker, but also another comitative, *lau*^{11} 'and, with' (< 'to mix together'), found in most varieties of Hakka (e.g. see the Basel mission grammar of Sin-on or southern Guangdong Hakka, translated in Part 3, Chappell and Lamarre 2005: 60). Note that the construction with *lau*^{11} is structurally isomorphic to the Mandarin; it is merely the etymology of the markers which differs.

(21) Meixian Hakka – Comitative use of *lau*^{11}
NP – [*LAU*^{11}+COMITATIVE NP] –$VERB_1$– ($VERB_2$)

糯米酒	拹	葡萄酒	拹	唔	合
nó mì tsioù	*laō*	*p'oû t'aô tsioù*	*laō*	*mĝ*	*kâp*
rice:wine	COM	grape:wine	mix	NEG	together

'le vin de riz mêlé au vin de raisin n'est pas bon'
['Rice wine and grape wine don't mix well together.']
(Rey 1926: 479)

(22) Meixian Hakka – Accusative use of *lau*^{11}
($NP_{SUBJECT}$) – [$LAU^{11}{}_{ACC}$ + $NP_{DIRECT\ OBJECT}$] – $VERB_1$ – ($VERB_2$)

唔愛	拹	蟻	踏死	了）
m.òi	*lau*	*ngè (nyè)*	*thàp–sí*	*liáu*
NEG:IMP	ACC	ant	tread-die	finish

'Do not walk so as to kill all the ants – do hurry up!' (MacIver 1991: 441)

(23) Meixian Hakka – Accusative use of *lau*[11]

我	捞	屋	買	到	（了）
ngaî	*lau*	*vuk*	*mai*	*tò*	*le*
1SG	ACC	house	buy	COMP	CRS

'I (successfully) bought the house.' Lin (1990: 79)

Unlike the disposal use of comitative *t'ung*[11], the construction with *lau*[11] is not subject to the constraint requiring a possessive NP to follow the disposal marker. This is evident in the previous two examples with inanimate NPs 'ants' and 'house'. In particular, 'house' is not to be understood as owned by the agent until the purchase is completed. This furnishes another tantalizing difference from Standard Mandarin which does not permit 'inward' verbs of receiving in the *bǎ* construction. This could be due to the trace semantic features of *bǎ*, originally a verb that denotes coming into possession of an entity by grasping hold of it (see Ziegeler 2000 for a discussion of possession schemata and Mandarin *bǎ*). This has grammaticalized at the discourse level into the requirement for the givenness or 'preexistence' of the object.

This cursory look at Hakka dialects has identified (i) a construction using the cognate of Medieval *jiāng* which has a subtype with a resumptive pronoun; (ii) constructions with *tet* 'obtain, get' in Dabu and comitative *t'ung*[11] in Meixian which both require a possessive object NP and (iii) a construction with comitative *lau*[11], also found in Meixian, which is less constrained in application than Mandarin *bǎ* in permitting a wider range of verb classes. This description of Hakka disposal constructions has shown that reference grammars particularly overlook the comitative source as an important native strategy for building disposal constructions.

5. Cantonese Yue

The Yue dialects, of which Cantonese is the best known, are distributed throughout Guangdong province and parts of adjacent Guangxi. Speakers of these dialects comprise approximately 5% of the Han Chinese population. Hong Kong Cantonese, like many Hakka and Min dialects, makes use of *jeung*[1], cognate with *jiāng*, to code accusative case. This construction

type is nonetheless generally overlooked in the major grammars of Cantonese, or treated as a gap in the grammar when compared with Mandarin (Li 2001: 33 on *fehlende bǎ-Konstruktion*).[24] The explanation for this may lie in the fact that its use is much more restricted than Mandarin *bǎ*, according to Cheung (1992), who provides a detailed study of *jeung*[1].

In a survey of the lexicon, including grammatical function words in 25 Pearl River Cantonese dialects (Zhan and Cheung 1988: 441), the findings reveal that 23 use a cognate of *jiāng*. The issue at stake here is the problem of posing the question in terms of how the speaker would translate a Mandarin *bǎ* sentence, which tends to elicit the closest correlate in the given Cantonese dialect to written or formal Mandarin *jiāng*, rather than to any local forms.

Treating the construction with *jeung*[1] first, Cantonese does not have the extended intransitive use exemplified by (5) above with an unaccusative verb *lèi* 'be tired', nor with unergative verbs as in (1) above with *xǐ* 'wash' or (25) below. Compare the Cantonese example with its Mandarin counterpart in (24) and (25) respectively (data taken from Cheung 1992, his romanization and translations). This corresponds to where the absolutive NP is both the intransitive subject and agent of *xiào* 'laugh', yet ends up being the affected patient whose belly aches due to the reflexivity of the event (briefly described in §1.2, but presented in detail in Chappell 1992b).

(24) Hong Kong Cantonese accusative construction with *jēung*:
($NP_{SUBJECT}$) – [$JEUNG_{ACC}$ + $NP_{DIRECT\ OBJECT}$] – $VERB_1$ – ($VERB_2$)

*哩個	故事	將	我	笑	到	肚
*Nīgo	gujái	jēung	ngóh	siu	dou	tóuh
this–CLF	story	ABS	1SG	laugh	EXT	belly

都	痛	咧
dōu	tung	le.
all	hurt	PRT

(25) Mandarin disposal construction with *bǎ*:
($NP_{CAUSING\ EVENT}$) – [*bǎ*+ NP_S] – $VERB\ PHRASE_{TELIC}$

這	故事	把	我	笑	得	肚子	都
Zhè	gùshi	bǎ	wǒ	xiào	de	dùzi	dōu
this	story	ABS	1SG	laugh	EXT	belly	all

疼　了
téng　*le*
hurt　PFV
'This story made me laugh so much that my belly ached.'

Second, the *jeung*[1] construction is obligatory with certain kinds of verbs, namely, many ditransitives and verbs which take the bound complement *sihng* 'become' in equative or copular-like clauses (Cheung 1992: 254–260). In other words, these are predicates which could result in the dispreferred situation of two object nouns postverbally: $V_1 – O_1 – O_2$, as in a regular S–V–O type clause. Hence, the preference is to express them with accusative *jeung*[1] as *jeung*[1] $– O_1 – V_2 – O_2$.

(26) Hong Kong Cantonese accusative construction with *jēung* and a postverbal complement noun**:**

$(NP_{SUBJECT}) – [JEUNG_{ACC} + NP_{DIRECT\ OBJECT(i)}]\ VERB_1–(VERB_2) – NOUN_{(ii)}$

將	你	打扮	成	一個	伯爺婆
Jēung	*néih*	*dábaahn–**sihng***		*yāt–go*	*baakyēpó*
ACC	2SG	dress:up–become		one–CLF	old:lady

'Dress you up like an old lady.'

Third, Cantonese, like certain Hakka dialects, allows a postverbal resumptive pronoun, always 3rd person singular in form: *kéuih*. This is particularly a feature of colloquial speech, according to Li (2001: 33).

(27) Hong Kong Cantonese accusative construction with *jēung* and a postverbal pronoun**:**

$(NP_{SUBJECT}) – [JEUNG_{ACC} + NP_{DIRECT\ OBJECT(i)}]\ VERB_1–(VERB_2)–PRONOUN_{(i)}$

千祈	唔好	將	D	頭髮
Chìnkèih	*mh.hóu*	*jēung*	*dī*	*tàuhfaat*
be:sure	NEG:IMP	ACC	CLF_{PL}	hair
染黑	**佢**			
yíhm–hāk	***kéuih***			
dye–black	**3SG**			

'Be sure not to dye your hair black.'

Once again, the observation can be made that this resembles the construction type with two coreferential objects found in Medieval Chinese (see

example (7) above), suggesting that Cantonese, like Hakka, preserves structural features of earlier forms of the disposal construction whereas Mandarin has innovated, namely, by suppressing coreferential postverbal pronouns.

In my own data, I found that although *jeung*[1] predominated, other *take* verbs such as *ling*[1] and *loh*[2] could be used in this function, albeit arguably retaining their more literal meaning of 'take'. The marker *jeung*[1], for example, may occur with predicates such as 'to fool someone' whereas there is no evidence that these two other *take* verbs can. They form a serial verb construction rather than a conflated grammaticalized form as with *jeung jeung*[1]. Matthews and Yip (1994: 142–145) discuss similar constructions, comparing them with the use of *jeung*[1]. The following examples are thus of *ling*[1] and *loh*[2] in serial verb constructions (see also §8 on Gan dialects for similar phenomena):

(28) Cantonese serial verb construction with *ling*[1] 'take'**:**
($NP_{SUBJECT}$) –*LING*[1]–NP_{DO}–$VERB_1$–X–$VERB_2$–NP_{IO}

16. … 嗰 有 個 書生 呢 就 拎 一個 琴
… *gam*[2] *yau*[5] *goh*[3] *sue*[1]*sang*[1] *le*[1] *jau*[6] ***ling*[1]** *yat*[1]*goh*[3] *kam*[4],
so haveCL scholar P_{TOP} then **take** one:CL lute

17. … 出來 嘅
… *chut*[1]*-lei*[4] *ge*[3] .
out-come GE_{ASST}

18. 就 係 還返 俾 哩個
jau[6] *hai*[6] *waan*[4]*-faan*[1] *bei*[2] *li*[1]/ *lei*[5][0] /*goh*[3]
then be give:back-return give this:CL

女仔 嘅。
lui[5]*jai*[2] *ge*[3] .
girl GE_{ASST}

'Then a scholar came with a lute to return it to this girl.' (Tale of the Reborn Lady of the Red Flowering Plum)

(29) Cantonese serial verb construction with *loh*^{2} 'take'**:**
($NP_{SUBJECT}$) –*LOH*^{2}–NP_{DO}–$VERB_1$–X–$VERB_2$–NP_{DO}

720. ... 就 要 羅 個 斧頭 來=,
... *jau*^{6} *yiu*^{3} ***loh*^{2}** *goh*^{3} *foo*^{2}*tau*^{4*} *lei*^{4}
then about:to **take** CL axe $COME_{PURP}$

劈 開 哩個 =,
pek^{3}*-hoi*^{1} *lei*$^{5^{\circ}}$*goh*^{3} =,
split-open this:CL

721. ... 哩個 幕 --
... *lei*$^{5^{\circ}}$*goh*^{3} *mo*^{6} --
this:CL grave

'(He) was about to take his axe and split open the doors of the tomb.' [Balcony Rendezvous]

Finally, according to Cheung (1992), *jeung*^{1} is more likely to appear in formal contexts for Cantonese. This is similar to the situations in both Hakka and Min dialects for the relevant cognate.

6. Shanghainese Wu

The Wu dialects, comprising approximately 8% of Chinese speakers, are spread over most of Zhejiang province on the eastern seaboard of China as well as in southern Jiangsu, the neighbouring province to the north. Shanghainese is nowadays the prestige and probably best-known dialect of this group. While Shanghainese reveals no surprises as to the source of its disposal marker, other dialects such as Shaoxing make use of a comitative, while still others use verbs of helping and giving. Yuan (1960: 101) similarly describes the use of a verb of taking as a disposal marker in the former prestige dialect of Suzhou.

In Shanghainese, the marker for the disposal construction is derived from a verb of taking *nɔ*^{53}拿, that is, from the same semantic domain as for Mandarin *bǎ* 把.

(30) Shanghainese accusative construction with $n\mathfrak{o}^{53}$**:**

($NP_{SUBJECT}$) – [$n\mathfrak{o}^{53}$		+ $NP_{DIRECT\ OBJECT}$] – $VERB_1$ –			($VERB_2$)
儂	拿	鈔票	還	拔	伊
$no\eta^{42}$	$n\mathfrak{o}^{53}$	$ts^h\mathfrak{o}^{34}\ p^h i\mathfrak{o}^{34}$	$\hbar u\varepsilon^{23}$	$p\partial ʔ^5$	$\hbar i^{23}$
2SG	ACC	money	return	give	3SG

'You give back the money to him.' (N.B. All data in this section are taken from Xu and Tao 1999.)

Qian (1997: 287) claims, however, that topicalized preverbal objects are more frequent than the use of the disposal construction with $n\varepsilon^{53}$~ $n\mathfrak{o}^{53}$拿. The use of other syntactic means for highlighting an object–NP is a common claim found in studies on Chinese dialects, as noted in grammars for Gan, Cantonese, and Hakka. This generally results, however, in the disposal construction not being analysed in depth, since it is viewed as less frequent than, if not dispreferred to structures with unmarked preposed objects. Consequently, the possibility of other kinds of 'local' strategies, such as the deployment of a comitative in accusative function, are similarly overlooked.

In many other Wu dialects including Shaoxing, Zeguo and Wenzhou another kind of disposal construction can be found: this is the type in which a resumptive pronoun is used after the disposal marker when the direct object occurs in clause-initial slot. This particular configuration is isomorphic with that of Southern Min, discussed in §3.

(31) Wenzhou dialect accusative dei^{11} construction with a clause-initial object: $NP_{OBJECT(i)}$ – [DEI^{11}+$PRONOUN_{OBJECT(i)}$] – VP

蘋果	代	渠	吃	交
$be\eta^{31}ku^{35}$	dei^{11}	gei^{31}	$ts^h\imath^{313}$	$\hbar u\mathfrak{o}^{o}$
apple	ACC	3SG	eat	PRT

'Eat up the apple!' [more literally: apple, take it and eat it]

Xu and Tao (1999) also note that the source for disposal markers in Wu dialects is not restricted to verbs of taking. Apart from Shanghai, Suzhou and areas to the north of the Qiantang River, which use a variety of 'take' verbs, two other main semantic domains are in evidence: comitatives in the Taihu subgroup, and verbs of giving and helping elsewhere, for example, Wenzhou dei^{11} (see example (32) above). The latter domain is in fact the most widespread source in Wu dialects (Xu and Tao (1999: 137) while it is

an equally typical source in the Xiang dialects, as described in §7 below. The following examples show the syncretism of the comitative and the disposal marker in the Shaoxing dialect: *tseʔ*^{45} 則.

(32) Shaoxing dialect – Comitative use of *tseʔ*^{45} 則

$NP_{SUBJECT}$ – [*TSEʔ*^{45}+COMITATIVE NP] –$VERB_1$– ($VERB_2$)					
我	則	偌	一堆	生	去
ŋo^{13}	*tseʔ*^{45}	*noʔ*^{12}	*ieʔ*^{5} *te*^{5}	*saŋ*^{53}	*tɕʰi*^{33}
1SG	COM	2SG	together		go

'I'll go with you.' (Xu and Tao 1997: 139)

(33) Shaoxing dialect – Accusative use of *tseʔ*^{45} 則

NP_{DO} – $NP_{SUBJECT}$ – [*TSEʔ*$^{45}{}_{ACC}$ + $NP_{POSSESSIVE}$] – $VERB_1$ – ($VERB_2$)						
東西	渠	則	我	捻	破	哉
toŋ^{53}*ɕi*^{53}	*ɦi*^{13}	*tseʔ*^{45}	*ŋo*^{13}	*ȵie*^{n13}	*pʰa*^{33}	*dzeᵒ*
thing	3SG	ACC	1SG:GEN	do	broken-PRT	

'S/he broke my things.' (Xu and Tao 1997: 139)

Note that if an inanimate object NP is preposed into clause-initial position, a resumptive pronoun in possessive form appears after the disposal marker, as in (33). Additional evidence for the comitative source comes from Huang et al (1996: 525–529, no transcriptions provided) who report that the Huaiyin and Shuyang dialects in Jiangsu province, both Jiang-Huai Mandarin dialects, make use of another comitative marker 跟 GEN 'to follow' in the function of accusative.[25]

7. Xiang dialects

The Xiang dialects, comprising 4.8% of Sinitic languages, are distributed over most of Hunan, except in the north and the northwest and some southern parts of this province where Southwestern Mandarin is spoken. Little has been written on their grammar apart from Wu (1999) who presents a large scale study of passive and disposal constructions in Hunan involving 107 localities, where dialects of several different Sinitic languages are spoken (mainly Xiang, Gan, Hakka and Mandarin). In the case of Xiang dialects, she claims that the predominant pattern is for both passive and disposal markers to derive from verbs of giving, but, importantly, verbs with

distinct etymologies. Note that in Sinitic languages, the passive marker introduces the agent NP which means that these dialects have markers from the same lexical source with semantically contrastive functions: agent versus undergoer.

This contrasts with Southwestern Mandarin, also spoken in Hunan, which opposes a disposal marker whose source is a verb of giving to a passive marker whose source is a verb 'to suffer'. In Standard Mandarin, the passive markers also have their sources in verbs meaning 'to suffer', if not in causative verbs, but the disposal marker is not related to a verb of giving (rather, as we have seen, it comes from a verb of grasping, *bǎ*). Two such fossilized verbs used as passive markers in Mandarin are *bèi* 被 < 'put on the body'–> 'cover'–> 'suffer'–> PASSIVE MARKER and *ái*挨 'be next to' –> 'endure' –> 'suffer'–> PASSIVE MARKER. The historical development of the *bèi* passive is the subject of Peyraube (1989a) and Sun (1996), while synchronic constructional semantics are treated in Chappell (1986, in prep.).

It may thus appear at first contradictory to find that the disposal marker in more than half of the localities that Wu investigated is derived historically from verbs cognate with Mandarin *bǎ*. The striking difference is that in Hunan this verb has extended its meaning from 'to hold, grasp, take' to that of 'to give', as in the Changsha dialect of New Xiang, where the form of the disposal construction is otherwise deceptively the same as for Standard Mandarin (data from Wu 1999: 95):

(34) Changsha dialect of Xiang – Verbal use of pa^{41}meaning 'to give':
($NP_{SUBJECT}$) – PA^{41}– NOUN PHRASE$_{INDIRECT\ OBJECT}$ – NOUN PHRASE $_{DIRECT\ OBJECT}$

媽媽	諉	把	我	兩塊	錢	咯
$ma^{33}ma$	*ei,*	pa^{41}	$ŋo^{41}$	$lian^{41}k^huai^{41}$	$tɕiẽ^{13}$	*lo*
mother	PRT	give	1SG	two:CLF	money	PRT

'Mum, give me two dollars please.'

(35) Changsha dialect of Xiang – Accusative use of pa^{41}:
($NP_{SUBJECT}$) – [$PA^{41}{}_{ACC}$ + $NP_{DIRECT\ OBJECT}$] – VERB PHRASE

把	窗戶	打開
pa^{41}	$tɕ^hyan^{41}$ *fu*	ta^{41} k^hai^{33}
ACC	window	strike–open

'Open the window!'

A grammar of the Changsha dialect of New Xiang by Y. Li (1991: 532-534) also discusses and abundantly exemplifies the verbal use of *pa*^{41}. However, he pre-empts any description of the syntax and semantics of the accusative marker in the disposal construction, claiming that its use is exactly the same as in Mandarin, and consequently finds there is no need to introduce it. Of comparative interest for the present analysis is the use of cognates of *gěi* 給 'to give' as disposal markers in the Shuangpai and Chenzhou dialects (both Southwestern Mandarin) (Wu 1999: 92).

8. Gan dialects

Gan dialects are concentrated in Jiangxi province in central China and make up approximately 2.4% of speakers of Chinese languages. According to Liu (1999), verbs of taking prevail as the source of accusative markers in the Gan dialect area. These include *bǎ* 把 'to hold', *ná* 拿 'to take', *tí* 提 'to carry' and *bǎi*擺 'to put'. Liu (1999: 743–744) attributes the use of the disposal form to Mandarin influence, in his claim that for many Gan dialects, a non-disposal form, either S–V–O or a topicalization is preferred and is somehow more native than a disposal construction. No evidence for this claim is provided, nor statistics for the disposal versus topicalization or S–V–O strategies. Moreover, he is implicitly using Standard Mandarin as the benchmark for his comparative analysis, while a comprehensive description of Chinese dialects by Yuan (1960) does not discuss this construction type at all.

This section makes use of a sketch grammar of the representative dialect for this group, Nanchang (the capital of Jiangxi province) by Laurent Sagart (1999), as well as the data and transcriptions therein. An example of the Nanchang disposal construction using *bǎ* 把 'hold' follows:

(36) Nanchang dialect of Gan – Accusative use of *pa*^{3}

($NP_{SUBJECT}$) – [$PA^{3}{}_{ACC}$ + $NP_{DIRECT\ OBJECT}$] – VERB PHRASE

隔	又	把	水	都	完全
kaq^{7}	*yiu*^{6}	*pa*^{3}	*suïi*^{3}	*tu*^{1}	*won*^{5}*chüon*^{2}
KAQ_{NEW}	again	ACC	water	all	completely

濾	乾	了
li^{6}	*kon*^{1}	*lieu*
filter	dry	PFV

'Once again, strain off all the water.' (Text 5 : 119 *Noodles*)

Speakers of Nanchang Gan also make use of two other verbs of holding: *na*^{2} 拿 'to hold, take' and *laq*^{7}搦 'to hold', particularly with ditransitive verbs of giving in the latter case.

(37) Nanchang dialect of Gan – Accusative use of *laq*^{7}

$(NP_{SUBJECT})$ – *LAQ*$^{7}{}_{ACC}$– $NP_{DIRECT\ OBJECT}$ – VERB PHRASE

人家	就	搦	糖	把	你人	喫
nyin^{5}*ka*^{1}	*chiu*^{6}	*laq*^{7}	*Dong*^{2}	*pa*^{3}	*n*^{3}*len*	*c[h]iaq*^{7}
people	then	ACC	sweets	give	2SG	eat

'People would give you sweets.' (Text 3: 65 *New Year*)

(38) Nanchang dialect of Gan – Verbal use of *na*^{2}

$(NP_{SUBJECT})$ – *NA*^{2}– $NP_{DIRECT\ OBJECT}$ – X

拿	細伢子	到	我
na^{2}	*xi*^{5}*nga-tsï*	*tao*^{5}	*ngo*^{3}
take	child	reach/to	1SG

'Give me the children.'

According to Sagart's informants, the use of *pa*^{3} is not permitted in (38) in particular. However, these markers appear to be losing ground to the Mandarinized disposal form with *pa*^{3}把 (Sagart 1999: 76). Nonetheless, their mere use gives the lie to any inference that the native strategy involves avoidance of the disposal form, as Liu (1999: 744) supposes and, in fact, claims to be particularly the case for Nanchang Gan. Note that *pa*^{3}把can also be used as a verb of giving, as in the Xiang dialects, as exemplified by the main verb in (37).

Although there is no evidence to hand of other types of disposal construction, such as those with resumptive postverbal pronouns, the use of the construction with *pa*^{3} is not subject to exactly the same constraints as in Mandarin. For example, it is possible for unmodified monosyllabic verbs to occur in the predicate, unlike the case in Standard Mandarin.

(39) Nanchang dialect of Gan – Imperative with *pa*^{3}
[*PA*^{3} $_{\text{ACC}}$ + NP$_{\text{DIRECT OBJECT}}$] – VERB
把 佢 煮
pa^{3} *cie*^{3} *tsu*^{3}
ACC 3SG boil
'Boil it.' (Text 5 : 85 *Noodles*)

Standard Mandarin would require at least a resultative verb or phase complement such as *shóu* 'cooked, ripe, mature', as a minimum verb form in the imperative: *bǎ miàntiáo zhǔ-shóu* 把麵條煮熟 [ACC–noodles–boil–cooked] 'Boil the noodles (till done)'. The lack of a semantic constraint on telicity of the predicate is also reported for Hakka (Lin 1990) and Southern Min dialects (Teng 1982) as well.

9. Conclusion

9.1. Sources for disposal markers

These data from Sinitic show there are three main sources for disposal markers in Sinitic languages, broadly defined as follows:

Verbs of taking and holding > Disposal markers, e.g. cognates and synonyms of *bǎ* 把 'to take' as in Standard Mandarin; *jiāng* 將 'to take, lead' as evidenced in more formal registers of Hakka, Southern Min and Cantonese; *ná* 拿 'take, hold' = *nɔ*^{53} in Shanghainese (Wu); *na*^{2}拿and *laq*^{7}搦 in Gan dialects, also the borrowed disposal form *pa*^{3}把 in Gan (which otherwise serves as a verb of giving).
Verbs of giving and helping > Disposal markers, e.g. cognates and synonyms of *gěi* 給 'to give' as in Southwestern Mandarin; *bǎ* 把which means 'to give' in the Hunan Xiang dialects; *bāng* 幫 'to help' in Wu and Xiang dialects, *tet*得 'to gain, to give' in Dabu Hakka; *dei*^{11} 代 'to help' in Wenzhou (Wu).
Comitatives > Disposal markers, e.g. cognates and synonyms of *kā* 共 in Min dialects, *t'ung*^{11}同and *lau*^{11}拹 in Hakka dialects, *tseʔ*^{45} 則 in Shaoxing (Wu); GĒN 跟in Jiang-Huai Mandarin dialects, all with the comitative meanings 'and, with' which can be traced still further back to verbs meaning 'to share, to gather', 'to mix' or 'to accompany'.

The detailed stages of the grammaticalization pathways have been well-described for verbs of taking and holding in Chinese (for example in Peyraube 1985, 1989b, 1994 and Sun 1996) but are still to be worked out for the two additional sources of *give/help* verbs and comitatives. I propose that this in fact proceeds via dative and oblique usages respectively for the semantic domains of *give/help* verbs and comitatives in Chappell (in prep.).

Typologically, the accusative use of comitatives such as *kāng~kā* in Southern Min and *t'ung*^{11} and *lau*^{11} in Meixian Hakka would otherwise represent an unusual conceptual shift, if direct and 'one-step', both in the case of Sinitic languages and crosslinguistically. While Heine and Kuteva (2002: 84–86) list the semantic shift from COMITATIVE > INSTRUMENTAL, they have no category for COMITATIVE > PATIENT. It is significant that the stage COMITATIVE > INSTRUMENTAL is *not* attested for comitatives in Sinitic but rather only in the case of grammaticalization of *take* verbs (see §2 above) *pace* Lakoff and Johnson (1980: 135) who state with respect to the comitative 'With few exceptions, the following principle holds in all languages of the world: The word or grammatical device that indicates ACCOMPANIMENT also indicates INSTRUMENTALITY.'

It is interesting to find that in the Australian languages of Kayardild and Yukulta, objects of irrealis events, that is, ones yet to be achieved including *janija* 'search for' and *ngakatha* 'wait for' in Kayardild (see Evans 1995: 148) or *t^{y}ani* 'look for' and *marin^{y}marit^{y}a* 'to think of' in Yukulta (see Keen 1983: 210–211) are marked by the proprietive and the comitative case respectively. Furthermore, these cases are etymologically related across the two affiliated languages (Nick Evans, pers. comm.). Similarly to schemata proposed for verbs of taking (Heine 1997, Ziegeler 2000), a type of possession is clearly involved for comitatives (and self-evidently for proprietives); this is one based on accompaniment or co-presence: In fact, Evans (1995: 147) defines the sense of having coded by the Kayardild proprietive as '*X can expect Y to be in the same place as X when X wants, and X can do with Y what X wants'*.[26]

The conceptual shift for *give/help* verbs into object markers has been very little researched, if at all. While crosslinguistically, the shifts to benefactive, purposive and causative markers for *give* verbs are well-documented, as in Newman (1996) and Song (1996), the further step into an accusative marker is not attested.

I propose that for both domains of *give/help* verbs and the comitative, the semantic change occurs in the following manner, noting that this is just

one of the attested pathways of grammaticalization for each class of morpheme, which possesses several:

(40) **GIVE/HELP** > DATIVE > DATIVE/ACCUSATIVE > ACCUSATIVE

(41) **COMITATIVE** > OBLIQUE (benefactive/addressee/ablative) > ACCUSATIVE

The main difference between the two domains is that the comitative develops into an oblique marker 'with respect to' and not specifically into a dative marker (see Chappell 2000 on Southern Min comitatives).[27] In fact, the semantic change for *give* verbs echoes similar developments for Old English pronouns $him_{dat} > him_{dat/acc}$ and $hire_{dat} > her_{dat/acc}$, not to mention Spanish accusative case-marking of animates by means of the erstwhile dative (Heine and Kuteva 2002: 103, 37).

Finally, note that in other parts of the world, as in many West African Benue-Kwa languages, accusative markers typically have their source in verbs of taking and holding, and may have an instrumental function in addition, similar to the use of *bǎ* and *jiāng* in the Medieval Chinese period (see Lord 1993: 453–457; Heine and Kuteva 2002: 286–289).

9.2. Construction type

At least four types of disposal construction have been identified in this study. These can be defined in terms of syntactic configuration:

(i) $(NP_{SUBJECT}) - [MARKER_{ACC} + NP_{DIRECT\ OBJECT}] -$ VERB PHRASE

(ii) $(NP_{SUBJECT}) - [MARKER_{ACC} + NP_{DIRECT\ OBJECT(i)}]\ VERB_1 - (VERB_2) - PRONOUN_{(i)}$

(iii) $NP_{DIRECT\ OBJECT(i)} - [MARKER_{ACC} + PRONOUN_{(i)}] -$ VERB PHRASE

(iv) $(NP_{SUBJECT}) - [CHIONG_{ACC} - NP_{DIRECT\ OBJECT(i)}] - K\bar{A}_{ACC} - PRONOUN_{(i)} -$ VERB PHRASE

All the Sinitic languages examined in this brief survey have been shown to possess at least one type of disposal construction:

$(NP_{SUBJECT}) - [MARKER_{ACC} + NP_{DIRECT\ OBJECT}] - VERB\ PHRASE$

While the basic structure is isomorphic in form with the Standard Mandarin *bǎ* construction, it may make use of an etymologically distinct marker, according to the classification in §9.1. In addition to this, certain Sinitic languages permit resumptive or anaphoric pronouns in the postverbal slot (Hakka, Cantonese):

$(NP_{SUBJECT}) - [MARKER_{ACC} + NP_{DIRECT\ OBJECT(i)}]\ VERB_1 - [VERB_2] - PRONOUN_{(i)}$

In a third construction type, the direct object is placed in clause-initial position and a resumptive pronoun follows the disposal marker (certain Min and Wu dialects):

$NP_{DIRECT\ OBJECT(i)} - [MARKER_{ACC} + PRONOUN_{(i)}] - VERB\ PHRASE$

In both construction types, the pronoun must be coreferential with the direct object preposed to it, not to mention, invariably in third person singular form. This contrasts strikingly with the case for standard Mandarin which does not possess either structural subtype for its *bǎ* construction.

A fourth structure found only in Southern Min involves hybridization and the use of a resumptive pronoun, whereby both the native and Medieval markers of the disposal construction co-occur:

$(NP_{SUBJECT}) - [CHIONG - NP_{DIRECT\ OBJECT(i)}] - KA\bar{I} - PRONOUN_{(i)} - VERB\ PHRASE_{TELIC}$

An interesting semantic constraint has also been observed for certain Hakka and Wu dialects: the direct object governed by the disposal marker is required to be coded as a possessive NP.

9.3 Intra-typological classification

A highly preliminary intra-typological classification of the seven major Sinitic languages with respect to disposal constructions can be proposed with the caveat that detailed research into the syntactic and semantic constraints needs to be made before a full typology is possible.

Standard Mandarin stands out as a singleton: it possesses just the one main type of disposal construction which has semantically generalized

to mark absolutive NPs, and not just accusative ones. The Southern Sinitic languages of Cantonese, Hakka and Min all evince a Medieval stratum, represented in their use of cognates of *jiāng*; with Hakka and Cantonese further related by their use of a subtype with the postverbal resumptive pronoun. Hakka and Min also possess distinct markers which belong to the native stratum. Min and Wu dialects are naturally associated by their use of the construction type with a clause-initial patient noun coreferenced by the following accusatively-marked pronoun. These two dialect groups are reputed to be two of the oldest branches of Sinitic, with Min dialects having possibly split off from an ancestral proto-Wu-Min language (see Chappell 2001a). Furthermore, Hakka, Min and Wu are conspicuous for their use of comitatives in the function of disposal markers.

In contrast to these Southern Sinitic languages, the central zone Sinitic languages of Gan and Xiang which have remained in prolonged linguistic contact with Mandarin dialects can be grouped together for their use of 'give' and 'take' verbs in the function of disposal markers. 'Give' is also the commonest source for Wu whose northern dialect areas are also in close proximity with Mandarin, possibly forming an areal feature for this central transitional zone.

Finally, from examination of the data in these six Sinitic languages for disposal constructions, it should be clear that many important phenomena are overlooked if only direct correlates of the Mandarin *bǎ* or *jiāng* constructions are searched for. By 'direct correlates', I mean those which 'translate' the constituents and word order for standard Chinese *bǎ* or *jiāng* constructions slot–by–slot, and use cognate markers. This results in two main linguistic 'crimes': Either constructional subtypes are considered as somehow 'deviant' when they do not conform to the structural framework for *bǎ* or *jiāng* constructions (for example, resumptive pronouns) or important kinds of disposal constructions are completely overlooked because the markers are non-cognate with *bǎ* or *jiāng*, as in the case of comitatives and *give/help* verbs.

Clearly, we have a case of standard Mandarin taking the place of European languages such as Greek and Latin as the new model for descriptive grammar–writing in Chinese linguistics. In other words, a Eurocentric model has been replaced by a Sinocentric one, specifically one that is based on the standard language, Mandarin. Paradoxically, Mandarin in its turn has not proven to be the best departure point for typological comparison within Sinitic: it possesses just the one type of disposal construction, and the one accusative marker, whose use has further evolved into an absolutive, plac-

ing it somewhat out in 'left field', at variance with its sister languages, many of which possess two or more construction types not to mention several markers. At the same time, its constraint on telicity of the predicate appears to be stronger than for other Sinitic languages, although certain dialect groups permit the use of intransitive predicates too, such as Southern Min. The possibilities are more restricted than Mandarin, however, including only certain kinds of undergoer subjects (see Teng 1982).

The extensive range of structural possibilities and semantic constraints which shape these different disposal constructions shows that it is an erroneous exercise to simply assume a broad syntactic isomorphism between Mandarin and other Sinitic languages. It is therefore crucial to explore the diversity of the Sinitic languages in a more detailed and thorough way for the purposes of working out intra-Sinitic typological parameters and for finding conceptual links with structures that have similar functions in other languages of the world.

Notes

1. I thank the editors, William McGregor, Alain Peyraube, Laurent Sagart and the anonymous reviewers for their comments and critique of this study, also for their many excellent suggestions. I am indebted to Wen Huiping and Liu Pinlai, CRLAO, for checking the Mandarin data. A note on terminology: I use the term 'Sinocentrism' in preference to the more unwieldy 'Mandarincentrism' or 'Mandarocentrism', and, moreover, use it with a negative connotation. This neologism refers to the bias in choosing the official and standard language, Mandarin, as representative of all Chinese languages, and in fact, reflects the common use of 'Chinese' to mean 'Mandarin'.
2. This has the handwritten title of *Gramatica China* and annotation on the first page that it was written by Father Melchior de Mançano for the use of Father Rajmundo Feijoo. It is part of a corpus of early Southern Min materials being used by this author in a joint project with Alain Peyraube on the diachronic syntax of Southern Min (16^{th} – 20^{th} centuries). Prof. Peyraube uncovered this precious manuscript in the University of Barcelona Library some years ago. However, a grammar by Juan Cobo (d. 1592) entitled *Arte de la Lengua China* [Grammar of the Chinese language] may be the earliest grammar of any Chinese language. The manuscript is mentioned in Coblin and Levi (2000: ix) but has not been sighted, presuming a copy still exists.
3. Information regarding Funing 福寧in Fujian province as Varos's main place of work comes from W. South Coblin (pers. comm.), and not Fuzhou 福州, as previously believed (e.g. Gonzales 1967).
4. A list of works by the Dominicans who were the most active sect among missionaries in the production of grammars and descriptions of Chinese languages and dialects can be found in Gonzales (1967). Van der Loon (1966, 1967) also provides a brief historiography of the study of Chinese languages by western scholars, discussing major works from 16^{th} century onwards. An early important bibliography on works published in China by Europeans is that of Cordier (1901).
5. Abel-Rémusat's grammar (1822) of vernacular Chinese is an exception to this rule, for the reason that it sets out to explain Chinese grammar on its own terms (see Peyraube 2001). Thus, Abel-Rémusat provides brief descriptions of both *bă* and *jiāng* .
6. I use the term 'accusative marking' for nouns preceded by a preposition whose grammatical function is to indicate that the dependent noun is in the argument role of direct object. This is mainly to avoid ambiguity, given the large number of senses 'object' has. 'Accusative marker' is also used interchangeably with 'disposal' marker, a term adopted from the domain of Chinese linguistics.

Even though Sinitic languages are clearly not inflectional and do not possess morphological case marking *per se*, the disposal construction is the kind of structure from which eventual inflections emerge when the grammaticalization process has taken its full course. Furthermore, in terms of typology, there are benefits to be gained from unifying the use of terminology across languages.

7. This is the more common name for *Grammaire générale et raisonnée* (1660) by A. Arnauld and C. Lancelot. Reprint, 1997. Paris: Editions Allia.
8. One of the anonymous reviewers observes that the same situation applies in the study of unrelated minority languages in China.
9. Yue-Hashimoto (1993) also provides a description of dialectal differences for many different construction types, and includes a comprehensive reference list on dialectal studies of Sinitic languages.
10. Abbreviations used in the glossing of examples are as follows: ABS=absolutive marker preceding affected object noun, ACC= accusative marker preceding affected object noun, ACH=achievement aspect marker, ADV=marker of adverb formation, AGT=agentive marker, ASST=assertive modality particle, CLF=classifier, COMP=completive aspect marker, COMPR=comparative marker, CONT =continuative aspect marker, COP=copula, CRS=sentence-final marker of a currently relevant state of affairs, DEM=demonstrative, DIMN=diminutive suffix, DIR=directional aspect marker encliticized to verbs, EXT=extent, marker of a postverbal complement indicating the extent of an action or its result state: 'so X that', GEN = genitive marker, INCH= inchoative aspect marker, INTS=intensifier, LIG=marker of ligature and dependency for attributive phrases, also for relative clauses, LOC=locative, NAME = proper name, NEG=negative adverb, NEG:IMP=negative imperative modal verb, NOM=nominalizer, PFV=perfective aspect marker, PL= plural, PRT=modal or discourse particle, Q=quantifier, SG=singular.
11. In fact, many semantically reflexive unergative predicates such as *chī-kě le* eat-thirsty 'to eat so that one becomes thirsty' or *zǒu-fá* walk:exhausted 'cause oneself to become exhausted through walking' are possible (see Chappell 1992b). Furthermore, in older forms of Mandarin and in certain non-standard Mandarin dialects, the use of motion verbs with *bǎ* constructions is permitted (see Frei 1956, Grootaers 1954). For example, *Bǎ ge zhū pǎole.* [ABS-CLF-pig-run-CRS] 'A pig is running away.' In the latter case, the definition for the constructional semantics would need to be broadened.
12. Given information in most Chinese languages is typically coded into a preverbal position; new in postverbal (see Li and Thompson 1981 on Mandarin).
13. This may appear to be at variance with Frei's extremely perceptive analysis (1956) of the *bǎ* construction as an ergative construction; however, this is in

nomenclature only: I choose 'absolutive' in preference to 'ergative' for the reason that the ergative NP is not morphologically marked at all (see Chappell 1992b however for a contrasting position).

14. Percentages of the population are quoted throughout this chapter as a rough approximation of speaker numbers, given that the most recent censuses in China have not surveyed maternal language or knowledge of other dialects. In other words, these are estimates, absolute figures not being possible.
15. I use the *pīnyīn* romanization system for the **Mandarin** examples, a system adopted in 1958 for transcription and language pedagogy purposes by the Chinese government. Note that Standard Mandarin, or *pǔtōnghuà*, 'the common language' refers to a formal, educated variety of the Beijing dialect from the Northern group of Mandarin. Consensus for the definition of 'standard Mandarin', or *pǔtōnghuà*, was achieved at the Symposium on the Standardization of Modern Chinese held in China in 1956. It is specifically based on the pronunciation of the Beijing dialect, the lexicon of the northern dialects and the grammar of modern vernacular works (Chappell 1980). Chinese characters in tradtional *fántǐzì* form are provided, and where feasible, also for the six other Sinitic languages treated in this study. Where a demotic character is not known or attested, the use of an empty box, thus□, is conventional practice in Chinese linguistics.

    Tone marks are indicated on all syllables, apart from unstressed ones, and without indicating tone sandhi. For the **Southern Min** examples, I use the Church Romanization system, as exemplified in the Carstairs Douglas dictionary (1990). TONE DIACRITICS: **v** (no marking) = high level 55; **v́** = high falling 53; **v̀** = low falling 21; **v̂** = mid rising 24; **v̄** = low level 22, **vh** = low checked 32 (glottalized ending), **v̍C** = high checked 4 where C = plosive. **Meixian Hakka** examples follow the romanization devised by MacIver (1991), unless examples from Rey (1990) are being quoted which uses a francophone system. The **Cantonese** examples from Cheung (1992) use the Yale system while my own data employs the Sidney Lau system. The **Shanghainese**, **Xiang** and **Gan** examples are rendered in the International Phonetic Alphabet.
16. This S-V-O counterpart is dispreferred for the reason that the postverbal noun is fully lexical and thus, creates a 'heavy VP' following the polysyllabic verb with its directional complement.
17. I do not agree with one of the anonymous reviewers that the intransitive *bǎ* constructions increase the valency since the causing event is generally not an argument of the verb. The absolutive NP may also represent the grammatical subject of a reflexive predicate in Mandarin, see Chappell (1992b). Intransitive predicates such as *lèi* 'be tired' are causativized by the constructional se-

mantics of the disposal form, which indeed has several subtypes, as argued in Chappell (1992b).

18. Peyraube (1985, 1989, 1996) has argued convincingly that *bǎ* did not directly supersede the Archaic Chinese construction with *yǐ*, but was rather in competition with the earlier *jiāng* construction.
19. The bridging stage may be the use of *kāng* as a general marker of the oblique, if not via a benefactive/dative interpretation. This point of view is taken in Chappell (in prep, chapter 4). Note also that in contemporary Min dialects, *kā ~ kāng* is a polysemous morpheme, coding several functions, as described in Chappell (2000).
20. Chappell (2001c) devotes a section to the topic of hybridization of syntactic constructions in Sinitic languages.
21. Apparently, this construction can be used by younger generation speakers of Taiwanese Mandarin (thanks to Dylan Tsai, National Tsing Hua University, for this observation). In this case, it can be viewed as a calque from Taiwanese Southern Min (see also Chappell 2001c and to appear for the same phenomenon with *say* verbs).
22. In the original documents, examples (17) and (18) are given in character form only. I have transcribed them in one of the most widely used transcription systems which was devised by missionaries in the 19th century, as represented in the Hakka dictionary of MacIver (1991). Translations are similarly my own.
23. The reader will note various romanizations for the comitative marker in Hakka: *t'ung*[11], *t'oûng* and *thûng*. This authentically reflects the original works from which the examples were taken.
24. For example, this construction type is not treated in any depth in Matthews and Yip's reference grammar of Cantonese (1994), nor mentioned in Yuan (1960).
25. I use Mandarin *pīnyīn* romanization in small capitals for the comitative marker 跟GEN, as no transcription has been provided in the original source for this character, in either of the dialects listed.
26. Thanks to Nick Evans (pers. comm.) for providing this information. He also states that etymological proprietives/comitatives mark the objects of future clauses in Kayardild and Lardil as well. Hence, there appears to be a link between reduced transitivity and comitative marking of the object in this group of languages which neatly tallies with the transition phase of some kind of oblique marker usage between the comitative and the accusative uses of disposal markers in the given Sinitic languages. Oblique cases similarly code a reduced effect on the noun so marked. Another similarity which Nick Evans has pointed out to me is the fact that there is no syncretism with instrumental markers.

27. This standpoint contradicts and supersedes my earlier view (Chappell 2000) that the accusative meaning developed from an ablative or Source use of *kā*, the comitative marker, in Southern Min. I am now of the view that the comitative 'and, with' did not develop into a polysemous preposition meaning 'to', 'for', 'from' but rather grammaticalized into a preposition with the vague semantics of 'with respect to'. I owe this enlightenment and solution to William McGregor. One of the anonymous reviewers also observed that the BENEFACTIVE > ACCUSATIVE link might explain the comitative source, if not the *give/help* source as in the semantic re-interpretation 'He helped the child get dressed' > 'He dressed the child.'

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How to miss a paradigm or two: Multifunctional *ma-* in Tagalog

Nikolaus P. Himmelmann

1. Introduction

The first major grammar of Tagalog was published in 1745 by the Catholic missionary Sebastian de Totanes. Since then, quite a few grammars have been published, including the perhaps finest piece of American structuralist grammar writing, Bloomfield's (1917) *Tagalog Texts with Grammatical Analysis*. Even a very superficial glance through a number of these grammars and grammatical sketches[1] immediately reveals a bewildering heterogeneity: apart from the phonology sections these grammars have very little in common in terms of overall structure and terminology. Of course, some of this heterogeneity is due to differences in grammatical framework and anticipated readership, and in this regard Tagalog grammar writing does not differ from grammar writing on any other language. But it is probably fair to say that in the case of Tagalog the heterogeneity is more profound in that there is no agreement with regard to a number of fundamental issues of grammatical structure, including the nature of grammatical relations and basic lexical and morphological categories. In short, more than 250 years of more or less continued grammatical analysis do not seem to have been long enough to establish a widely accepted basic grammaticographic practice for Tagalog (or any other Philippine language, for that matter).

Among the factors which contribute to this lack of a common grammaticographic practice is the following paradox: Philippine languages are very similar to, and at the same time very different from, Indo-European languages, on which all (western) grammaticographic practices are based. When working on isolating Chinese or polysynthetic Cayuga, the differences to Standard Average European are almost immediately obvious and it is clear that these require major adjustments of Greek and Latin-based grammatical categories. This is not so in the case of Tagalog: in some sense

Tagalog has voice alternations, in another it has not; there is evidence for the grammatical relation *subject*, the lexical categories *noun*, *verb* and *adjective*, a distinction between derivation and inflection, nominal case marking, core vs. peripheral arguments, etc.; but there is, equally, lots of counterevidence against these categories (see Himmelmann 2005 for examples, discussion and references). Or, to put this in a perhaps more productive way, most of the basic categories of Standard Average European are also found in Tagalog, but in an interestingly different way.[2]

Many problems in identifying the basic categories for an adequate description of Tagalog are caused by the pervasive multifunctionality of practically all grammatical items (function words as well as affixes). This chapter explores some of the problems created by these items for grammatical analysis and the structure of descriptive grammars, using the multifunctional prefix *ma-* as its primary example. As further illustrated in section 2, this prefix occurs in formations that have been termed *adjectival*, *involuntary action*, *potential*, *abilitative*, *stative*, etc. The major goal of this chapter is to propose a coherent systematics for the multiple uses and functions of this prefix.

The basic challenge posed by a multifunctional affix is to uncover the language-internal systematics of its uses, i.e. a systematics based on language-internal evidence and not one derived from a supposedly universal grid of semantic and/or grammatical categories. This includes in particular decisions about polysemy and homophony, i.e. whether one is dealing with an item conveying a single, possibly highly general meaning, or one with multiple, but related meanings, or simply a case of chance resemblance on the formal side.

There is no single pat solution for this problem which would apply to all multifunctional affixes in all languages of the world. See Enfield (this volume) for (mostly semantic) arguments pertaining to the decision between monosemy and polysemy. Here we will be concerned with evidence for and from paradigm structure, a kind of evidence which has always been applied without much discussion in the case of Indo-European and Afro-Asiatic languages but which is often not used outside this group of languages. In particular with regard to putatively agglutinating languages such as Tagalog, little use of paradigms is made, probably based on the assumption that straightforward compositionality on the formal side is also mirrored by straightforward compositionality on the content side.

Paradigms in Tagalog (and other western Austronesian languages) are of a somewhat different nature than those in Indo-European languages in

they are not clearly inflectional but instead show quite a few derivational characteristics, as further illustrated in section 3. Although Tagalog paradigms lack the generality characterizing inflectional paradigms in Indo-European languages, they are still paradigms in adhering to the principle of constant correlation or proportionality (x relates to x' as y relates to y', regardless of the formal details). The morphological and semantic parameters underlying these correlations are essential in uncovering the language-internal systematics of multifunctional affixes such as *ma-*.

It is argued here that to date the nature of this affix has been misunderstood because analysts have failed to notice that it participates in *two* different, but related paradigms. On the one hand, *ma-* serves as the marker for potentive dynamic verbs in undergoer voice (section 5). On the other hand, it marks basic statives (section 6).[3] A by-product of this exercise will be the recognition of the fact that next to aspect/mood and voice, dynamicity - the distinction between dynamic and stative predicates – is of fundamental importance to Tagalog grammar (section 7).[4]

Given this focus on paradigms, it will not come as a surprise that I will follow here the basic assumptions of a WORD-AND-PARADIGM approach to morphology. Most importantly, rather than talking about morphemes as minimal units of form and meaning, I will speak of (bound) formatives - i.e. formal units attaching to lexical bases – which in a given morphosyntactic context may convey (or realize) such and such a bundle of semantic and/or syntactic features. It is only in this framework that the term *multifunctional affix* has a straightforward and consistent interpretation, i.e. a formative which occurs in a multitude of morphosyntactic contexts conveying a number of different bundles of semanto-syntactic features. In morpheme-based morphology, strictly speaking there cannot be a multifunctional morpheme since morphemes are units of meaning and form (so a multifunctional affix is either polysemous or "represents" two or more homonymous morphemes).[5]

Many examples in this chapter come from the author's own corpus of spontaneous spoken narratives, including the author's own transcriptions of stories from Wolff et al.'s (1991) textbook and accompanying audio cassettes (see Himmelmann 1999: 245f for details). Other sources are Bloomfield's (1917) text collection and the example clauses found in Father English's (1986) dictionary. In the examples from the narrative corpus features of the spoken language (in particular common reductions) are retained.

2. Multifunctional ma-

This section reviews (part of) the semantic range of words marked with the Tagalog prefix *ma-* or its variant *mà-* (with secondary stress/lengthened vowel). To begin with, we have to take note of the fact that many words prefixed with *ma-* allow the aspect/mood alternations illustrated in Table 1 with the base *takot* 'fear'. The formative *ma-*, which is the conventional citation form of the prefix, is the basic or non-realis form which contrasts with the realis formative *na-*. Accented reduplication (the vowel in the reduplicated syllable is distinctly long) signals imperfective aspect in either mood. As we will see in section 3 below, this aspect/mood alternation is found with many other affixed formations in Tagalog. In fact, it is so general that these alternations can be (and have been) called aspect/mood inflection.

Table 1. Aspect/mood inflection for *ma-takot* 'fear, be afraid'

NON-REALIS/ PERFECTIVE	NON-REALIS/ IMPERFECTIVE	REALIS/ PERFECTIVE	REALIS/ IMPERFECTIVE
ma-takot	ma-tàtakot	na-takot	na-tàtakot

In (1) *matakot* is a non-realis perfective form (also called the base form) while *natàtakot* in (2) is a realis imperfective form:

(1) baká ngá kayó 'y **ma**takot
baká' ngá' kayó ay ma-takot
maybe really 2.PL PM MA-fear
'maybe you would be scared'

(2) **na**tàtakot silá
na-RDP1-takot silá
RLS.MA-RDP1-fear 3.PL
'they were frightened'

Strictly speaking, then, the formations to be investigated here may carry the prefixes *ma-* or *na-*, the changing nasal indicating a regular realis/non-realis alternation as it is also found in many other Tagalog prefixes (e.g. *maki-/naki-*, *maka-/naka-*, *mag-/nag-*). Thus, when speaking about 'the prefix *ma-*', reference does not pertain to a specific formative of the shape /ma/ but rather to the complete inflectional paradigm given in Table 1. In this section, any formative which belongs to this paradigm is glossed simply as MA, as in the preceding two examples.

Before we proceed with an illustration of the uses of *ma-*, another complication needs to be mentioned. There are some formations, further illustrated in section 4, where *ma-* does not alternate with *na-* (or any other prefix for that matter), and some where *na-* does not alternate with *ma-* (or any other prefix for that matter). Thus, we have to distinguish between a variable and an invariable *ma-*, the former being the conventional citation form of the alternating pair *ma-/na-*. The remainder of this section (and most of this chapter) will be concerned with variable *ma-*, which is simply called *ma-* unless there is a need to distinguish it from invariable *ma-*.

Words formed with (variable) *ma-* can roughly be grouped into the following five sets based on their semantics. To begin with, there are words expressing a bodily condition or an emotional state. In addition to the two preceding examples, compare:

(3) hindí na naman tayo **na**gùgútom
hindí' na namán tayo na -RDP1-gutom
NEG now truly 1.PL.IN RLS.MA-RDP1-hunger
'we are not starving'

(4) **na**pipe sya.
na- pipi siyá
RLS.MA-dumb 3.SG
'He got dumb.' (Bloomfield 1917: 285/29)

"Bodily condition or state" here also includes 'be alive, live', 'be dead, die' and 'sleep'.

With (some) positional predicates ('sit', 'lie', 'hang', etc.), forms with *ma-* denote being in, or getting oneself into, the position denoted by the base:

(5) Isang araw **na**upó sya sa taburete sa
isá-ng araw na- upó' siyá sa taburete sa
one-LK day RLS.MA-sitting 3.SG LOC stool LOC
gitná ng apat na hukay
gitná' ng apat na hukay
center GEN four LK hole
'One day he sat down on the chair between the four pits, …' (Bloomfield 1917: 24/39)

(6) tapos siya'y **na**higá'
tapos siyá=ay na -higá'
end 3.SG=PM RLS.MA-lying.down
'Then she lay down, …'

(7) karamihan ay **nà**tàtayó'
karamihan ay nà- RDP1-tayó'
large.quantity PM RLS.MA-RDP1-upright.position
sa malalakíng bakuran
sa ma-RDP-lakí -ng bakod-an
LOC MA-RDP-bigness-LK fence-LOC
'Most of them [i.e. houses] stood in large enclosures, …' (Bloomfield 1917: 34/38)

A third set is formed by *ma*-prefixed words denoting (acts of) perception. When these are used as predicates, the thing perceived appears in subject position (marked by the specific article *ang* or one of its alternates), while the perceiver appears in a genitive or possessor phrase.

(8) **mà**kíta mo bukas ang gandá ng
mà-kita mo bukas ang gandá ng
MA-seen 2.SG.POSS tomorrow SPEC beauty GEN
atin-ng báhay
atin-ng bahay
1.PL.IN.DAT-LK house
'tomorrow you will see how beautiful our house will be (lit. you will see the beauty of our house)

The fourth set of *ma*-words denotes involuntary actions, i.e. actions which occur without the full control of the actor or which an actor is "enabled to perform by virtue of outer circumstances", as Bloomfield (1917:293) puts it. If the action is semantically transitive, the undergoer occurs in subject function, while the actor appears in a genitive or possessor phrase, just as in the case of perception predicates. The lack of control characterizing involuntary actions ranges over a fairly broad semantic domain which includes spontaneous (re-)actions over which the actor has absolutely no control as in:

(9) biglá nyang **nà**bigkás iyón
biglá' niyá -ng nà -bigkás iyón
sudden 3.SG.POSS-LK RLS.MA-enunciation DIST
'(Terrified) she suddenly exclaimed this: …'

It also includes accidental actions, i.e. actions which the actor physically controls but did not intend to carry out.

(10) **na**dalá ko ang libró
na- dalá ko ang libró
RLS.MA-carried 1.SG.POSS SPEC book
'I took the book by accident.'

Finally, inanimate effectors (in the sense of Van Valin and Wilkins 1996) are generally depicted as not being in control of the action triggered by them.

(11) ang dahun ay **na**dàdalá ng tubig.
ang dahon ay na -RDP1-dalá ng tubig
SPEC leaf PM RLS.MA-RDP1-carried GEN water
'The leaf was being carried along by the water.'

Note that putting together all these different uses under a single label *involuntary* already involves quite a few abstractions, which distinguishes this group of formations from the ones previously mentioned. The presentation here follows a widespread practice in Tagalog grammatical descriptions.

The fifth widely recognized usage of *ma-* is to mark the ability or opportunity to carry out an action. Again, words affixed with *ma-* in this sense are undergoer-oriented in that the undergoer occurs in subject function:

(12) kung **mà**bibili iyán.
kung ma -RDP-bilí iyán
if MA-RDP-sale MED
'If that can be sold.'

(13) Kung hindí tayo àalís ngayón ay hindí
kung hindí' tayo RDP1-alís ngayón ay hindí'
if NEG 1.PL.IN RDP1-departure now PM NEG
natin mapàpanoód ang parada.
natin ma-RDP1-panoód ang parada
1.PL.IN.POSS MA-RDP1-look.at SPEC parade
'If we don't go now, we won't be able to see the parade.' (Wolff et al. 1991: 286)

In realis mood, this usage generally conveys that an actor succeeded or managed to carry out an action despite a number of obstacles.

(14) hangga't hindí mo **na**punó itóng
hanggá=at hindí' mo na -punó' itó-ng
result=and NEG 2.SG.POSS RLS.MA-full PRX-LK
isang tasang itó
isá-ng tasa-ng itó
one-LK cup -LK PRX
'As long as you haven't managed to fill this one cup, (I won't give you rice).'

The last two uses of *ma-*, the ability and the involuntary uses, share an important property: They occur with exactly the same set of bases. That is, in principle all of the preceding six examples are ambiguous between an ability and an involuntary reading. To illustrate, example (10) also means 'I was able to carry the book' in addition to 'I took the book by accident'. Conversely, example (12) also means 'if that happens to be sold' or 'if that is sold by accident'.

To summarize the data surveyed so far, the variable prefix *ma-* occurs in the following five types of expressions:

1. bodily conditions or emotional states
2. positionals
3. perception predicates
4. involuntary actions
5. ability to perform an action

This is not a comprehensive list of the uses of *ma-*, but it is sufficient to serve as a first illustration of the multifunctionality of *ma-*. Before we further expand this list (in section 4 below), it will be useful briefly to recall the descriptive problems posed by multifunctional affixes such *ma-*, using existing grammatical descriptions of Tagalog as examples.

At some level, all existing descriptions of Tagalog distinguish the five different uses of *ma-* listed above, giving roughly the same kinds of characterizations for them. The reason for this agreement would appear to be the semantic coherence of these uses and the fact that "involuntary action", "perception", "ability", etc. correspond to grammatically relevant categories also found in other languages.

Tagalog grammars diverge significantly, however, with regard to the problem of how to combine these different uses into higher-level categories. In fact, in quite a few descriptions the authors avoid taking an explicit stand on this issue. But there are two reasons why the problem of a higher-level systematization cannot be avoided.

First, there is no neutral way of presenting the information on the different uses of *ma-* which would avoid any implications with respect to a higher-level categorization. Basically two options exist for solving the presentational problem. The first option is to present all uses together in one part of the description, typically using the formative *ma-* as (part of) the heading of this section. This arrangement suggests that there is a single prefix *ma-* which has a number of (related) meanings and functions (and hence is polysemous) or a highly general meaning which is contextually modulated. Bloomfield's (1917) analysis of both variable and invariable *ma-* (§§438–441, 463–466)[6] is a prototypical representative of this option in that he makes it quite clear that for him there is only a single prefix *ma-* for which he distinguishes a number of different meanings. Thus, for example, he characterizes one usage as "object directly affected by an action which an actor is able to perform" (§438 = the fifth usage ("ability") in the list above). Another one pertains to "the animate performer of an involuntary act" which includes emotion or sensation and "processes of life" such as 'get lame', 'lived', 'died', etc. (§441 = the first usage ("bodily conditions or emotional states") in the list above). And so on.

The second option is to present the different uses of *ma-* in a number of different places in the grammar, which implies homonymy, i.e. that there are a number of different prefixes which happen to have the same shape /ma/ (*ma-*$_1$, *ma-*$_2$, etc.). This is the strategy used in Schachter and Otanes (1972) who distinguish a *ma-* which occurs in ability and involuntary-action verbs (1972: 330–333), an actor voice ("actor focus" in their terminology) marking *ma-* which occurs with predicates denoting emotions and positions (1972: 288, 301), an undergoer voice ("object focus") marking *ma-* which occurs with perception predicates (1972: 288, 296), and an intransitive *ma-* used with "verbs of becoming" (1972: 288, 307).

These two examples should make it clear that the mere arrangement of information on the uses of the formative *ma-* already has implications for its higher-level systematics and that there is no non-committal way of representing this information, at least in linear texts (I will refrain from discussing here the possibilities of hypertext representations).

The second reason why the question of a higher-level analysis of *ma-* cannot be avoided is the fact that a good grammatical description does not simply consist of a list of grammatical formatives and constructions and their meanings and functions. Instead, an insightful descriptive analysis will attempt to uncover the systematic relationships that exist between individual formatives and constructions. Even if one does not believe in a single

"great underlying groundplan" (Sapir 1921:144) that makes a language tick and encompasses every little detail of its structure (ranging, say, from morphonological rules of vowel alternations to the formation of ordinal numbers to constraints on tense marking in complex sentences), hardly any linguist would doubt that at least subsets of the formatives and constructions found in a given language closely interact and form a "system" demanding a description as such. With regard to Tagalog *ma-*, this means that one would not only like to know whether and in what sense the different uses of this prefix form a system but also how this prefix fits into the larger system (or systems) of "verbal" affixations in Tagalog.

Inasmuch as one believes that evidence for systematic interrelationships between formatives and constructions is to be gleaned from the attested structures themselves rather than from a putative universal grammar, the evidence provided by the shape of a given set of formatives is without doubt of primordial importance. That is, in dealing with multifunctional affixes the principle of "one form – one meaning" will be the major heuristic. The initial assumption will be that such an affix is highly general (or perhaps polysemous) rather than homonymous. The point where descriptive approaches diverge most sharply in dealing with multifunctional affixes is with regard to what evidence is considered strong enough for weakening the "one form – one meaning" principle (and the intensity with which such evidence is sought).

Of major importance in this regard is the question of what is used to define "one form" in this equation. Contrary to what appears to be assumed in quite a number of discussions of multifunctional affixes, the segmental make-up of a given formative is not the only parameter relevant to determining "one form". Usually, suprasegmental differences are also relevant (but recall that the suprasegmental differences between *ma-* and *mà-* are disregarded here when speaking of variable *ma-*). Furthermore there are also distributional factors, including syntactic distribution and distribution with regard to (independently established!) lexical classes, which may provide important formal evidence for distinguishing different formatives. It is not my intention here to review all possible kinds of evidence relevant to deciding what may be considered "one form". Instead, I wish to focus on one type of evidence, i.e. paradigmatic evidence, which is all too often ignored, in particular in non-highly inflectional languages.

In highly inflectional languages, this kind of evidence is employed almost automatically, without much discussion and without the need to justify its use. To recall just one well-known example, the English suffix *-s*

marks both plural in nouns and the 3rd person singular present tense of verbs.[7] In both functions the morphonological alternations are identical: [iz] after sibilants, voiceless [s] after voiceless non-sibilant consonants, etc. Despite this perfect segmental identity, the idea that this is a case of polysemy or generality has never been seriously entertained simply because it is clear that the two uses of the formative belong to two very different paradigms. (In addition, of course, the knowledge that modern *-s* diachronically reflects two different formatives (3rd singular marking *-Ø* and plural marking *-es*) and the fact that there is no obvious semantic relation between the two functions also strongly suggest homonymy.)

In the case of Tagalog *ma-*, no paradigms are immediately obvious which would suggest a basic systematics for its different uses. In fact, paradigms are little used in Tagalog grammars[8] because the morphology is segmentally transparent, approaching "ideal agglutination" in that the boundaries between affixes and bases are hardly ever a problem. But easy segmentability is only one of a number of parameters underlying the traditional agglutinating vs. flectional-distinction, as recently emphasized by Plank (1999). With regard to quite a few other parameters, Tagalog in fact is rather flectional. The fact that most high frequency affixes are multifunctional is one major flectional characteristic. Another one is the fact that these formatives typically convey a bundle of morphosyntactic features rather than a single feature (that they are *cumulative* rather than *separatist* in Plank's (1999: 282) terminology). It is this parameter that we now turn to because it also provides evidence for paradigmatic organization and thus language-internal evidence for the systematization of the different uses of *ma-*.

3. On the nature of paradigms in Tagalog: Aspect/mood and voice

The only obvious paradigm in Tagalog which is similar to inflectional paradigms in Indo-European languages is the aspect/mood paradigm already mentioned in the preceding section and illustrated for variable *ma-* in Table 1. Aspect/mood alternations are not restricted to words prefixed with variable *ma-* but occur in a large number of other morphologically complex formations, in particular words marked with voice affixes (also called *focus* affixes in the Philippinist literature). In this section, we will see that because of its intimate formal link to aspect/mood marking, voice marking is also paradigmatically organized, despite the fact that it is essentially deriva-

tional. This in turn will provide an important lead for the further systematization of *ma*-words. We begin by reviewing the formal exponents of the aspect/mood alternations in different voices.

It is widely, though not unanimously, agreed that there are four basic voices in Tagalog, i.e. actor voice, patient voice, locative voice and conveyance voice. The latter three share a number of morphological and syntactic properties which makes it convenient to refer to them collectively as undergoer voices. While there is essentially only a single formative for each of the undergoer voices, there are a number of distinct formatives for actor voice. Table 2 lists the major affixes signaling these voices and the alternations marking aspect (perfective vs. imperfective) and mood (realis vs. non-realis). It illustrates only the two most important actor voice formatives, *-um-* and *mag-*. All other actor voice prefixes (e.g. *maN-*) follow the pattern of *mag-* (non-realis *m* alternating with realis *n*).

Table 2. Aspect/mood alternations in different voices for *bilí* 'purchase'

	AV ('buy')	AV ('sell')	PV	LV	CV
NON-REALIS/ PERFECTIVE	b-um-ilí	mag-bilí	bilh-ín	bilh-án	i-bilí
NON-REALIS/ IMPERFECTIVE	bìbilí	mag-bìbilí	bìbilh-ín	bìbilh-án	i-bìbilí
REALIS/ PERFECTIVE	b-um-ilí	nag-bilí	b-in-ilí	b-in-ilh-án	i-b-in-ilí
REALIS/ IMPERFECTIVE	b-um-ìbilí	nag-bìbilí	b-in-ìbilí	b-in-ìbilh-án	i-b-in-ìbilí

As can be gleaned from Table 2 (and also from Table 1), the marking of the aspectual distinction is completely general and transparent: Accented reduplication of the first CV unit of the stem marks imperfective aspect. Perfective aspect remains formally unmarked, regardless of voice.

The formal manifestations of the realis/non-realis distinction are somewhat less transparent and, more importantly, closely linked with voice marking. Thus, while in the undergoer voices, realis is signaled by the infix *-in-*, there is no clear exponent for realis mood in *-um-*actor voice. In *mag-*actor voice, realis/non-realis is conveyed by the alternation between *m* and *n* already familiar from the aspect/mood paradigm for *ma-*.

Not all formations are formally compositional in that each morphosyntactic feature (aspect, mood, voice) is conveyed by a separate formative. Perfective aspect and non-realis mood are actually implicated by the absence of a particular formative. Furthermore, the realis patient voice forms (*binilí*, *binìbilî*) lack a separate voice formative as does the non-realis imperfective form (*bìbilî*) in the *-um*-paradigm.

This lack of formal compositionality is a very important diagnostic for paradigmatic organization. One major principle for paradigms is the principle of constant correlation (Seiler 1966: 197) or proportionality (Uhlenbeck 1985): *binilí* relates to *bilhín* as does *binilhán* to *bilhán*, *magbilí* to *bilhín* as *nagbilí* to *binilí*, etc., regardless of the particular formatives involved. While such correlations may hold both semantically (on the content side) as well as formally (on the expression side), the correlations on the content side are the ones of central importance. They presuppose (or imply) a grid of morphosyntactic features which are always conveyed together: Any given form which is part of the paradigm always conveys the triplet of aspect, mood and voice. There is no way of creating a form which conveys only one of these features. Thus, formations which convey two or more morphosyntactic features and are non-compositional in their formal make-up by their very nature imply paradigmatic organization. Applied to our current example this means that because the aspect/mood alternations remain constant across the different voices and their formal exponence is inherently linked to voice marking, voice itself becomes part of the paradigm. And it is in this sense – and only in this sense – that voice is paradigmatically organized in Tagalog.

There are other diagnostic features of paradigmatic organization, most of which are not met by Tagalog voice alternations. They differ in this regard quite clearly from the aspect/mood alternations. Perhaps most importantly, voice alternations are not general in the same way as aspect/mood alternations. Aspect/mood formations are general, for example, in that for any given aspect/mood formation there are (almost) always three complementary ones (for a major exception, see the next section). Voice alternations are much less regular and predictable. Not many Tagalog lexical bases or derived stems are like *bilí* in that they co-occur with all five voice affixes illustrated in Table 2.[9] Some bases typically occur only in two voice forms, others in three, etc., and while it is possible to make some generalizations about typical patterns based on the semantics of the base and the voice affix there are many exceptions to such patterns (cf. Himmelmann

1987: 129–145). Consequently, one voice form does not imply the existence of another voice form.

Another basic characteristic of paradigms according to Bybee (1985: 50–58) is the existence of a formally and semantically basic, unmarked form. Such a basic form is easily identifiable for the aspect/mood alternations (i.e. non-realis perfective). In contrast, there is no evidence for a basic voice formation from which the other voices are derived.

These differences point to the fact that the voice alternations have more characteristics of derivation than inflection. In particular because of their lack of generality, it is widely believed that they do not form a paradigm. In this view, the concept *paradigm* is limited to *inflectional* paradigms on the assumption that inflectional paradigms are always totally general (i.e. every base subcategorized for the paradigm occurs in all forms considered to be part of the paradigm). But, as Seiler (1966: 197) points out, this is not even true for the prototypical paradigms of Latin. Not every Latin verb has a supine form and not every Latin noun occurs in vocative case. Furthermore, as just stated, the fact that voice marking is formally intertwined with aspect/mood marking in such a way that all three morphosyntactic features always come in a package implies an extended aspect/mood *and* voice paradigm, even though the voice alternations are much less regular and general than the aspect/mood alternations.

This is not to deny that there are significant differences between the two types of alternations. In order to capture these differences, one could say that aspect/mood alternations form an *inflectional paradigm* while voice alternations form a *derivational paradigm.* As opposed to inflectional paradigms, derivational paradigms are characterized by a lack of generality which in turn implies a more important role for semantic and pragmatic factors in accounting for the actually occurring forms (for example, whether a given base occurs in conveyance voice depends very much on the compatibility of the meaning of the base with the meanings of conveyance voice formations).

Importantly, not all derivational formations are paradigmatically organized. To the contrary, derivational formations typically do *not* involve paradigms. A Tagalog example for a typical derivational formation in this sense is the formation of words meaning 'fond of doing X' with *pala-* as in *palasimbá* 'fond of going to church' (base *simbá* 'church'), *palatawa* 'fond of laughing' (base *tawa* 'laugh, laughter'), etc. In this case, the derivation is both formally and semantically fully compositional, there is no need to refer to any other categories than the derivational prefix *pala-* and the bases

it occurs with. Derivational formations which are paradigmatically organized, on the other hand, involve two or more categories, obey the principle of constant correlation along different dimensions and consist of forms which are formally not fully compositional. In the most clear-cut cases, they are formally intertwined with alternations which are clearly inflectional, as just illustrated for the Tagalog voice alternations.

Having made the distinction between inflectional and derivational paradigms, it should be clearly understood that although voice marking may be less general and regular than aspect/mood marking it is still surprisingly productive and widespread when looked at from the point of view of Standard Average European. For example, it is not an exception that an apparently semantically intransitive base such as *lakad* 'walk, gait' allows for all four basic voice formations:

(15) matulin siyáng l**um**akad.
ma-tulin siyá-ng -um-lakad
ST-speed 3.SG-LK -AV-walk
'He walks fast.' (English 1986)

(16) **ni**lakad[10] ng mga bata' ang buóng
-in- lakad ng mangá bata' ang buó' -ng
RLS(UG)-walk GEN PL child SPEC entire-LK
sampúng milya.
sampú' -ng milya
ten LK mile
'The children walked the whole ten miles.' (English 1986)

(17) huwág lakar**an** ang damó.
huwág lakad-an ang damó
NEG.IMP walk-LV SPEC grass
'Don't walk on the grass.' (English 1986)

(18) huwág mong **i**lakad ang bagong
huwág mo -ng i- lakad ang bago-ng
NEG.IMP 2.SG.POSS-LK CV- walk SPEC new-LK
sapatos.
sapatos
shoe
'Don't use the new shoes in walking.' (English 1986)

That is, although for most lexical bases only a subset of voice formations is conventionalized and frequently used, it would appear that almost

all lexical bases have the *potential* to occur in all basic voice formations if the resulting formation "makes sense" in both semantic and pragmatic terms.

The previous discussion provides an important lead for the further investigation of Tagalog *ma-*. There is the possibility that *ma-*formations also participate in one or more derivational paradigms. More specifically, the fact that voice marking is intimately connected with aspect/mood marking suggests the possibility that *ma-* also conveys voice-alternations (recall that Schachter and Otanes (1972) consider some of the uses of *ma-* to be voice alternations). But before exploring this possibility, we have to take into account a further complication: The existence of invariable formations with *ma-*.

4. A further complication: Invariable *ma-*formations

At this point, the pervasive multifunctionality of affixes in Tagalog comes into play once again. All the formatives found in Table 2 also occur in other formations which are *not* inflectable for aspect/mood. There are, for example, formations involving the "patient voice" suffix *-in* meaning 'prone to whatever the base denotes' as in *lagnat-in* 'prone to fever' (< *lagnát* 'fever'), which however unlike "true" patient voice formations do not alternate with **làlagnatin*, **nilagnat*, etc.[11] In the current context, it is of course of major interest that there are a substantial number of *ma-* formations which are not inflectable for aspect/mood.

In addition to appearing on words expressing bodily conditions or emotional states, the prefix *ma-* also appears on words denoting "qualities" (or "properties") when these are used as attributes or predicates (for the time being, this *ma-* is simply glossed with ??):

(19) ang **ma-liít** na hayop
SPEC ??-smallness LK animal
'the small animal.'

(20) ni-lakar-an ko ang **ma-**bató-ng kalye
RLS(UG)-walk-LV 1.SG.POSS SPEC ??-stone-LK street
'I walked on a stony road.'

(21) **ma**saráp ang pagkain
ma-saráp ang pag-kain
??-satisfaction SPEC GER-eating
'the food was good.'

Unlike in examples (1)-(4) above, the prefix *ma-* here is invariable and thus, for example, does not alternate with *na-* in realis perfective contexts as in example (21). Instead, words with invariable *ma-* participate in other alternations such as optional plural marking through *un*accented CV reduplication (see *ma**la**laking* in example (7) above; and see Himmelmann (forthcoming) for a much more detailed discussion of the differences between the two formations).

There are two options for dealing with the interrelationship between variable and invariable *ma-*. First, one could consider invariable *ma-* formations as something completely different from variable *ma-* formations, thus assuming homonymy. This option is chosen in a large number of descriptions of Tagalog where invariable *ma-* is considered an adjective marker (Schachter and Otanes (1972: 198–200) is a prominent example). Alternatively, one could acknowledge the obvious semantic communality that both *ma-* formations denote states and consider invariable *ma-* formations defective members of a single class of *ma-* marked words. This is implied in Bloomfield's solution (1917: 288f) who suggests that invariable *ma-* formations form a subclass of "special static words" within the larger class of *ma-* formations.

We will return to these two options in section 6 below. Here we simply note, that invariable *ma-* formations are not limited to the "basic" form (i.e. *ma-* plus non-reduplicated base). There are also formations which are restricted to the realis form *na-*. Thus, only *na-*, never *ma-*, occurs with locational predicates, which usually consist of *na-* plus a deictic element as in (22) or *na-* plus a prepositional phrase introduced by the general locative preposition *sa* as in (23).

(22) **nàroon** si Magayón
nà-doón si Magayón
RLS.??-DIST.LOC PN Magayon
'Magayon was there.'

(23) semantalang sya 'y **nasa** tabí ng ilog
samantala-ng siyá ay na-sa tabí ng ilog
meanwhile-LK 3.SG PM RLS.??-LOC side GEN river
'When he was close to the riverside, …'

Locationals allow accented reduplication for imperfective aspect although this is infrequently used:

(24) habang sya y nàsàsa loób ng katawán
habang siyá ay nà- RDP1-sa loób ng katawán
during 3.SG PM RLS.??-RDP1-LOC heart GEN body

nitó.
nitó
PRX.GEN
'while he is within the latter's body …' (Bloomfield 1917: 44/1)

Semantically, these locational predicates are closely related to the positional ones in (5)-(7) above. They also convey the aspect/mood value suggested by the formation (i.e. they are in fact realis formations, as indicated in the glosses). Again, there is the problem of how to relate these two formations. Schachter and Otanes (1972: 254–259) stick to homonymy and call them "locative adjective phrases". Bloomfield (1917: 295) lists them together with the positionals without further comment. Given the fact that here aspectual reduplication is possible and that they primarily occur in predicative function, an analysis of locational *na*-marked predicates as defective members of a general *ma*- stative class would seem even more plausible than in the case of the "quality"-denoting *ma*-formations discussed above.

The two types of invariable *ma*- formations just presented are of interest in two regards. First, as noted at the beginning of this section, the co-occurrence of semantically related variable and invariable formations is a feature shared by both voice formations and *ma*- formations. Although this obviously does not provide for a strong argument, it adds to the voice-like characteristics of *ma*-formations. Second, as will be recalled from section 2, there are five different uses of variable *ma*-, i.e. expressions conveying a bodily condition or emotional state, position, perception, involuntary action, and the ability to perform an action. Only two of these, i.e. bodily condition or emotional state and position, have semantically related invariable uses. Again, while this is not strong evidence, it may contribute to an argument for combining the five different uses of variable *ma*- into two higher-level groupings, the first consisting of bodily condition/emotional state and position, the second of perception, involuntary action and ability. As we will see in the next section, there is in fact quite good evidence for the second grouping which can also be paradigmatically related to the voice alternations in Table 2.

5. Extending the paradigm: Potentive vs. non-potentive

The easiest point to start the search for higher-level groupings of inflectable *ma-* formations are the involuntary action and ability uses (examples (9)-(14) above). As already noted in section 2, these two uses are linked by the fact that they overlap more or less completely: Any formation which allows an involuntary action reading (in any of the various senses distinguished in section 2) usually also allows an ability reading and vice versa.[12]

While it is rare crosslinguistically that involuntary and ability uses are conveyed by the same form and far from obvious how they are linked semantically, use of the same formative for both uses is extremely common and widespread in western Austronesian languages, regardless of the shape of the formative (in Acehnese, for example, the prefix *ter-* conveys these meanings, among others).[13] It will thus not come as a surprise that there is a broad consensus in the literature that the involuntary action and ability uses form a single category.

The only problem that actually exists with regard to this category is the appropriate name for it. *Potential*, *aptative* and *volitive* are among the terms that have been used for this category, none of which is really satisfactory in characterizing exactly this set of uses. Here I follow Rubino (1997) in using the new term *potentive* to refer to formations which convey both involuntary action and ability readings.

It is also uncontroversial that potentive *ma-* formations are patient voice forms because they regularly alternate with potentive formations in other voices. Thus we find *maka-* for potentive actor voice as in (25), *ma- -an* for potentive locative voice as in (26), and *ma-i-* for potentive conveyance voice as in (27).

(25) at hindí **maka**baríl sa kanyá
at hindí' maka-baríl sa kanyá
and NEG POT.AV-gun LOC 3.SG.DAT
'(The man got bitten by the ants) and wasn't able to shoot at him.'

(26) kung inyóng **ma**pagtiis**án** iyán
kung inyó -ng ma-pag-tiís-an iyán
if 2.PL.DAT-LK POT-GER-suffer-LV MED
'if you (are able to) endure this …'

(27) **nai**luto ko na
na -i-luto' ko na
RLS.POT-CV-cooked 1.SG.POSS now
'(Good heavens, you will have to say it is not possible to return the rice, because) I already happened to cook it.'

Viewed from the point of view of voice formation, this means that for a given voice, there are always two forms, a non-potentive one involving one of the affixations listed in Table 2 and a potentive one, which always includes *ma* (or *na* in realis mood). This is illustrated for conveyance voice by the following two examples:

(28) a. **ini**luto' ko na ang manók
i -in -luto' ko na ang manók
CV-RLS(UG)-cooked 1.SG.POSS now SPEC chicken
'I already cooked the chicken.'

b. **nai**luto' ko na ang manók
na -i -luto' ko na ang manók
RLS.POT-CV-cooked 1.SG.POSS now SPEC chicken
'I already happened to cook the chicken.'

Note that the overall structure of the two preceding examples is absolutely identical. In particular, there is no change in the number or the marking of the core arguments. The correspondence shown in these two examples is absolutely regular and general: For every voice form denoting a controlled action there is a corresponding form which denotes the involuntary performance or the ability to perform this action. The basic correspondences are listed in Table 3.

Table 3. Potentive and non-potentive voices

	NON-POTENTIVE	POTENTIVE
AV	-um-	maka-
	mag-	maka-(pag-)
PV	-in	**ma**-
LV	-an	ma--an
CV	i-	ma-i-

There is ample evidence that the relation between potentive and non-potentive forms is a paradigmatic one. To begin with, there is a constant

semantic ratio in that *-um-* relates to *maka-* as *-in* to *ma-*, etc., independent of the formal make-up of these forms. In addition, the correspondence between potentive and non-potentive forms is very general. For almost all potentive forms there is a corresponding non-potentive one and vice versa. The alternation between the two formations is also syntactically and semantically absolutely regular: The number and coding of arguments in both constructions is identical and the meaning difference always pertains to ability or lack of control. Furthermore, the potentive/non-potentive distinction constitutes an obligatory choice in Tagalog grammar. That is, there is no neutral way to say 'I broke a glass' in Tagalog. Either I did it on purpose, in which case a non-potentive form has to be used. Or it was an accident, in which case it is necessary to use the potentive form (see also Wolff et al. 1991: 305f). This (part of the) paradigm is thus a truly inflectional paradigm in the sense established in section 3 (Wolff et al. 1991: 284, in fact, speak of *potential inflection*).

The potentive/non-potentive alternation gives us an important diagnostic for the further systematization of the remaining three other uses of *ma-* presented in section 2. In all likelihood, uses of *ma-* which clearly are patient voice formations are also potentive formations. There are two major pieces of evidence for patient voice status: a) the *ma-* formation regularly corresponds to a patient voice formation with *-in*; and b) it allows for the overt expression of an undergoer subject and a non-subject actor marked as a possessive or genitive argument.

These criteria are fully met by perception predicates ('see', 'hear', 'feel', etc.). The following two examples show the base *diníg* 'audible' first in potentive patient voice meaning 'hear' and then in non-potentive patient voice meaning 'listen to':

(29) nang **mà**riníg itò ng Kastila'
nang mà- diníg itó ng Kastila'
when POT.PV-audible PRX GEN Spaniard
'When the Spaniard heard this, …' (Bloomfield 1917: 28/19)

(30) dinggín mo ang maestra.
diníg -in mo ang maestra
audible-PV 2.SG.POSS SPEC female.teacher
'Listen to the teacher.' (English 1986)

Depending on the meaning of the base, it is of course also to be expected that a potentive patient voice formation regularly alternates with other po-

tentive voice formations. The following example shows *diníg* in potentive actor voice:

(31)	at	**nakà**riníg		siyá	ng	mga	huni	ng
	at	nakà-	diníg	siyá	ng	mangá	huni	ng
	and	RLS.POT.AV-audible		3.SG	GEN	PL	chirping	GEN
	ibon							
	ibon							
	bird							

'… and then he heard some birds chirping.'

These examples also make it clear that perception predicates semantically fit the non-potentive - potentive distinction: The potentive forms refer to unplanned, casual, non-directed perceptions, the non-potentive forms to perceptions which are controlled in the sense that attention is consciously directed towards a given input. The major difference between the action predicates such as 'shoot' and 'cook' in (25) and (27) above and a perception predicate such as *diníg* is that the latter usually occurs with potentive affixation, while the former are more frequently found with non-potentive affixation.[14]

The fact that perception predicates appear in two different formations which vary with regard to intentionality or control will not come as a surprise to typologically informed readers. Similar differences are found in languages which have grammaticized the distinction between dynamic (or active) and stative eventualities (see, for example, Mithun 1991). Two points are to be noted here. First, many existing descriptions of Tagalog set up a special verb class for perception predicates, assuming that there is a special *maka-/ma-* inflection for these verbs (e.g. Schachter and Otanes 1972: 288, 296) and thus missing the generalization that there is a highly general potentive/non-potentive alternation for predicates of nearly all semantic classes. Second, as will be seen shortly, potentives including non-directed perceptions are strictly to be distinguished from "truly" stative eventualities in Tagalog.

Unlike perception predicates, the remaining two semantic classes of *ma-* marked expressions, i.e. expressions conveying a bodily condition or emotional state and positional predicates, do not fulfil the criteria for patient voice formations and also fail to show any of the correspondences listed in Table 3 in a regular and general fashion. Instead, they occur in a set of very different alternations, as discussed in the following section.

6. Another paradigm: Stative voice alternations

Prima facie, one would not expect expressions conveying a bodily or emotional condition or state ('hungry', 'angry', 'afraid', etc.) to allow for voice alternations simply because they only have a single semantic core argument, i.e. the one experiencing hunger, anger, fear, etc. But then Tagalog is well known for allowing voice alternations in expressions for what would appear to be semantically intransitive activities, such as 'run', 'dance' and so on, as shown in examples (16)-(18) above. And there are in fact expressions for bodily conditions or emotional states which at least formally appear to be voice-marked. That is, next to *matakot* 'afraid' in (1) there is also ***i****katakot* and *katakut****an***:

(32) ang pagkalunod ng Kastila' ay
ang pag-ka-lunod ng Kastila' ay
SPEC GER-ST-drown GEN Spaniard PM

ikinatakot ng tatlóng magkakaibigan.
i- -in- ka-takot ng tatló-ng magkakaibigan
CV--RLS(UG)-ST-fear GEN three-LK friends

'The drowning of the Spaniard frightened the three friends.' (Bloomfield 1917: 272/24)

(33) **kinatàtakutan** siyá ng mga tao
-in- ka-RDP1-takot-an siyá ng mangá tao
-RLS(UG)-ST-RDP1-fear-LV 3.SG GEN PL people

dito.
dito
PRX.LOC

'People here are afraid of him.'

(34) hindí nilá nàlàláman
hindí' nilá na- RDP1-alam-an
NEG 3.PL.POSS RLS.POT-RDP1-knowledge-LV

kung dapat **katakutan** ang aswáng.
kung dapat ka-takot-an ang aswáng
if should ST-fear-LV SPEC vampire

'they did not know whether a vampire was really to be feared' (Bloomfield 1917: 36/9)

These formations differ quite clearly in form and meaning from the potentive forms reviewed in the preceding section. In place of the prefix *ma-*,

which occurs in all potentive forms, there is another prefix, i.e. *ka-*. Conveyance voice (prefix *i-*) and locative voice (suffix *-an*) marking as well as aspect/mood marking (reduplication, realis undergoer infix *-in-*), however, are the same as in the other paradigms.

Semantically, the conveyance voice form is used when giving the reason on account of which someone experiences a given emotional or bodily state. The locative voice form pertains to the person or thing at which a given emotion is directed. The difference between these two formations admittedly is often rather subtle (as with English 'to be afraid of' vs. 'to be afraid on account of' or 'to be angry because of' vs. 'to be angry with').

What is most important here is the fact that all these formations principally exclude the involvement of an agent, i.e. an entity which is represented as intending to bring about a given state of affairs (and usually also controlling much of the action(s) required for bringing it about). That is, *ikinatakot* or *katakutan* can never ever mean 'frighten' in the sense of someone actively arousing fear in another being. Instead, causes for experiencing a given emotional or bodily state are typically inanimate things or abstract states of affairs. This constitutes the major difference to the potentives. In potentive formations, there always is a potential agent implied even if in the specific state of affairs referred to by a potentive form this agent is presented as not being in full control. Forms referring to states of affairs which principally exclude the involvement of an agent are called *stative* formations, those which principally allow the involvement of an agent, *dynamic* formations.

The distinction between statives and potentives is not just a semantic one. Instead, it also has a number of morphosyntactic correlates which can be most easily shown by contrasting stative expressions with corresponding potentive ones. A particularly clear illustration of the difference is provided by potentive perception expressions since these involve an experiencer rather than an agent in the strict sense and thus are rather similar to expressions for emotional or bodily states which also involve experiencers.

In a stative formation such as *na-galit siyá* 'she was/got angry' the subject (*siyá*) is an experiencer. In a corresponding experiential potentive formation such as *nà-kita siyá* 'she was/got seen', the subject is the stimulus of a perception/visual experience, not the perceiver/experiencer. The perceiver, if overtly expressed, has to be coded as a genitive (*nà-kita siyá* ***ng aso*** 'the dog saw her'). Statives with *ma-/na-*, on the other hand, generally do not allow genitive arguments. If one wanted to add the object of the anger to *nagalit siyá* this would have to be marked as a locative (e.g.

nagalit siyá sa aso ‘she was angry with the dog’). That is, the basic alignments of semantic roles and syntactic functions is very different in potentives and statives even though both formations may denote experiences. Table 4 summarizes the differences.

Table 4. Basic alignments of semantic role and syntactic function in potentives and statives with variable *ma-*

POTENTIVE	STATIVE
SUB = Patient/Theme	SUB = Experiencer/Theme
GEN = Experiencer/Agent	GEN = none
LOC = none (for core arguments)	LOC = Source/Goal/Cause/Stimulus

A further morphosyntactic correlate pertains to actor voice forms. Potentives easily allow actor voice derivations with *maka-*, hence *nakàkita siyá ng aso* ‘she saw a dog’. No corresponding formations exist for statives. In fact, given that statives principally lack agent arguments one would predict that agent voice formations are impossible for statives. This prediction is true in that there is no general and regular actor voice formation for statives. However, it is false in that there are sporadic formations from statives which formally can be classified as actor voice formations because they also involve *maka-*. The base *galit* ‘anger’ is one of the bases which allow a clearly stative *maka-* derivation, *makagalit* meaning ‘to be the cause of anger, to give offence, to irritate’. In contrast to potentive actor voice formations, the subject of a stative *maka-* formation has to be an inanimate cause (some state of affairs or a thing):

(35) lahát ng kanyáng sabihi’y
lahát ng kanyá -ng sabi -in=ay
all GEN 3.SG.DAT-LK statement-PV=PM
nakagàgálit sa akin
naka -RDP1-galit sa akin
RLS.ST.AV-RDP1-anger LOC 1.SG.DAT
‘Everything he says irritates me.’ (English 1986)

Semantically, actor voice statives are difficult to distinguish from conveyance voice statives in that both refer to the cause for a given state. However, they differ syntactically. In conveyance voice, the experiencer is ex-

pressed by a genitive phrase, not by a locative phrase. Compare the preceding example with:

(36) ikinagalit **niyá** akó
i-in -ka-galit niyá akó
CV-RLS(UG)-ST-anger 3.SG.POSS 1.SG
'She got angry at me (I was the reason for her being angry).'

With regard to productivity, the stative actor voice forms are the least common of all stative formations and whenever they occur they often take on somewhat specialized meanings. Thus, for example, *makagalit* is 'irritate, antagonize, give offense' rather than plain 'make angry'. Furthermore, the stative actor voice derivations are often conventionalized in one of the four aspect/mood forms, for example, *naka-àawa'* 'arousing pity, pitiable' (< *awa'* 'mercy, compassion') or *nakàka-litó* (or *naka-lìlitó*) 'confusing' (< *litó* 'confused, at a loss').

Table 5 summarizes the different voice forms for statives. The *ma-* prefix is considered the basic form which is simply glossed as ST(ATIVE). The actor voice prefix *maka-* occurs in parentheses to indicate its lack of productivity and the frequent occurrence of "defective" formations which do not allow aspect/mood alternations. In this regard it should be noted that all stative voice alternations - like all voice alternations in Tagalog - are not fully general in that they are not conventional with every stative base, with the exception that *ma-* occurs on every stative base. In addition to the basic *ma-*form, the conveyance voice forms are the most productive and widespread, occurring, for example, with all bases denoting emotions. Locative voice is distinctly less common.

Table 5. Stative aspect/mood and voice alternations

	ST	ST.CV	ST.LV	ST.AV
NON-REALIS/ PERFECTIVE	ma-	ika-	ka--an	(maka-)
NON-REALIS/ IMPERFECTIVE	ma-RDP1-	ika-RDP1-	ka-RDP1--an	(maka-RDP1-)
REALIS/ PERFECTIVE	na-	ikina-	kina--an	(naka-)
REALIS/ IM-PERFECTIVE	na-RDP1-	ikina-RDP1-	kina-RDP1--an	(naka-RDP1-)

As in the case of both non-potentive and potentive dynamic voice alternations (see Table 3), the inherent link with aspect/mood inflection provides the major formal evidence for the view that the formations listed in Table 5 form a derivational paradigm.

Somewhat more indirect evidence for derivational paradigm status is provided by productive derivational relations between stative and dynamic formations. That is, lexical bases are not limited to occurring in either dynamic or stative formations. In principle, i.e. inasmuch as the resulting formation makes sense semantically and is useful pragmatically, all lexical bases can occur in either paradigm. Hence, there are dynamic derivations from bases typically denoting states and vice versa. For example, *takot* 'fear' – which usually occurs with stative affixations – also allows for dynamic derivations as in:

(37) Huwág mong takut**in** ang bata'.
huwág mo -ng takot -in ang bata'
NEG.IMP 2.SG.POSS -LK fear -PV SPEC child
'Don't frighten/scare the child!' (English 1986)

(38) Sino ang t**um**akot sa iyó?
sino ang -um- takot sa iyo
who SPEC -AV- fear LOC 2.SG.DAT
'Who frightened you?' (English 1986)

And conversely, usually dynamic *putol* 'cut' also allows for stative derivations as in:

(39) **Ika**pùputol ng mga sangá ng kahoy ang
i-ka-RDP1-putol ng mangá sangá ng kahoy ang
CV-ST-RDP1-cut GEN PL branch GEN wood SPEC

malakás na hanging itó.
ma-lakás na hangin-ng itó
ST-strength LK wind-LK PRX

'This strong wind will cause many branches of trees to break off.'
(Bloomfield 1917:272/19)

Consequently, there are constant correlations across dynamic and stative formations (e.g. *tumakot* relates to *ikatakot* as *pumutol* to *ikaputol*, etc.), which in turn suggests that the dynamic and stative paradigms themselves are also in a paradigmatic relationship (see below, Table 6).

Given that lexical bases in principle may occur in either stative or dynamic formations, one major source of the analytical confusions surrounding *ma-* becomes obvious: Stative basic voice and stative actor voice are formally identical to potentive patient voice and potentive actor voice, respectively. This means that formations with *ma-* are inherently ambiguous in that they could be either potentive or stative. In context, ambiguity rarely arises because if an agent is overtly expressed or its participation is clearly implied, the form is unambiguously to be interpreted as a dynamic one. Otherwise, a stative interpretation is the default interpretation.

An interesting borderline case in this regard is the use of *ma-* with inanimate effectors. The following example was presented above (section 2, example (11)) as a subtype of involuntary use or, as we can now say more precisely, potentive patient voice:

(40) ang dahun ay **na**dàdalá ng tubig
ang dahon ay na- RDP-dalá ng tubig
SPEC leaf PM RLS.POT.PV-RDP-carried GEN water

'the leaf was being carried along by the water'

Inanimate effectors, however, are not prototypical agents and one may well question, whether this is indeed an example of potentive patient voice rather than a basic stative. So what is the evidence for analyzing this example as potentive rather than stative? As further discussed in section 5 above, there are two pieces of formal evidence for analyzing a given *ma*-formation as potentive patient voice rather than stative. First, only potentives allow the overt expression of an argument marked by the genitive marker *ng*. Basic statives do not allow genitive-marked arguments but only locative marked ones. Second, an appropriate voice alternation for *madalá* in (40) would involve potentive agent voice *nakàdalá* rather than stative convey-

ance voice *ikadalá*.[15] Both points support the analysis of (40) as an example of potentive patient voice.

The voice alternation test also provides important language-internal evidence for the problem of invariable *ma-* formations. As will be recalled from section 4 above, in addition to the *ma-* formations for bodily and emotional conditions there is also a large class of formations with invariable *ma-* denoting "qualities" (e.g. *ma-liít* 'small', *ma-buti* 'good', *ma-gandá* 'beautiful'). Despite the fact that *ma-* here is invariable (does not alternate for aspect/mood), these formations partake in some of the stative voice alternations listed in Table 5. In particular, most "quality" *ma-* formations allow derivations with *ika-* which occur in all four aspect/moods (they are rarely attested in texts, though). For example, there is *ikaliít* 'get small on account of', *ikabuti* 'improve/get better on account of', and *ikagandá* 'be(come) beautiful on account of'. The following example illustrates the use of *ikagandá* as a main predicate:

(41) ikinagandá ko ang pagtina' ng
i- ka-in- gandá ko ang pag-tina' ng
CV-ST-RLS(UG)-beauty 1.SG.POSS SPEC GER-dye GEN
buhók ko.
buhók ko
hair 1.SG.POSS
'I became beautiful because I dyed my hair (on account of dying my hair).'
(Wolff 1993: 230)

Stative actor voice derivations with *maka-* are also possible with "quality"-denoting bases, as in *makaliít* '(inanimate) cause for someone or something to become small(er)', *makagandá* '(inanimate) cause for someone or something to become beautiful', or:

(42) Nakabuti sa kanyá ang gamót.
naka- buti sa kanyá ang gamót
RLS.ST.AV-goodness LOC 3.SG.DAT SPEC medicine
'The medicine benefited him (did him good).' (English 1986)

Locative stative voice derivations with *ka--an* do not occur with these bases, probably because there is a very productive homophonous derivation denoting abstract qualities (e.g. *kaliitán* 'smallness', *kabutihan* 'goodness, kindness', *kagandahan* 'beauty'), which does not belong to the stative voice paradigm.

The fact that invariable *ma-* formations partake in stative voice alternations lends further support to the analysis of invariable *ma-* as a defective

member of a single stative *ma-* paradigm rather than considering it a homonymous formation totally unrelated to variable *ma-* formations.

7. *ma-* and the basic categories of Tagalog verbs

We are now in a position to give a more precise account of the different uses of the prefix *ma-* and its place within the overall system of Tagalog affixes. To begin with, variable *ma-* formations belong to the class of Tagalog words which are inflectable for aspect/mood. These words can be called *verbs* for short, provided it is clearly understood that this class is defined primarily by its morphological characteristics and thus differs in many regards from verbs in other languages (see Himmelmann (forthcoming) for further details).

Like all words in this class, variable *ma-* formations are voice-marked and allow for voice alternations. More specifically, *ma-* formations partake in *two* different voice paradigms, being either patient voice potentives or basic statives. Potentives and statives differ not only in terms of their semantics – potentives denote dynamic eventualities, statives states – but also with regard to argument structure: Potentives, at least underlyingly, involve an agent or effector, statives don't.

The analyses advanced in the preceding sections imply an elaborate system of basic verbal affixations, summarized in Table 6. In addition to aspect/mood inflection, this system involves distinctions with regard to voice, dynamicity (dynamic vs. stative) and control (potentive vs. non-potentive). It is paradigmatically organized in that each form conveys a fixed set of morphosyntactic features, obligatorily choosing one feature from each of the basic dimensions aspect/mood, voice, dynamicity and control. That is, a form such as *i-lakad* 'walk with, use in walking' is not just the conveyance voice form of *lakad*, it is the dynamic, non-potentive, non-realis, perfective conveyance voice form of *lakad*.

Table 6 basically collapses the information given in Tables 2, 3 and 5. For the sake of clarity, aspect/mood alternations have not been included (see Tables 2 and 5). That is, strictly speaking each formative in Table 6 represents a set of four derivations. For example, *-an* represents BASE-*an*, RDP1-BASE-*an*, *-in*-BASE-*an* and *-in*-RDP1-BASE-*an*.

Table 6. Major affixations for Tagalog verbs (= aspect/mood inflectable words)

	DYNAMIC		STATIVE	
	NON-POTENTIVE	POTENTIVE		
AV	-um-, mag-	maka-	(maka-)	ST.AV
PV	-in	**ma-**	**ma-**	ST
LV	-an	ma—an	ka--an	ST.LV
CV	i-	ma-i-	ika-	ST.CV

The aspect/mood and control alternations form inflectional paradigms, for two reasons. First, they are highly general, each formation implying the existence of the complementary one(s) (i.e. a non-potentive forms implies the existence of a potentive one, etc.). Second, there are clearly unmarked or basic forms for these alternations (non-realis perfective for aspect/mood, non-potentive for control). The voice and dynamicity alternations, on the other hand, show derivational features in that they are less general, less productive and exhibit quite a few formal and semantic idiosyncrasies. Still, they are also paradigmatically related to each other because of the constant correlations holding across all cells of Table 6. In section 3, the term *derivational paradigm* was introduced to capture both their derivational features and their paradigmatic relatedness.

The analysis of Tagalog verbal affixes proposed here accounts for the large majority of the uses of the affixations listed in Table 6. But there are a number of minor quirks and additional complications, just one of which I briefly mention here.

As shown with examples (5)-(7) above, positional predicates with *ma-* do not only mean being in a given position but also getting oneself into a given position. For example, *maupó'* does not only mean ‘be seated’ but also ‘seat oneself, sit down’. This second meaning is somewhat unexpected in that ‘sit down’ clearly involves an agentive argument.[16] Not surprisingly then, there is also a dynamic form *umupó'* ‘sit down, sit on’. It is hard to tell whether there is a real semantic difference between dynamic *umupó'* and stative *maupó'* in the reading ‘sit down’. In fact, the two forms are interchangeable in many contexts. Thus, both *maupó' kayó* and *umupó' kayó* are used for ‘sit down!’ (imperative). Note that the two forms differ in their other readings. Only *maupó'*, but not *umupó'*, also means ‘be seated’. And in contrast to stative *maupó'*, dynamic *umupó'* also means ‘sit up (as when getting up from bed)’.

Similar "surprises" occur with a number of other bases. But they are always limited to a fairly small, semantically well defined class of bases and thus, in my view, do not put into question the basic system for Tagalog verbal affixations proposed above.

This system allows us to systematize the different uses of variable *ma-* reviewed in sections 2 and 4. These can now be seen to fall into two higher-level categories, potentive and stative, as detailed in Table 7. Note that this higher-level distinction is based primarily on language-internal evidence (different voice alternations, different argument structure, etc.) and is not simply an instantiation of a putatively universal scheme.

Table 7. The distribution of the different uses of *ma-* with regard to the DYNAMIC vs. STATIVE distinction

DYNAMIC (POTENTIVE)	STATIVE
perception predicates (examples (8), (29)-(31))	bodily condition/emotional state (examples (1)-(4))
involuntary action predicates (examples (9)-(11))	"qualities" (examples (19)-(21))
ability (examples (12)-(14))	positional and locational predicates (examples (5)-(7), (22)-(24))[17]

Viewed crosslinguistically, Tagalog is somewhat remarkable in making a rather strict distinction between statives proper (eventualities which principally exclude the involvement of an agentive argument) and potentives (eventualities which principally include an agentive argument which however lacks control). In most languages in which a dynamicity distinction is grammaticized, there is a simple binary opposition between dynamic and stative formations, with most of the eventualities requiring potentive forms in Tagalog being expressed by stative forms.[18] This may be one reason why the distinction between statives and potentives as basic, paradigmatically opposed categories of Tagalog verbal affixations has been missed so far.

Another reason for this failure pertains to the fact that the forms in the two paradigms partially overlap. In particular, the two forms which only consist of the prefix *ma-*, i.e. patient voice potentive and basic stative voice,

are very hard to distinguish semantically. The only way to distinguish them is syntactic, via the overall construction in which they occur and the voice alternations allowed for by this construction, as illustrated with example (40) above.

A third reason resides in the peculiar nature of derivational paradigms. While lacking the generality and productivity characterizing inflectional paradigms in, for example, European languages, derivational paradigms are paradigms in that they obey the principle of constant correlation along different dimensions. They typically consist of word forms which are formally not fully compositional, thus often inherently linking inflectional (e.g. aspect) and derivational (e.g. voice) features. Tagalog voice and dynamicity alternations provide two examples for such paradigms.

Inasmuch as the preceding analysis of Tagalog *ma-* (and Tagalog verbal affixations in general) is more convincing and useful than previous ones, it suggests that the search for derivational paradigms is an important heuristic in dealing with multifunctional affixes. These paradigms, or more precisely, the morphological and morphosyntactic evidence on which they are based, may provide the major language-internal evidence for a conclusive and empirically challengeable systematics of the different uses and functions of such affixes. This is of particular interest in those instances where semantic reasoning or syntactic distribution fail to provide conclusive evidence, which often tends to lead to the application of a putatively universal systematics (which more often than not is a systematics based on English translations).

Notes

1. In addition to Totanes and Bloomfield compare, for example, Marre (1901), Blake (1925), Wolfenden (1961), Ramos (1971), Schachter and Otanes (1972), Llamzon (1976), DeGuzman (1978), and Shkarban (1995).
2. One consequence of this state of affairs is that in every single case a decision is required of whether or not to apply the grammatical terminology established in the description of Standard Average European to a given phenomenon in Tagalog. The alternative is the creation of new, often idiosyncratic terminology by reinterpreting standard terms (e.g., *focus* instead of *voice*, *topic* for *subject*) or creating new ones (e.g. *trigger* for *subject*, *transient word* for *verb*). The present contribution is terminologically conservative, opting in most cases for the use of traditional terminology. I make no attempt to defend the basic analysis or the terminology chosen here with regard to the many

controversial topics in Tagalog grammar. For further discussion and references, see Himmelmann (1999, forth.).

3. The author himself has for a long time failed to see the differences between the two paradigms clearly and has tended to gloss all uses of *ma-* simply as stative.
4. The point that dynamicity is of fundamental importance to Tagalog grammar has been made in previous work, most clearly in Drossard (1984) who claims that Tagalog is a language of the "active" type in the sense of Klimov (1977). Drossard (1983, 1994) also proposes a systematization of Tagalog verbal affixations which attempts to integrate stative and dynamic affixations, but this systematization differs significantly from the one proposed here for a number of reasons, most importantly because it fails to recognize that apparently stative forms belong to *two* distinct paradigms. Note also that the need to distinguish dynamic from stative formations in western Austronesian languages has been pointed out repeatedly since Bloomfield (1917). But following Bloomfield's example, there has always been the tendency to relegate the stative formations to the secondary or minor derivations, thus missing the paradigmatic relationships between stative and dynamic formations.
5. This chapter can also be read as an argument for the need to extend the WORD-AND-PARADIGM approach to an apparently agglutinative language. There is no space to address this issue in detail but it should be obvious that inasmuch as the analysis of Tagalog "verbal" affixations presented here is more successful than previous ones, it also can be used for making a case for the use of paradigms in describing an apparently agglutinative language.
6. Paragraphs 438–441 deal with both variable and invariable *ma-*, paragraphs 463–466 with variable and invariable *mà-*. That is, strictly speaking Bloomfield deals with *ma-* (as understood here) in two different places because his description is rigorously form-based such that all derivations involving *ma-* (including ones with further affixes which have not yet been mentioned here) precede all derivations with *mà-*. Although the two affixes are formally clearly different (*mà-* is pronounced with a very clearly lengthened vowel), there does not appear to be a semantic difference consistently linked to this formal difference. Schachter and Otanes (1972: 330) state that some speakers use *ma-* with ability verbs and *mà-* with involuntary action verbs. "Other speakers, however, … either do not make this distinction, or do not make it consistently." Similarly, Bloomfield associates *ma-* primarily with ability (§438) and *mà-* primarily with involuntary action (§463), but he also lists involuntary action uses for *ma-* (§440) and ability uses for *mà-* (§464). And for the other usage types of *ma-/mà-* he notes that "there seems to be no abstract principle clearly separating" the two formations (1917: 294; see also §466a). Wolff et al. (1991: 285) concur that "for all intents and purposes" *ma-* and *mà-* have "the same meaning". Given that the uses of *ma-* and *mà-* over-

lap completely for some speakers, and for others to a large degree, it would appear to be warranted to abstract from their formal differences, as it is done in most descriptions of Tagalog. This is not to deny that there may be important, but yet undetected differences associated with these two variants. But it is most likely that these differences are of a sociolinguistic nature. It is also quite likely that the two variants have distinct historical origins and were both formally and semantically distinct at an earlier stage in the history of Tagalog. Note in this regard that *ma-* and *mà-* are not in free variation (in a given dialect). Students of Tagalog have to learn which affix (usually) goes with which base, usage of the wrong formative yielding unidiomatic, but still understandable Tagalog.

7. In order to simplify the discussion, the enclitic genitive *s* is not included in this brief illustration. Not to mention the further complications that arise when one attempts to include the uses of *-s* as a marker for diminutives or irony discussed by Mühlhäusler (1983).
8. Grammar writing practice deviates here markedly from textbook practice. In Wolff et al.'s (1991) textbook, for example, liberal use is made of paradigms. This could be considered to be a merely pedagogical device with little support in the descriptive facts. But as Wolff (1993) makes it clear, he considers the paradigm a major construct in the descriptive grammar of Tagalog and other western Austronesian languages, a view further defended and extended here (see also Uhlenbeck 1985).
9. Voice-affixed forms of *bilí* are widely used as examples for Philippine-type voice or "focus". The discussion of these examples more often than not is incomplete and thus misleading. Among the more important points which are usually not mentioned are the following two.

   First, the derivational paradigm for *bilí* is quite exceptional. There are no other lexical bases in Tagalog which allow exactly the same kinds of derivations (and only very few which allow a similar number of derivations; see also Himmelmann 1987: 66f and 1999: 239FN11). Wolff et al. (1991: 1185–1190) provide a very instructive survey of derivations from *bilí* using naturalistic examples, which shows that its derivational possibilities are in fact much more complex than suggested by the discussions in the syntactic and typological literature.

   Second, the bare base *bilí* can be used all by itself, in three different senses. Like many other Tagalog "action" bases (cp. Himmelmann, forthcoming), unaffixed *bilí* can be used as the name for an action, i.e. 'act of buying, purchase', and to denote a (post-)state 'bought, paid for' as in *ang manók na bagong bilí* (SPEC chicken LK recent:LK bought) 'the chicken recently bought' (cp. Bloomfield 1917: 308/26). The third meaning, 'purchasing or buying price', is unexpected and underlines the exceptional nature of this base (an ex-

ample is *Magkano ang bilí mo diyan* (how.much SPEC buying.price 2.SG.POSS MED.LOC) 'How much was your buying price of that?' (English 1985)).

10. The realis undergoer infix *-in-* regularly becomes prefixed *ni-* with /l/-initial bases.
11. More often than not there are segementally identical patient-voice formations which are aspect/mood inflectable and sometimes differ in accentuation from the non-inflectable ones. Compare uninflectable *lagnátin* 'prone to fever' with inflectable *lagnatín* 'to have fever'.
12. As noted above, in some instances the two readings are distinguished suprasegmentally, unaccented *ma-* typically conveying an ability meaning, accented *mà-* an involuntary one.
13. Outside of western Austronesian, there are a few other formations which convey both involuntary action and ability, including the *involitive* in Sinhala (Inman 1993) and *out of control* morphology in Salishan languages (cp. Davis and Demirdache 2000).
14. As a matter of fact, the lexical semantics and the morphosyntax of perception predicates in Tagalog are more complex than the preceding remarks may indicate. Unlike many other western Austronesian languages, Tagalog offers not only a morphological means of expressing the difference between casual, non-directed and intentional, directed perception but also (like English) a lexical one: Next to *diníg* 'audible', which usually occurs with potentive affixation, there is *pakiníg* 'listen' which usually occurs with non-potentive affixation. In the case of *kita* 'seen', non-potentive derivations appear to be morphologically blocked by the occurrence of non-potentive derivations from the homonymous root *kita* 'earnings' (hence *kumita, kitain* 'to earn, to gain'). Here *panoód* is the unmarked base for 'look at, watch' which like *pakiníg* of course also allows potentive derivations (*mapanoód, makapanoód*, etc). In this system, it is possible to convey fairly subtle differences such as the difference between 'to see something' vs. 'to happen to look at something'.
15. This needs further research as native speakers are not in full agreement on this issue. Only some of them judged *nakadalá ng dahun ang tubig* acceptable, usually with some reluctance. Others rejected it and all other alternations offered (for example, with *nagdalá* or *ikinadalá*). Clear-cut examples from natural discourse which could resolve the issue have not yet been identified.
16. Bloomfield (1917: 285) notes with regard to *maupó'* and *mahigá'* 'lay down': *ma-* is used "strangely enough, for two voluntary actions which consist of a relaxing of the muscles."
17. As just mentioned, the place of positionals and locationals in this distinction is not quite straightforward. Their placement here in the stative column is tentative.
18. In this regard, it may be of interest to note that the potentive uses appear to be innovations while the stative uses can be reconstructed for Proto-Austronesian

(see Zobel (to appear) for further details). Furthermore, there is some evidence for the view that the formative *ma* derives from **k-um-a-*, i.e. the prefix *ka-* (which is also found in other stative voices) plus the infix *–um-*. Deletion of the initial syllable of polysyllabic affixes is widely attested throughout the family (another example is the dynamic actor voice *mag-* which probably derives from **p-um-ag-*).

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Abbreviations

ACT	ACTOR
AV	ACTOR VOICE
CV	CONVEYANCE VOICE
DAT	DATIVE
DIST	DISTAL
GEN	GENITIVE
GER	GERUND
IN	INCLUSIVE
IMP	IMPERATIVE
LK	LINKER
LOC	LOCATIVE
LV	LOCATIVE VOICE
MED	MEDIAL
NEG	NEGATION
PL	PLURAL
PM	PREDICATE MARKER
PN	PROPER NOUN

POSS	POSSESSIVE
POT	POTENTIVE
PRX	PROXIMAL
PV	PATIENT VOICE
RLS	REALIS
RDP	REDUPLICATION (numbers indicate different formal types of reduplication)
SG	SINGULAR
SPEC	SPECIFIC ARTICLE
ST	STATIVE
UG	UNDERGOER

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The interplay of synchronic and diachronic discovery in Siouan grammar-writing

Robert L. Rankin

1. Introduction

The study of language typology is often justified on the basis of the fact that it tells us where to look for missing parts when our data are insufficient to elucidate one or another point of grammar or phonology in either synchronic or diachronic studies of a language. A relatively small sample can provide a kind of snapshot of the language and give us an idea of the types and orderings of structures we may expect to find. It is widely accepted that every field investigator should be familiar with the findings of typology. But work within a particular genetic group of languages can be aided even more by overt language comparison within the family. Related languages nearly always share a great deal more structure than universal grammar provides. So the field worker and synchronic grammar writer must be familiar not only with typology but with the comparative method and all that is available in the way of historical and comparative phonology and grammar within the language family he or she is studying.

Oddly, this fact has not always been so well accepted for two very different reasons. First, outside of the languages of Europe, classical languages of the Near East, Chinese, Japanese, and perhaps a few others, most language families have lacked solid comparative work. And second, the use of comparative data in synchronic studies was often felt somehow to violate the Saussurian prohibition against mixing synchrony and diachrony, itself a reaction to some of the excesses of nineteenth century grammar.

By now the first of these difficulties is alleviated by the fact that at least some comparative work has been undertaken in nearly every language

family. The second difficulty is in many ways more serious in that it involves the basic attitudes and trends in educational priorities and training of modern linguistic scholars. It should be obvious that the use of comparative data in field work can no longer be problematic for synchronists if the use of such data relates to methodology, not necessarily description, but if a linguist has never mastered, or perhaps even been exposed to, comparative linguistic methodology, he or she cannot even take of advantage of what comparative studies exist. And this unfortunate state of affairs seems increasingly to be the case, at least in the United States. The excuse most often proffered for ignoring diachronic data and study is a Bowdlerized version of the Saussurian dictum. It runs something like this: "little children learning their native language don't have access to comparative data, so we theoreticians no longer have to deal with such things, and grammars shouldn't incorporate any such information." This is nonsense, of course. The linguist's understanding must be informed from all available sources; how she or he may later choose to constrain a formal statement is a completely distinct matter.

Virtually all linguistic analysis is comparative in nature; one arrives at answers by comparing and contrasting one phoneme, morpheme, word, or syntactic pattern with others, usually in the same language. But comparison of like units in related languages, i.e., explicit use of the Comparative Method during field work and subsequent analysis, greatly advances insight into phonology and grammar while providing easy access to cognate vocabulary. Overt comparison helps identify linguistic elements at all levels of analysis and often extends to particular processes, constraints and uses/semantic ranges of grammatical morphemes. Obviously, matches between languages are often incomplete and occasionally even misleading, as change is a given in all linguistic systems, but even when innovation, loss or merger has occurred, there nearly always remains, within the range of constructions, those that will have to be explained in terms of pre-change function or meaning. Comparison of related languages is never a fruitless undertaking.

However, these indispensable comparative tools are scarcely even mentioned in most of the textbooks and handbooks dedicated to field methodology. One searches in vain for such helpful information in, for example, Samarin (1967), Burling (1987), or Bouquiaux and Thomas (1992). Many grammarians seem completely seduced by the myth that "you have to have a good description of a language before you can undertake comparative or historical work." This must have seemed logical at one

time, but in fact it is untrue. Linguistic comparison and synchronic analysis are complementary and spiral processes; one constantly moves back and forth between them, refining each as one goes along.

Even introductory linguistics textbooks generally pay only lip service to historical and comparative work. Typically, a passage contrasting Old and Modern English, a smattering of social dialectology, and a passing mention of Grimm's Law, with the implication that the comparative method relates more to the history of linguistics than to the discipline as it exists in the present, is about all students see. Perhaps this just reflects the experience of the textbook authors, but even textbooks in historical and comparative linguistics generally neglect to point out the usefulness of the historical methodologies in synchronic analysis.

Methodology, although de-emphasized and in some instances even denigrated since 1960, is quite important in field work (and, it should go without saying, in other branches of linguistics as well), and the comparative method is among the most powerful of techniques available to the investigator of unattested languages. Contrast the picture presented by the textbooks with the actual practice of the great field linguists and grammar writers of the twentieth century. One has but to glance at the work of Bloomfield, Sapir, Haas, Dixon or Hale to see the positive influence of diachronic study. They always acknowledged the importance of comparative work, but the example that they set has not always been taken to heart.

2. Contemporary field linguists

Even though overt exposition and recommendation of comparative and historical analyses as field work aids are seldom found, the best contemporary field linguists are quite open about both using and praising them; they simply take for granted that every researcher knows and understands the utility of such study. Ken Hale (2001: 81–84), in his discussion of field work on the Ulwa language of Nicaragua, emphasizes that,

> My attitude to the notion 'linguistic field methods' or the notion 'what one should do in linguistic field research' is this: Do whatever you need to do in order to learn the language. […] setting oneself the goal of learning the language […] has the effect, […] of virtually guaranteeing adequate coverage.

> If one accepts as valid the strategy just mentioned, this will determine, to a large extent, the planning one does in preparing oneself linguistically for the actual field-work. […] In my case, I had available the works of Lehmann (1920) and Conzemius (1929), consisting of comparative vocabularies, with grammatical notes, in [two related languages] Sumu and Miskitu.
>
> They permitted me to gain a basic understanding of Sumu verbal and nominal morphology, to begin acquiring a basic vocabulary of Ulwa, and to form an initial conception of internal relationships within the Sumu subfamily, as well as relation-ships between Sumu and other Misumalpan languages.

Hale goes on to describe the work on the related languages and how it simplified his early elicitation. Lehmann's knowledge of vocabulary concepts appropriate to Central America spared Hale

> an enormous amount of labor in the preparatory stage; and the initial work of Conzemius in documenting the nominal and verbal morphology of the Misumalpan languages was also instrumental in getting me to a position – in advance of my first trip – at which I could easily understand 'what was happening' in the very first sentences I elicited for Ulwa. It would have been a serious mistake not to utilize the early work of these excellent scholars – the speed with which actual fieldwork on Ulwa was able to proceed owes much to their contributions to the linguistics of the Atlantic Coast.

Hale naturally insisted on checking and rechecking all of the earlier work, but his research had made him aware of "certain facts about the Misumalpan languages which told me *in advance* [emphasis mine – RLR] that certain forms would have to be collected for each lexical item in order to document it properly." [1] Comparative linguistics was simply something that, for Hale, one automatically used both in preparation for, and in, the field.

Dixon was less explicit about precise use made of comparative materials in his work in northern Queensland (earlier, serious work there by linguists was rare), but he mentions them many times (1984: 64–65, 127–129, 173, 230–231). Dixon (2000: 4) compares working on Austronesian and Papuan languages:

> Describing a new Oceanic language is like filling in the spaces on an established linguistic grid, and adding a few unexpected spaces for a few language-specific features. In contrast, the Papuan languages of the Solomons are not known to be related to any already-described languages.

> Describing a new Papuan language is like establishing a new linguistic grid, and then filling in the spaces on it.

He makes it clear that he believes the former task to be considerably easier: Comparative grammar informs us rather precisely what we should expect to find.

Numerous other scholars are more general, e.g., Rice (2001: 248): "it is necessary to embrace all sources of material and learn from them, but at the same time to treat them with necessary skepticism", while Payne (1997: 15) writes:

> It is very important to be aware of *all* work that has been done on a particular language or language family. […] You should become thoroughly familiar with all historical/comparative work done on the language and/or its family. There are few language families for which no previous work exists. Diachronic and comparative observations will then inform the grammatical description at every point, and you will have a good idea where your own work fits within the general scheme of investigation on this language.

Hyman (2001: 26–27), certainly a prominent figure in linguistic theory over the years, is especially enthusiastic about comparative work, repeatedly emphasizing its usefulness for understanding how languages "manipulate parameters in their treatment of tone, direct object properties, anaphors, etc. What I particularly like is to focus on an area where different languages resolve 'conflicts' in different ways."

3. Siouan linguistics

The remainder of this paper illustrates the utility of comparative linguistics in field work and grammar production with three case histories from the Siouan linguistic family studied for more than twenty five years by the author. Two relate to phonology and one to morphosyntax. Siouan provides a good testing ground for the idea that comparative work is just as useful to linguistic field work and grammar writing as field work and description are to later comparison, i.e., that the two forms of research can and should proceed hand-in-hand. A native North American family, Siouan has not been done to death, and continuing field work is still a necessity if we are to gain full understanding of the languages comprising it. There are

reasonably good grammars and dictionaries for fewer than half of the languages in the family.

Comparative work has proceeded slowly; there are two surveys of comparative Siouan (mostly phonology) either published (Wolff 1950–1951) or available as doctoral dissertations (Matthews 1958). Both of these utilized primarily unpublished word lists and texts recorded in the nineteenth and early twentieth centuries by a variety of scholars, most of them talented amateurs, a few, trained anthropologists. All suffer from transcriptional errors of various sorts. Added to these is the truly expert grammar of Dakota by Ella Deloria and Franz Boas (1941). The present chapter is informed by an unpublished comparative dictionary (Carter, Jones and Rankin, in preparation).

The Siouan languages fall into four major subgroups. Individual language names are italicized; two-letter abbreviations are assigned to some for later use. Extinct languages are marked with the symbol †:

I. Missouri River Siouan: *Crow* (CR), *Hidatsa* (HI)
II. *Mandan* (MA)
III. Mississippi Valley Siouan:
  a. Dakotan (DA) *Santee-Sisseton, Yankton-Yanktonai, Teton, Assiniboine* (AS), *Stoney* (ST)
  b. Chiwere-Winnebago (CH) (WI) *Ioway, Otoe, †Missouria; Winnebago*
  c. Dhegiha *Omaha-Ponca* (OP), *†Kansa* (KS), *†Osage* (OS), *†Quapaw* (QU)
IV. Ohio Valley Siouan: *†Tutelo* (TU), *†Saponi, †Moniton; †Biloxi* (BI), *†Ofo* (OF)

The first case history deals with a morphophonological phenomenon that has perplexed specialists in the Dakota language for many decades.

3.1. Dakotan ablaut

All Siouan languages for which we have morphological data show active or strong trace evidence of an alternation between stem-final vowels *-e* and *-a*. Certain forms in a paradigm will have the one vowel and certain other forms in the paradigm of the same verb, the other vowel. The alternation is rather regular, in most of the languages it most often affects verbs exclusively, and the stem final vowels which alternate are most often, but

not always, unaccented. The problem is that, in Dakota, the best-attested Siouan language (and frequent model for Siouan grammars), certain verbs undergo the process while others do not. In the following examples *make* shows the stem-final vowel unaccented and ablauting, *go* is accented and ablauting, while *spill* is accented and non-ablauting, i.e., invariant.[2]

(1)		make	spill	go
	verb stem:	*káɣ**a***	*kal**á***	*y**á***
	plural:	*káɣ**a**pi*	*kal**á**pi*	*y**á**pi*
	negative:	*káɣ**e**šni*	*kal**á**šni*	*y**é**šni*
	habitual:	*káɣ**a**šna*	*kal**á**šna*	*y**á**šna*
	adverbial:	*káɣ**e**ya*	*kal**á**ya*	*y**é**ya*
	interrogative:	*káɣ**a**he*	*kal**á**he*	*y**á**he*
	as if:	*káɣ**e**sʔe*	*kal**á**sʔe*	*y**é**sʔe*
	whenever:	*káɣ**a**kheš*	*kal**á**kheš*	*y**á**kheš*

So in Dakota, of the many stems that end in *-a*, some are invariant; they always have *-a* and never alternate with any other vowel. Other verbs, like *make* and *go,* alternate *-a* with *-e* preceding certain suffixes or enclitics.[3] The replacement of *-a* with *-e* is called *ablaut* because of the perceived difficulty of specifying any clear phonological conditioning for the alternation. There is nothing in the immediate environment that allows one to predict it. For example, Dakotan verbs followed by the particle *-šna* 'habitual' require the opposite vowel from those followed by *-šni* 'negative', and no appeal to any sort of vowel harmony is productive (Shaw 1980). Syntactic conditioning factors have also been considered and rejected.[4] Each verb that ablauts must therefore be marked as an alternating stem. Moreover, the list of verbs that engage in ablaut differs slightly from dialect to dialect in Dakotan, as does the extensive list of particles that seem to trigger it.

While there is an analog of ablaut in virtually every Siouan language, in other Mississippi Valley Siouan languages there is a big difference. In the other languages it is not an underlying *-a* which becomes *-e* conditioned by some inexplicably complex list of lexical environments. Rather it is an underlying *-e* which is replaced by *-a*. And in these languages the environments in which substitution takes place are few, and most often one can see at least remnants of clear phonological conditioning. That the reconstructed final vowel in ablauting verbs was *-e* can be seen in the following cognate sets.

(2)

	make	ripe	die	go
Proto-Siouan (PS)	**ká•xe*	**aRú•te*	**tʔé•re*	**ré•he*
Hidatsa (HI)	*-kaáxe*	*óote*	*teé*	*rehe*
Dakota (DA)	*káγ**a***	*lút**a***	*tʔ**á***	*y**á***
Chiwere (CH)	*gá•xe*	*dú•ǰe*	*čʔé•*	*ré•*
Omaha-Ponca (OP)	*gá•γe*	*ní•de*	*tʔé*	*ðé*
Kansa (KS)	*gá•γe*	*ǰå•ǰe*	*čʔé*	*yé*
Biloxi (BI)		*atutí*	*té(-di)*	*dé(-di)*
Ofo (OF)		*atúti*	*əthé*	*te-*
Tutelo (TU)			*te•*	*alé•-*

Assuming from uninflected citation (third person singular) forms that Dakota preserved the original vowel, linguists have tried to discover the phonological cause of ablaut for over fifty years without success. The reason for the lack of success quickly becomes clear the moment comparative evidence enters the picture.

In Quapaw, and other languages of the Dhegiha subgroup, ablaut is found when forms with the underlying, final *-e* precede any of four postposed grammatical morphemes, 'plural, negative, imperative' and as a special case, 'continuative'. All four of these particles had an initial *a-*, and it was this vowel that replaced the stem-final *-e* of the preceding verb: *-e* + *a-* yielded *a*. So it was indeed originally a phonological process and an automatic alternation.

Take for example the Quapaw imperative, which has the form *-a*. The post-posed *-a* always replaces a preceding short *-e*. These examples of imperatives are from Dorsey (1890–94) and the author's field notes:

(3) *íkazo* 'to draw, write'
*ikazo-**á*** 'draw/write!'

(4) *daxǫ́* 'to break by mouth'
*žąžika daxǫ-**á*** 'bite the twig in two!'

(5) *stád**e*** 'to grease something'
*stad-**á*** 'grease it!'

(6) *d**é*** 'to go, be going'
*d-**á*** 'go!'

The next environment illustrating the origins of ablaut is the plural suffix. In Quapaw it is *-awe* for women and *-awi* for men; in Dakota it is analyzed as *-pi*, but the immediately preceding verb always has the *-A* grade of ablaut. Dakota *pi* corresponds regularly to Quapaw *wi*. Quapaw examples with *-e* stem verbs (where *a* of the plural marker remains) and then with other stems (where it is lost) are shown below:

(7)	*d**é***	‘to go, s/he goes’	(8)	*dath**é***	‘to eat’
	*d**á**we*	‘they go’		*kdath**á**we*	‘they ate their own’

(9)	*knį*	‘to sit, camp’
	knįwi	‘they camped’

The negative morpheme, which has the form **-aži* for men and **-aže* for women throughout the Dhegiha subgroup shows the same alternation. Examples from Quapaw include:

(10)	*šík**e***	‘to be bad’	(11)	*dé*	‘s/he went’
	*mažą́ šik-**a**ži*	‘pre-war (lit. land bad-not)’		*d-**á**ži*	‘s/he didn’t go’
(12)	*kdí*	‘he came back’	(13)	*sísi*	‘s/he is active’
	kdí-ži	‘he had not come back’		*ąsísi-ži*	‘I am not active’

The older form of the negative and plural affixes or clitics is easily reconstructed from the following cognate sets, and their initial *a-* is clear, especially in the Crow, Hidatsa and Dakotan forms that appear as separate words. *A* is the symbol used by Dakotanists on verb stems that undergo the *a*-grade of ablaut.

(14)		negative		plural	
	PS	**aši*		**ape*	
	CR			*áappaa*	‘with’
	HI			*aapi*	‘with’
	MA	*a-xi*			
	DA	*(-A)-š*	‘adversative’	*(-A)-pi*	‘pl’
	DA	*(-A)-š-ni*		*apa*	‘some’
	AS, ST	*-šį́*		*(-A)-bi*	‘pl’
	CH, WI	*š-kų́-ñì*		*-awi*	‘definite pl’
	OP	*-aži*		*-abe*	‘pl’
	KS	*-aži*		*-abe*	‘pl’
	OS	*-aži*		*-ape*	‘pl’
	QU	*-aži*		*-awe*	‘pl’
	BI	*ačí*	‘Oh, no!’		

Let us now examine Dakotan alongside Dhegiha to summarize the parallels. Shaw (1980: 134) lists the Dakotan enclitics which require the *–A* ablauted form of the verb; among them are those affixes or clitics that have initial *a-* in Dhegiha.

(15)		Dakota	Common Dhegiha
	plural:	(verb stem)-*A*-*pi*	*-api -ape*
	adversative/negative:	*-A-š*	*-aži -aže*
	female imperative:	*-A-é*	*-á-e*
	male imperative:	*-A-ó*	*-á-hau*

With these data it becomes clear that Dakota alone among the Siouan languages has reanalyzed the initial *a-* of these morphemes as part of the preceding verb stem, and that the *a* was then generalized analogically to the unsuffixed and other forms of the verb. No wonder the environments for ablaut seemed so hard to specify: If one assumes that the basic form of ablauting verbs is the *–a* form, then the environments one must specify for the *-e* forms in Dakotan *are precisely those in which it did not occur historically!* Yet this is what phonologists of Dakota have attempted.

While, historically, the origin of ablaut from reanalysis is clear, in Dakota there are additional complications. After generalization of *-a* took place within the Dakota *-e* stems, a significant number of verb stems which had historically ended in (the invariant "real") etymological *-a* joined the ablauting verb class. This additional reanalysis was easy, since ablauting and non-ablauting *a* are homophones. Even some Dakotan verbs ending in nasal *-ą* joined the ablauting class, where they too now alternate with *-e*. It is these co-opted verbs that tend to ablaut variably in the different Dakotan dialects and that forced morphological restructuring.

This case demonstrates, among other things, that one does not simply incorporate the historical progression into a synchronic grammar. We have known for decades that ordinary sound change often is reflected in synchronic phonology, but massive analogical change often causes a basic reanalysis, and that is what has happened here. So, while comparative linguistics can most often illuminate why things are the way they are in a language, it cannot always provide the best synchronic description. The discovery that analogical, not phonological, change is responsible for the opaque conditioning of so-called ablaut in Dakota does nothing to make the Dakota data any easier to describe or learn. Nevertheless, what comparative Siouan *does* provide here is understanding and a principled reason why *no truly phonological solution to Dakota ablaut can ever be "discovered"*. We now know that we can simply stop searching for "the solution" to ablaut and concentrate our efforts elsewhere. No manipulation of feature sets, or gymnastics with rule schemata, markedness or constraint ordering can remake this instance of analogical restructuring into a natural

phonetic process or constraint. Yet those with no historical and comparative training continue to search.

3.2. Biloxi aspirated stops

Another case in which comparative linguistics has clarified synchronic description comes from the Biloxi language, a tongue that has been extinct for many decades. Here the data are the field notes and subsequent publication of James Owen Dorsey, the linguistically talented missionary who recorded the language in the 1890's, and Mary Haas and Morris Swadesh, who together recorded 54 words of the language in 1934. At issue here is the most basic sort of phonology – the system of stop consonants in Biloxi.

Dorsey wrote two kinds of voiceless stops and occasionally used symbols for voiced stops (these latter virtually all in loanwords). His Biloxi stop and affricate inventory was: fortis *p, t, tc, k* and lenis *p̣, ṭ, ḳ*. He also wrote the few voiced stops in borrowings. The unmodified series was described by Dorsey as being analogous to the corresponding English sounds in ***p**en*, ***t**o*, *ca**tch***, and ***k**ick*. The voiceless series with the subscript diacritic he described as containing "medial" sounds, between voiced and voiceless. (Dorsey 1893b, Dorsey and Swanton 1912: 2). Both sets are well represented in the published Biloxi dictionary and texts.

Haas (1968:80) gave the stop inventory as: *p, t, č, k* plus two other stops, *T* and *g*. She listed *d* among the phonological sonorants where it belongs, as a reflex of **r*. She was acutely aware of the problem of Siouan aspiration (see Haas 1969).

There have been several other treatments of Biloxi phonology over the years that have sought to interpret Dorsey's essentially phonetic transcription phonologically. *All without exception chose to ignore Dorsey's subscript diacritic and "normalized" his transcription, erroneously collapsing a phonemic stop distinction.*

Voegelin's (1939: 24) and Wolff's (1950: 65) stop inventories included only *p, t, č, k*. Both claimed that the multiple Dorsey and Swanton stop series were simply in free variation. Matthews (1958: xiv, 12) gave the same inventory, explaining "... if a comparativist has to work with texts of languages with which he has no personal experience, he will many times have to make purely subjective decisions and arbitrary choices." Einaudi,

in her 184 page grammar of Biloxi (1976: 16, 22), expressed frustration with "the endless number of cases in which [d] seems to alternate freely with [t] and [ṭ], e.g. *ṭopi ~ dopi ~ atopi*, 'new'", and she too reduced Biloxi voiceless stops to the single series. Additional linguists have done the same in unpublished work.

The aspiration contrast has always been a problem in Siouan linguistics. The most popular Dakota orthography in use today does not write it because Stephen Riggs simply could not hear it in 1852 (see Riggs 1893) and published a Dakota Bible without noting it. However, recent field work on several Siouan languages showing that aspiration is phonemic virtually everywhere led this author to reconsider Dorsey's distinctions in Biloxi (Rankin 1988). If closely related Tutelo and Ofo had an aspiration distinction, which they clearly did (Haas 1969; Rankin 1981, confirmed by Mithun 1983), and Dakota, in an entirely different Siouan subgroup, has the same distinction in cognate vocabulary, then it is only logical to assume that Biloxi also had such a contrast, at least at one time. It was just a matter of finding the evidence.

The evidence comes from two sources: First, there are about six cognate sets in which Dorsey actually transcribed sequences of *Cx* in Biloxi where other Siouan languages have phonemically aspirated stops. For example,

(16) BI *kxipa ~ kipa*, DA. *akhípha*, OS *ahkíhpa*, CH *akhípha* 'meet'

(17) BI *so^{n}´pxi* 'flour', DA *phe*, KS *phe*, CH *phe* 'grind'

Second, comparison of Swanton's Ofo and other Siouan cognate sets that have voiceless stops with Biloxi counterparts. The first of these sources is strongly suggestive; the second is conclusive.

The secret is to examine the data with the known transcriptional strengths of the investigators, Dorsey for Biloxi and Swanton for Ofo, in mind. It develops that the transcription habits of the two men were complementary; Swanton carefully noted aspiration, mentioning explicitly (Dorsey and Swanton 1912: 4) how "very distinct" it was in Ofo. The Ofo vocabulary contains c.125 entries with aspirated stops. Probable Biloxi cognates were found for 76 of these, and in an overwhelming number of cases Biloxi has fortes *p, t, tc, k* where Ofo shows aspirated stops *ph, th, tch, kh*. Recall that these Biloxi sounds are the ones likened by Dorsey to English voiceless initial (i.e., phonetically aspirated) stops.

	Ofo	Biloxi			
(18)	*aphe´ti*	*pe´ti*	‘fire’	cf. DA	*phéta*
(19)	*atho^{n}´hi*	*ta^{n}hi^{n}*	‘run’	cf. OS	*htą́ðì*
(20)	*akho´tca^{n}*	*ako*	‘outside’		

Dorsey’s Biloxi transcription, and in fact his transcription of any of the eight or more Siouan languages he worked with first hand, contains numerous inconsistencies. But when Dorsey was certain a stop was lenis, he wrote the subscript $_{x}$ beneath it in his field notes. When he could not tell whether a stop was lenis or not, he wrote it unmarked. So when we examine stop transcription in any linguistic work by Dorsey, we must bear in mind that, for him, *lenisness was the feature most worthy of note*. Whereas Swanton “listened” for aspiration and marked it, Dorsey “listened” for lenisness (perhaps because it was so un-English) and specifically marked it (in publication with the subscript dot). So when we search for reliability in Dorsey’s Biloxi stop transcription, we should search among the stops modified with the subscript diacritic, not among his unmarked stops. Concentration on Dorsey’s unmodified stops yields the disarray that led Einaudi and the others cited above erroneously to simplify Biloxi transcription arbitrarily.

We find a solid correlation of Swanton’s Ofo aspirates with unmarked Biloxi stops. Then, making use of Dorsey’s demonstrable reliability in perceiving lenisness, we predict that his use of the subscript diacritic will correspond to laxness and lack of aspiration in Ofo and the other Siouan languages. And here again, apart from *p*, which Dorsey did not use except in his inventory, we are rewarded with a secure correlation. Virtually all the marked Biloxi lenes match the weak stop series in Ofo and/or other Siouan languages in the 34 cognate sets we find. A few examples include,

	Biloxi	Ofo		
(21)	*nahaṭi´*	*iya´ti*	‘canoe’	Cf. CH *bá•ǰe*, KS *baǰé*
(22)	*si^{n}ṭo´, si^{n}t*		‘boy’	Cf. KS *šído-*, OS *šįto-*
(23)	*ni ́ḳi*	*niki*	‘be none’	Cf. QU *nįké*, DA *níča*

The two groups of cognates, based as they are on the complementary transcription habits of Dorsey and Swanton, yield a correlation for the aspiration feature better than ninety percent of the time. This evidence, coupled with those few cases in which Dorsey actually wrote aspiration as *Cx*, force us to conclude that Biloxi, like the other two attested Ohio Valley Siouan languages, did indeed possess the Siouan aspiration contrast. The

Biloxi stop inventory as revised must then be:[5] aspirates *ph, th, čh, kh* and plain *p, t, č, k*.

3.3. Siouan pronominals and the search for Universal Grammar

Grammar writing and linguistic theory are related but somewhat separate endeavors. The form of a grammar, however, obviously depends a great deal on the linguist's theory of morphosyntax, even for those who believe devoutly that each language should be described on its own terms. Much is made currently of the notion *Universal Grammar*, often abbreviated simply *UG*. There are competing views on how to discover UG. One solution looks cross-linguistically at particular syntactic structures in many languages; the other looks in great depth at a single language. Practitioners of both (though especially the latter) often work with the assumption that historical linguistics plays no part in their work. But the assumption is just as false in the areas of grammatical theory and grammar writing as it was in field linguistics or in phonology.

Siouan languages have complex verb structures with eight or more prefix positions for person-number marking of actor and patient, locatives, instrumentals, dative, benefactive, reflexive, motion returning, incorporated nouns and some other categories. It is not really possible to represent this schema as a template because there is variability in the affix ordering (see Rankin, Boyle, Graczyk and Koontz 2003), but one can give a slightly simplified approximation.

Table 1. Dakotan verb prefix orders: an approximation.

				1SG & 2SG	DAT			
ABSO-	**1DUAL**	LOCA-	INSTRU-	PATIENT &	VERT	INSTRU-	**VERB**	
LUTIVE	**INCL**	TIVES	MENTALS	AGENT PRO-	REFLX	MENTALS	**ROOT**	
3PL		1		NOMINALS	RECIP	2		
wa-	**ų́k-**	í-	wa-	**ma-**	**wa-**	kiči-	pa-	
wičha-		á-	na-	**ni-**	**ya-**	ki-	yu-	
		ó-	po-	**Ø**	**Ø**	ič?i-	ya-	
		i-				kičhi-	ka-	
							pu-	
sthg	**we/**	with	cutting	**me**	**I**	to/for	pushing	
them	**us**	at/on	heat/	**you**	**you**	back	pulling	
		inside	foot	**him/**	**s/he**	self	mouth	
		toward	shooting	**her**		each/ other	striking pressure	

There is not space to discuss every aspect of this, especially an extensive inventory of enclitics that appear following the verb root that signal the various aspect and modal categories, but a few comments on each order will aid understanding.

1. Absolutive *wa-* marks indefinite direct objects and as such is a valence reducer (and a noun-deriving prefix). *Wičha-* '3pl patient' must be ordered before *ų́k-* 'dual inclusive'.
2. Dual inclusive agent and patient pronominals generally occur preceding locatives but can also occur following them.
3. Locatives also include an abstract 'instrumentive' prefix meaning 'by means of' but often with unclear semantics or meaning 'because'. Locatives can double up and co-occur, i.e., recursion is possible, so the table is simplified at this point. The locatives are derivational prefixes.
4. Instrumental prefixes of more recent vintage occur in this slot. 'By heat' is really 'by extreme of temperature or inner force' and includes cold.
5. 1sg and 2sg pronominals occur in this slot; 3sg is not marked.
6. The prefixes here are (a) dative/benefactive/possessive, (b) vertitive, (c) reflexive, (d) reciprocal. Some of these can co-occur, so the diagram is somewhat simplified here too.
7. Most of the instrumentals occur here. *Yu-* often has a generalized, somewhat abstract, transitivizing meaning and is quite productive. These

prefixes are derivational, so inflection and derivation are morphotactically mixed.

As noted, *wičha-* '3pl' must always precede *ųk-* '1st dual actor/patient', and both must precede *ma-, ni-, wa-* and *ya-* the 1sg and 2sg pronominals. Within the latter group, patient precedes actor regardless of person. Now, if we look, for example, at the order of pronominal prefixes on the Dakotan verb, especially the discontinuity in the positions of *wičhá-*, *ųk-* and 1st and 2nd person prefixes, could this possibly reveal something about universals of pronoun order; should it be derivable from UG principles? Or should theoreticians disregard Siouan prefix order and look elsewhere? There is no obvious solution for practitioners of the "in depth" method. But Siouan linguistic history answers the question for us handily.

Historically, *wičhá-* and *ųk-* are grammaticalized from incorporated nouns, both originally meaning 'man, person'. The modern Dakotan noun, *wičháša ~ wičhášta* 'man', makes this rather clear for the 3rd person plural, but in the case of *ųk-* Dakotan retains no related form. Winnebago and Chiwere *wą•g-* 'man' are cognate, but to know this we must appeal to comparative evidence. The 3rd plural pronominal (and its source-noun) is found only in Dakotan, while the dual inclusive is pan-Siouan. Proto-Siouan **wų•k-* 'man, person' was incorporated and grammaticalized early, *wičháša* only much more recently. Once we know this we realize that these aberrant pronominals occupy the slot in the prefix pattern that such noun incorporanda held when they became grammaticalized and were frozen in place. Their synchronic location has nothing to do with universals of pronominal placement and everything to do with an accident of history, passed from generation to generation.[6] These data are simply not useful in any attempt to establish universals of pronoun placement: in fact they are excellent examples of where *not* to look for UG. It is also useless to try to derive their ordering by "stretching" the existing universal principles of any current, morphosyntactic theory.

Siouan would only be interesting to UG if *wičhá-* and/or *ųk-* were to alter their prefix order to join the 1st and 2nd persons. But if we restrict ourselves to the kind of data available to a young child acquiring his first language, there is no way to know this. This should suggest a much broader principle to syntactic theoreticians, namely, that one should try searching for instantiations of UG precisely among cases of syntactic *change*, not just synchronic position. Syntactic position can be passed from generation to generation by simple imitation – memorization. Morphosyntactic change affords us the opportunity to see UG asserting itself actively. If universal

grammar exists we should expect it frequently to influence the direction of such change. But without historical and comparative study, proponents of universality and students of language acquisition simply will not know where to look for the influence of UG in their data set(s).

4. Conclusion

In the case of Dakotan ablaut, comparative evidence was absolutely essential in clarifying a phenomenon whose phonological source had eluded Siouan phonologists for decades. While giving us an understanding of what had happened in Dakota, it also informed us about the likelihood of actually discovering further phonological conditioning for ablaut in Dakota and its dialects.

In the case of Biloxi, comparative evidence is absolutely essential in order to proceed to even the most rudimentary sort of grammatical description. Whenever the subscript *p̣*, *ṭ*, or *k̦* is found in *any* variant transcription of a Biloxi word, the stop should be considered underlyingly lenis. Ignoring this, numerous well-known and well-intentioned linguists have wiped away half the phonological distinctions among the stop consonants.

The affixal position of the morphotactically aberrant Dakotan pronominal prefixes can really only be understood historically; they should neither influence, nor are they influenced by, universal grammar. But a child's synchronic linguistic knowledge cannot provide this information; only a well-educated, well-rounded linguist suffices here.

Describing each language on its own terms is an ideal that every grammar writer and field linguist should strive towards. But attempting to do it while restricting our data to the sort available to an infant is foolish even (one might say *especially*) if we are studying acquisition. Comparative data clarify different problems, at different levels (phonological, morphosyntactic, semantic), for different linguists in different ways, but comparison is always useful, and sometimes it is absolutely crucial. Without it, even under the best of circumstances, we work with blinders on.

Notes

1. This is advice that ought to be superfluous throughout most of the world, however: every field linguist should, (as did Hale, Hyman, and others, above) automatically consult available comparative data. Nonetheless, the advice does indeed seem to be necessary. Treatments of historical and comparative linguistics become ever more trivialized in introductory linguistics textbooks, and some students now manage to acquire advanced degrees in linguistics without any exposure to comparative linguistics at all.
2. For convenience I take my examples in this chapter from Lakota, the L-dialect of the Teton Sioux. Other dialects substitute *d* or *n* for Lakota *l*, but are subject to basically the same ablaut rules.
3. There is a third ablaut variant in nasal *–į* in Dakota preceding certain nasalizing suffixes or clitics (such as irrealis mode); a nasalized *e* always raises to *į*, however, so this variant need not concern us further. Ablauting also occurs in reduplicated stems.
4. Dunnigan and Truitner (1975) proposed that Ablaut was conditioned by the class of adjacent syntactic boundary, but the attempt was shown to be a failure by Shaw (1980:135).
5. I have not discussed the matter of Biloxi *č* here. It is a little more involved, as *č* corresponds to *š* in most other Siouan languages. Swanton transcribed both aspirated and unaspirated varieties in Ofo, the aspirated *čh* appearing originally in accented syllables. Accent shifts and compounding have phonologized the distinction in Ofo over time, and I must assume the same for Biloxi, even though Dorsey did not use the symbol *ţç* in the texts.
6. Typologically, this pattern is not uncommon, of course. Compare modern French use of *on* 'one' as a first plural pronoun, replacing *nous* in colloquial speech. *On* is a reflex of Latin *homo* 'man, person', much like the Siouan dual inclusive prefix.

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The historical and cultural dimensions in grammar formation: The case of Modern Greek

Brian D. Joseph

It is well-known that typologists, like the languages they investigate, come in different types. All are interested in the nature of human language, yet some get at that elusive goal by focusing on familiar languages, in an attempt to draw on the typically wider range of resources – not to mention speakers – available for well-known languages. In addition, though, there are typologists who look to unfamiliar languages, often – and somewhat Eurocentrically to be sure – called "exotic" and in any case generally poorly known or previously undescribed.

There is a natural and understandable interest on the part of many typologists to focus on the less-known languages – and large numbers of them – based on the quite reasonable assumption that these languages offer the greatest potential for insights into the nature of human language that go beyond what familiar languages have provided to date. There is also the practical concern that many of these languages are endangered and thus must be examined now if they are ever to provide any insights.

At the same time, though, investigating in depth even a single language, and a well-known one at that, can yield unexpected insights: for instance, as Zwicky and Pullum (1983) have noted, Maling (1983) made the interesting discovery of a new word-class – the transitive adjective – based on her analysis of the English word *near* in phrases such as *near the barn* as being an adjective (note the comparative and superlative forms *nearer* and *nearest*) and further being one that therefore (and somewhat surprisingly) takes a direct object, rather than a preposition (as it has generally been treated traditionally[1] in this use). Moreover, in any case, any universal grammar which may end up being shown to exist must be broad enough to accommodate and allow for data from any language, whether well-known or not, so that in principle we can learn about the limits and the

content of such a universal grammar from surveying familiar languages and even from examining individual languages.[2]

Thus, it would seem that there is some merit to both approaches to investigating linguistic typology – that looking to exotica and that looking to the familiar – and thereby developing a sense of what a "universal grammar" would have to entail. At the same time, each way of engaging in typological investigation has as well its own associated set of problems. For instance, poorly described and little-known languages typically are off the beaten path and can require extraordinary means on the part of a researcher simply to be able to encounter the language in use. Familiar languages tend to be more readily accessible – one of the reasons they are familiar, oftentimes – yet they are not unproblematic and they do present their own set of challenges.

Accordingly, I explore here the consequences, with particular attention to the potential pitfalls, of engaging in the exercise of grammar writing and typological investigation with a well-known language. The target language used here as the exemplar is Greek, which, next to English and Chinese, may just be the most thoroughly examined language around.

The problems with looking at well-known languages present themselves quite readily. In particular, with such languages, one often has to reckon with various assumptions and preconceptions being brought to the table when one goes to talk about and analyze various aspects of these languages. That is, even though it might be desirable when looking to a given language for typological insight to approach that language with one's notebook, so to speak, a *tabula rasa* – in much the same way that children acquiring their native language, in an idealized view of the process, approach their language with no preconceptions or tradition or access to history – such is simply not possible with well-known languages in this day and age; too much is already known and too much information is available about them. Preconceptions are thus inevitable. Such preconceptions, unfortunate as they are, arise most dramatically when there are traditions of grammatical analysis for the language that are too solidly ingrained in most analysts' heads and are too influential to allow for an unbiased appraisal of the facts.

Another sort of problem with familiar languages is that the analyst may know, or at least have an idea, what the language was like at an earlier stage in its development, so that the temptation is always there to base a synchronic analysis on the way the language *was* in an earlier stage.[3] The problem with such historical knowledge is that in formulating grammatical descriptions, there is a natural and understandable tendency to focus solely

on synchronic structural elements, based on the quite reasonable assumptions that structure is crucial to grammar and that coherent descriptions are possible only for one stage of a language at a time. Thus, under such a view, diachrony should be irrelevant and extraneous to the goal of typology; nonetheless, the information is there to tempt the analyst and perhaps lead the analysis off the purely synchronic path.

These two problems are inter-related, in that knowledge of the history of the language can shape the assumptions that are made about the nature of particular items and constructions. Moreover, influential traditional views may well have been formed at a time, years or even centuries earlier, when the elements that are the focus of an investigation had a different status from their contemporary status.

For instance, it is customary to talk about the person markers of (especially colloquial) French, as in *je vois* / *tu vois* 'I/you see' as separate words and "free" pronouns, even though they are anything but free, functioning rather in ways quite similar to simple affixal elements, a type of agreement markers.[4] Indeed, Sauvageot (1962: 29–30) provoked some degree of controversy with his suggestion that French subject + object + verb complexes such as *je le vois* 'I – him – see' could be analyzed as an agglutinative structure in a manner analogous to the usual treatment of the similar sequence in a language like Swahili (e.g. *n-a-ki-ona* 'I – present – it – see'). Similarly, the analogous subject markers in the Algonquian language Cree, as in *ni-wapamaw* / *ki-wapamaw* 'I/you see (him)', are unquestioningly referred to as personal prefixes (see Wolfart 1973), not as words. The view that the French elements such as *je* or *tu* must be words and could not be affixes undoubtedly derives from the fact that these elements *were* free words at an earlier stage of the language, and the grammatical tradition of referring to them as such was fixed at a point where that was true – traditions, as we know, die hard (hence the controversy that Sauvegeot's assertions about these elements provoked). In the case of Cree (and Swahili, for that matter), there is no such tradition for Algonquian languages (or for Bantu) and no one is sure if the current prefixes ever were independent words; thus, the more realistic prefix labeling is generally used, and used uncontroversially.

As suggested above, these problems reflect a state in which there are too many received ideas about the target language that lie before the analyst. In a sense, such a situation could be characterized as there being too much knowledge available, though it is no doubt true that one can never really know too much about a language. Still, excessive knowledge can also be

problematic – in the sense of complicating matters considerably – when it comes to variation, for the more an analyst knows about a language, the more likely it is that (s)he will become aware of variation in speakers' usage, whether socially determined or due to other causes. The existence of variation can pose particular problems for those interested in structure, since it can be unclear which of, say, two competing patterns to take as basic, which one to take as indicative of what the language is *really* like, and so on. For certain types of theorizing, at least, ignoring variation might be a methodological necessity. Relevant here is the notion from early on in generative grammar of the "ideal speaker-hearer" and the concomitant view of variation as being merely a matter of performance, not one of linguistic competence. It might be better perhaps to see ignoring variation just as a starting point as one begins to get a handle on a language rather than as a guiding principle throughout an investigation. Still, ultimately, variation has to be confronted, and with well-known languages, the time for that confrontation has surely come, certainly sooner than with less-studied languages about which details on variation might just be coming to light.[5]

In the case of Greek, one source of variation is its own history, in the form of an artificially archaizing variety of the language which took shape largely in the first half of the nineteenth century in the aftermath of the Greek revolution, in part to fill a perceived need for a national language to accompany the emergence of the new Greek nation-state and in part to emphasize (whether rightly or wrongly) a connection between modern Greece and ancient Greece. This variety is the so-called *katharevousa*, or Puristic, Greek, which for decades, into the late 20th century even, co-existed in a diglossic relationship (in the sense of Ferguson 1959, who used the Greek case as one of his primary examples) with so-called *dimotiki*, or Demotic Greek, the variety that developed naturally out of the Hellenistic Greek *koine*. Social pressures to replace the Demotic with the high-style *katharevousa* variety in certain circumstances – public and largely official language such as speeches, lectures, governmental transactions, and the like – led to intra- and inter-speaker variation.[6] Thus, alongside Demotic *xtés* for 'yesterday', the naturally evolved outcome of Hellenistic Greek *xθés*, itself the natural outcome of Ancient Greek *kʰtʰés*, one can also hear even today *xθés*, with an initial cluster that more closely and directly reflects an earlier pronunciation than does *xtés*, with its further evolved initial consonant sequence.

History, then, as far as Greek is concerned, is embedded in current usage and variability. Yet, ideally, even when considering a well-known

language typologically, one would want to be able to take an ahistorical viewpoint, so that there were no preconceptions coloring things and that the results are as "clean" as possible. The case of Greek shows why such a stance is needed. It is not unusual to find, in discussions of Modern Greek grammar, references to Ancient Greek. For instance, Kalitsunakis (1928: 46), in his *Grammatik der* ***neu****griechischen Volkssprache* [emphasis added/BDJ], includes statements like "Der altgriechische Genitiv ist vielfach durch die Präposition από [*apó*] mit Akkusativ ersetzt worden".[7] Further, Holton, Mackridge, and Philippaki-Warburton (1997: 159), in their brief discussion of the Modern Greek past-tense marker known as the augment (whence "augmentation" as the process by which it appears), include the following statement: "In Ancient Greek all past tenses of verbs had augmentation as a regular morphological feature. In Modern Greek augmentation, when it occurs, can be divided into … three categories ...". In both of these statements, therefore, the authors felt that inclusion of some reference to the earlier state of affairs found in Ancient Greek, was useful for the readers of a grammar of the modern language.

Of course, it is clear why there are such statements; it is impossible to ignore the history of Greek and in many instances, as with the augment, a quick view of the history provides some insight, for instance, into why the feature is sporadically realized in the modern language – it is on the way out and is largely just hanging on in a few places. Moreover, the simple fact of the existence of high-style (*katharevousa*) forms, taken together with the presence of *katharevousa* throughout much of the modern era, makes it essential for readers to be made aware of some of the historical background. In particular, since *katharevousa*, being a consciously archaizing variety, often contained features that more directly reflect Ancient Greek usage, the history of the language can be on display in contemporary usage and variation. Indeed, the *katharevousa*-style pronunciation *xθés* for 'yesterday' referred to above is a case in point.

Still, it is also clear that such statements invite the inference that Ancient Greek provides the basic point of reference for things Hellenic. Yet, on the face of it, such statements can be viewed as somewhat odd. We do not describe indirect objects in French, for instance, by saying that the language lacks a dative case, even though Latin had a dative case to the same extent as Ancient Greek, and French and Modern Greek are comparable in terms of their relation to their respective parent language. Nor do we say such a thing about languages that may never have had a dative case; for example, the syntax of indirect objects in Cree is described

in the standard treatment of Cree grammar (Wolfart 1973) solely in terms of what the language actually does, not what it might do (or used to do).

Such historical statements in a synchronic description, especially when referring to the absence of a feature (as, for instance, if a grammar remarked on the absence of a dative in Modern Greek, or absence of an infinitive, or the like), are rather like a traffic sign that tells drivers (as some in the United States do) that the "Traffic signal sequence has changed"; this is informative if you have been to the particular intersection or road before, but on your first time there, it makes no difference if the signal or the conditions are different from what was there the day before, only that these conditions are operative *today*! Thus, approaching Modern Greek without the prejudice that a knowledge of Ancient Greek provides would seem to be a healthy move. In fact, this is roughly the approach that Drettas (1997) takes regarding Pontic, historically a dialect of Greek spoken in Asia Minor, describing it on its own terms in order *not* to invite the default position that structural features of Pontic must be understood against the backdrop of Standard Modern Greek serving as the omnipresent point of comparison.[8]

One possible negative consequence – probably so for Greek and maybe so for other languages – of there being so much historical information available about a familiar language, is that it can lead to a situation in which typologists do not take the language as seriously as they might. That is, Modern Greek has not made much of an impact on the typological scene, even though it has a few characteristics that are typologically striking, even if not unique or rare.[9] One of the reasons for this relative neglect has to be, as far as Modern Greek is concerned, the overwhelming presence of Ancient Greek, which, as an historical "800-pound gorilla", has overshadowed Modern Greek for many linguists.[10] Moreover, there is even linguistic evidence that reveals the pervasiveness of Ancient Greek even into modern times, and offers a glimpse into how others view the relationship between Ancient and Modern Greek. That is, while it is true that the term *Greek* in English, as well as its equivalent in French *grec(que)*, and in other languages as well, refers to the totality of the language (as in the title of Antoine Meillet's classic work *Aperçu d'une histoire de la langue grecque*, which covers the Greek language from Proto-Indo-European up into the 20th century), one still has to reckon with the further fact that in English, at least, the unmarked sense of "Greek" refers to the ancient language, thus requiring the designation "Modern" for contemporary Greek; significantly, the opposite occurs with other language

names in English, such as *English* / *Old English*, *French* / *Old French*, *Chinese* / *Archaic Chinese*, etc. In this way, therefore, the standard designations for the languages reveal something significant about how different stages of Greek are viewed, relative to one another.

Another factor that must also be recognized is the complication posed by the sociolinguistic situation alluded to earlier, with the constant presence of Ancient Greek and the pressure of the archaizing register of the language (*katharevousa*) that was consciously modeled on Ancient Greek. In particular, this has led to some intrusions into the grammar of what can loosely be called "Standard Modern Greek", so that for the typologist there are consequences associated with approaching the language with too great a storehouse of information as to the diachronic events that led to the synchronic state under examination. This can be illustrated with two examples, one from phonology and one from syntax.

The phonological example takes up again the issue discussed above of consonant clusters such as *xt* and *xθ*, i.e., fricative-stop and fricative-fricative clusters, to which, for the purposes of this example, should be added the stop-stop cluster *kt*.[11] All three clusters, *xt*, *xθ*, and *kt*, occur in Modern Greek, but only the *xt* cluster is truly Demotic in nature – the other two belong to the *katharevousa* style of pronunciation, and/or to individual lexical items that are part of the large number of lexical borrowings of *katharevousa* origin that have entered Demotic usage (e.g. *autoktonía* 'suicide' or *xθónios* 'infernal', both from the learned language, versus *xténi* 'comb', a Demotic word). From the standpoint of cross-linguistic typology, one can say that any stop-stop and fricative-fricative clusters that are found in use in contemporary Greek, even if originating in *katharevousa*, would violate a version of the Obligatory Contour Principle (OCP),[12] a constraint that requires that consecutive elements show some differentiation (i.e., some "contour", since most of the cases discussed have involved tonal sequences) in their representation if they are not simply subsumed under the same representational node. In particular, it has been argued, e.g. by Borowsky 1987: 675-77), that the OCP should not refer just to complete identity of segments or tones but rather to certain featural identities, ruling out, for instance, in English plural formation, sequences of coronal continuants even if they differ in voicing (thus requiring the presence of a vowel with the plural suffix to block the sequence *s*-z in a word like *kisses*). In the Greek case, successive fricatives (e.g. *xθ*) or successive stops (e.g. *kt*) would be ruled out by an OCP effect focusing on manner of articulation, even if the consonants differed in place of articulation and thus were non-

identical. By contrast, the fricative-stop cluster (e.g. *xt*) would obey such a manner-oriented form of the OCP in that the consecutive elements would show differentiation in manner.

Since Modern Greek, approached simply as a synchronic state without concern for the history that led to that state, tolerates all three types of clusters, inasmuch as the language shows a mix of *katharevousa* and Demotic elements, such an OCP cannot be regarded as an absolute constraint holding on synchronic grammars, but rather must be taken as a violable one, a desirable goal perhaps that languages aim for structurally but not a necessity for them. From a cross-linguistic standpoint, as Odden 1986 argues, this is undoubtedly the right result. Still, it is interesting to consider, in this regard, what would be said about Greek if one were to take the history seriously and discount the *katharevousa* elements as somehow being "alien" to the Demotic system, as is sometimes done with regard to loan words from different languages. If one were to focus just on the (truly) Demotic elements, one would have to say that Modern Greek is a language that obeys – and thus provides some support for – a feature-based version of the OCP in its consonant clusters, and thus is among the set of languages in which the OCP can be seen to control cluster combinatorics. This would, however, be a counterfactual result, because the intrusion of the *katharevousa* forms with *kt* and *xθ* means that the OCP actually plays *no* role in Greek overall, and holds at best just for a subset – now historically defined only – of the lexicon. And, that outcome has an impact on how we view the OCP, that is, as a tendency of Universal Grammar at best. Of course, one would reach that same conclusion by simply looking at Ancient Greek with its *kt* and k^ht^h clusters, so the conclusion is obviously the right one, but the larger point here is that both the social setting for Modern Greek and the analyst's reaction to it are in part responsible for how one ends up characterizing the language typologically and, consequently, treating a putative universal (here, the OCP). One cannot typologize in a social vacuum.

It is worth remembering here that from the point of view of the speaker of the language, who might be considered the ultimate arbiter of what counts in the matter of defining the limits of the data upon which a linguist's grammatical description is to be based, many *katharevousa* elements are part and parcel of everyday usage, and cannot be discounted as mere historical oddities, alien to the "real" system of Demotic Greek. At the same time, though, schooling and exposure to prescriptivist pressures foster an awareness of *katharevousa* and the history of the language;

indeed, one might well argue that school study also forms part of the input to the average modern Greek speaker's grammar, even if allowing that awareness to serve as a filter is quite problematic. One is inclined here, therefore, to take the observed variety at face value and construct grammars accordingly, noting for instance that children in the earliest stages of their own grammar formation do not have access to information about the history of the language and that the schooling that heightens awareness of the history comes as a learned overlay on top of the natively arrived-at grammar.

The syntactic example yields similar results. Modern Greek has a number of relative clause formation strategies, an aspect of syntax that spawned considerable interest among typologists in the 1970s especially with regard to the Accessibility Hierarchy (Keenan and Comrie 1977), a ranking of which grammatical relations and structural elements in a clause were accessible to certain relativization strategies. The Accessibility Hierarchy is the basis for a number of claims about relativization embodied in a set of constraints (the "Hierarchy Constraints") that govern relativization, putatively cross-linguistically. The exact details of these claims are not relevant here, but one matter of definition that pertains to the interpretation of some of them is. In particular, Keenan and Comrie define what they call a "Primary Relativization Strategy" as a strategy that "can be used to relativize subjects" (1977: 68), and they further claim that some hierarchy constraints are valid just for primary strategies, and not for all strategies. Therefore, the determination of whether a relative clause formation strategy is a primary strategy or not is crucial for assessing the validity of the primary constraints on relativization.

Greek has a type of relativization with a relative marker *pu* that is invariant, so that its use gives a non-case-marking strategy, as well as a type with an inflected relative pronoun *o opíos* (literally "the which"), which shows case distinctions and thus gives a case-marking strategy.[13] The invariant strategy is generally considered to be the Demotic type, and is certainly so historically speaking; the inflected pronoun strategy is generally taken to reflect *katharevousa* usage, and thus historically it is an importation from the learned language (*katharevousa*) into standard Modern Greek usage.

The *pu*-type relative is usual when the target is a subject or a direct object, as in (1ab); nevertheless, the case-marking strategy is solidly embedded in current usage as the norm when the noun phrase that is the target of relativization is the object of a preposition, as in (1c):

(1) a. *éxo* *éna fílo* *pu* *méni* *sti spárti*
have/1SG a-friend/ACC REL lives/3SG in the-Sparta
'I have a friend that lives in Sparta'

b. *o fílos* *pu* *sinándises* *méni* *sti spárti*
the-friend/NOM REL met/2SG lives/3SG in the-Sparta
'The friend that you met lives in Sparta'

c. *i póli* *apó* *tin opían* *érxete*
the-city/NOM from the-which/ACC comes/3SG
íne *i spárti*
is/3SG the-Sparta
'The city from which he comes is Sparta'.

Based on these most typical uses, whatever the historical source of the particular strategy, one might be inclined to say that the case-marking strategy with *o opíos* is not a primary strategy in standard usage, as it does not usually relativize subjects, and thus that any properties it might show would be irrelevant to the *primary* relativization constraints (even if they might be relevant to any constraints that do not target primary strategies). Indeed, working with a relatively limited data base (understandably, given the nature of their cross-linguistic survey), this was the position that Keenan and Comrie 1977 took with regard to Greek.

However, the situation is a bit more complicated, and the ultimate determination of where this strategy falls typologically again rests on the matter of taking the social context of prolonged interaction between Demotic and *katharevousa* into account. That is, the case-marking strategy with *o opíos* does relativize subjects in more learned styles of Greek, e.g., in thoroughly *katharevousa* contexts. Moreover, due to the presence of the strategy in even very colloquial usage for relativizing objects of prepositions, and to the pervasive influence as well of *katharevousa*, the use of *o opíos* for subjects can be found now even in very colloquial contexts where Demotic usage might be expected to prevail, as in (2):

(2) *éftase* *o fílos* *mu* *o opíos*
arrived/3SG the-friend/NOM my the-which/NOM
méni *s ti spárti*
lives/3SG in the-Sparta
'My friend arrived who lives in Sparta'

Thus, despite its *katharevousa* origin and despite the apparent non-Demotic character of the use of *o opíos* for subjects that could lead one to want to discount it as a primary strategy, the effects of dialect and register interaction in Greek have led to a situation in which the case-marking strategy must be considered to be a primary relativization strategy as far as synchronic Greek overall usage is concerned, since it can be used to relativize subjects (as in (2)). Again, if one were to attempt to use historically-based information as a way of getting at "true" Demotic usage, or if one were to ignore the variation in subject-relative formation that years of competition between *katharevousa* and Demotic registers have caused, the picture of Greek typologically would be somewhat different (as in the assessment in Keenan and Comrie (1977).

In both of these cases, simply taking synchronic usage at face value without a concern for the history lying behind the usage seems to be the right approach for being typologically accurate. It is suggested above that the practice of trying to filter out historical accretions as somehow "alien" to a system is rather like what is sometimes done with regard to loan words and the occasional phonological disruptions they can cause. In fact, though, it seems quite reasonable to treat the influence of *katharevousa* Greek on Demotic Greek as a kind of language contact situation, essentially involving what might be termed learned borrowing from one register of the language into another. Thus what one sees with the sociolinguistics of Greek and its impact on typologizing is similar to the caveat that must always be borne in mind, namely that contact with other languages can have significant effects on a language.

Perhaps even more interesting and relevant here is the fact that contact can lead to small "blips" in the overall typology of a language, minor intrusions that disrupt otherwise "smooth" and "clean" patterns. Two well-known cases involve the same element, namely the finite complementation introduced by *ki* 'that' found in Persian. This complementizer and its associated finite complementation pattern was borrowed from Persian into Turkish; this borrowed structure is now the only finite complement clause and the only right-branching complementation in Turkish, so that the

prevailing nonfinite and left-branching complementation patterns of Turkish are disrupted by this new type. Yet, it is a real and living part of the language. In a similar way, the same structure borrowed from Persian into Hindi has given Hindi its only non-correlative finite subordinate clause structure (where correlatives are structures analogous to English *Whoever goes there, he deserves a prize*, where the relative pronoun *whoever* "correlates" with the resumptive pronoun *he*, or to English *When Robin arrives, then the party will begin*, where the subordinator *when* "correlates" with the complementizer *then*).

To discount these structures from present-day Turkish and Hindi as being historical importations into otherwise anomaly-free patterns would belie the goals of being descriptively true to what a language presents and of accounting for the facts of languages as they are found. Thus, it is true that taking the foreign origin of these structures into account and discounting *ki* clauses in Turkish would allow one to say that typologically it has only nonfinite complementation and similarly discounting them in Hindi would allow one to say that it has only correlative finite subordination. Nonetheless, the reality is that *ki* clauses exist in both languages, and as a result their complement and subordinate typology is mixed, finite *and* nonfinite for Turkish, correlative and noncorrelative for Hindi. To the extent that mixed typologies are viewed as problematic, or at least do not provide for "clean" generalizations, language contact has created a "messy" situation for the typologist here, just as the *katharevousa*/Demotic interaction has in Greek.

Greek thus provides a basis for important methodological lessons, concerning the ways in which external factors like grammatical preconceptions and the social setting for a language can sometimes get in the way of a clear picture of how to consider the language typologically. This result, however, can be seen as the right result, though, since at the same time, it allows for a more realistic picture of the language, surely the typologist's desideratum. That is, somewhat paradoxically, perhaps, more information, such as the historical record that a well-known language would generally offer to the linguist, can be dangerous and can potentially lead the typologist astray, but at the same time, that greater amount of information ultimately can be a savior, enabling one to understand fully the dynamics that go into language formation by speakers, and thus being necessary for realistic grammar formation by linguists.

Notes

1. As, for instance, in the American Heritage Dictionary (AHD, under the entry for *near*). There is of course an undisputed adjective *near* as found in expressions such as *a near miss* or *the near future*, but that is not what Maling's discussion focused on.
2. Even if transitive adjectives are found elsewhere, so that *near* in English is not a unique type, the point here is that finding such a type at all depends on finding it in some language to start with; if that first language attesting a particular type happens to be a well-known language, so be it; being well-known is not the same thing as being completely known!
3. Of course, we know a lot also about the history and prehistory of even less familiar languages, but such knowledge tends to be more specialized and less widely available to the average linguist looking into a particular language than for the better-documented and better-known languages.
4. See Auger (1993, 1995) for perhaps the most recent defense of this view, which as she notes, actually has a rather long history, dating back to at least Diez (1871: 252).
5. Many poorly described languages are spoken by small numbers of speakers, and the smaller the number of speakers, the smaller the chances are for variation. This is not to say that small speech communities have no variation – indeed, even single individuals can vary, showing speaker-internal variation in their speech patterns – but the chances for uniformity are greater with a smaller set of individuals over which variation could occur.
6. This competition between the two varieties of Greek has been referred to as the "language question" and it pervaded much of Greek linguistics and Greek society for decades. In a sense, the "question" is now resolved, in that *katharevousa* as of 1976 ceased to have any official function in modern-day Greece, as a result of governmental reforms. Still, the effects of the years of competition remain, and have been transformed in a sense into other sorts of register differences. Thus it is not anachronistic to talk still about *katharevousa* and Demotic, even if the circumstances of their use in Greece have been drastically altered in the past quarter-century.
7. "The Ancient Greek genitive is often replaced by the preposition *apó* with the accusative".
8. Indeed, the result of Drettas's *tabula rasa* approach is that he is convinced that Pontic should be considered now a separate language, distinct from its source language and not a dialect of Greek, a view that seems eminently reasonable, given the rather striking differences between Pontic and other varieties of Greek.
9. I discuss these features in Joseph (2000), but can mention a few here: a phonological system with a skewing of stops versus fricatives (fewer stops

than fricatives), and with voiced stops that are either positionally restricted or weakly represented in terms of frequency (as opposed to robust voiceless stops); a morphosyntax that recognizes a multiple distinction in pronouns among strong (emphatic) forms, weak (so-called "clitic" forms), and for the third person nominatives, an intermediate-strength weak form (not just a phonological reduction) whereas for non-third person nominative forms, "weakened" forms that are only phonological reductions of strong forms (see Joseph 1994, 2002 for some discussion); and a syntax with relative clause formation strategies that challenge aspects of the Keenan-Comrie Accessibility Hierarchy (e.g., whether individual relativization strategies always apply over continous segments of the Accessibility Hierarchy – Greek suggests not, as discussed in Joseph 1983); see also the brief discussion below of Greek relative clause formation.

10. The allusion here is to the joke: "Where does an 800-pound gorilla sit? Answer: Anywhere he wants to!".
11. The situation is similar with clusters having labials as the initial element: *pt*, *ft*, and *fθ* all occur, but only *ft* is historically proper to Demotic.
12. I draw here on the excellent discussion in Odden (1986) of this constraint, first proposed by Leben (1973), and later elaborated on (and named) by Goldsmith (1976), with regard to the representation of sequences of tones. Odden clarifies the status of the constraint in Universal Grammar, as noted below.
13. There are some other types that are based on these two with slight structural "wrinkles", but they are not of concern for the point being made here; see Joseph (1983) for further discussion.

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Polylectal grammar and Royal Thai

Tony Diller

Bob Dixon (1983, ch. 8) engagingly relates the account of field research leading to his grammar of the North Queensland language Dyirbal. He describes how he found the everyday language Guwal to be related to Jalnguy, the so–called "mother-in-law" style required in avoidance/taboo situations. With native-speaking friends and assistants, sometimes in lively group elicitation sessions, he went on to uncover the pattern of substitutions that forms the core of the Guwal/ Jalnguy contrast, leading to recognition of Dyirbal's pervasive nuclear/non-nuclear verb classification. Dixon's decision to devote important attention to Jalnguy in field research and in his resulting grammar was not to provide a quaint ethnographic appendix. The Guwal /Jalnguy relationship was shown to disclose deeper principles of Dyirbal's semantic organisation and to point to wider typological and theoretical concerns.

1. Introduction

The purpose of this study is to show again, through a further example, that grammar writing need not shy away from ethnolinguistic detail – even when this includes disparate data of special registers. An inclusive scope may well be at odds with professional pressures to build up an elegant, concise and typologically unified grammatical construct. Homogenous idealisations might be convenient for comparative theoreticians to cite, but surely more substantive advances in linguistic theory arise from just what the unified treatments are suppressing. Jalnguy is pointing the way here. My first encounter with the Guwal/Jalnguy distinction was in one of those exhilarating Dixonian departmental seminars, with a published account following (Dixon 1990). Jalnguy led me to wonder whether the complex of Thai diglossic speech styles might also disclose anything of Thai's deeper principles of linguistic organisation. I had tended to view royal Thai, poetic language and similar registers as somehow extraneous to the real work of

grammar writing. These exotica could be factored out or ignored until after the everyday language had been dealt with adequately. After all, were not these registers mostly a matter of automatic lexical substitutions? But the seminar suggested a closer look. What follows below is an attempt to document a post-Guwal/Jalnguy turn in my understanding of Thai grammar.

Structural and functional properties of Australian avoidance-taboo styles bear partial resemblance to "lexical other" alternation systems elsewhere, including in the Asia-Pacific region. For example, in its formal composition, Samoan respect vocabulary shows several-to-one skewing of replacement vocabulary reminiscent of Jalnguy (Duranti 1992: 80). Functionally however differences are clear. Although Samoan respect vocabulary is often characterized as the speech style prescribed for formal speech to chiefs, Duranti has indicated the further potential of using these forms with non-chiefs as a sociolinguistic resource to define situations or to adjust relationships.

Yet further removed, at least functionally, is diglossic high/(medium)/low variation, such as in Javanese with the styles Krama and Ngoko (Errington 1985) or in Balinese with Alus and Kasar. The Dyirbal, Samoan, Javanese and Balinese alternations tend to limit grammatical variation to differences in degree, with lexicosemantic contrast more basic. In another type of variation, interest focuses on psycholinguistic ability of speakers to apply variable rules of grammar. These rules may involve phonology, morphology or syntax. The term "polylectal grammar" has been used in this latter sense, especially to characterize competence along a creole continuum (Bickerton 1973; Mühlhäusler 1992).

The fact that the Haitian Creole continuum was one of Ferguson's (1959) original defining diglossic examples is perhaps vindication for extending the term "polylectal grammar" to include other types of register switching in which lexical substitution plays an important part. The "lect" of polylectal might then be entirely a matter of lexical switching or else might include variation affecting grammatical rules as well. The latter variation is a formal characteristic of diglossic literary/colloquial variation in Sinhala (Gair 1992) and Bangla (Dil 1986). Of a slightly different type is the standard-colloquial continuum for Malay described by Benjamin (1993), where certain verbal affixes are polysemous in that they receive different interpretations across the continuum, with other affixes restricted to the continuum's high end.

Of course, it is necessary to distinguish clearly the social functions of creole continua, avoidance/respect styles and diglossic variation of the Javanese and Sinhala subtypes. Questions of degree of structural isomorphy between varieties or along continua are important to analyse as well – questions raised earlier in dialectology research and especially in Weinreich's (1954) discussion of "diasystem". On the other hand, polylectal phenomena do pose broadly similar challenges both to practical projects of producing grammatical descriptions and to more theoretical programs of probing the nature of human linguistic competence.

Points of contact with all of the types mentioned above can be discerned in the royal Thai register, to which we now turn. Section 2 introduces the functional and socio-historical context of the register. For readers interested descriptive detail, sections 3–9 provide an overview of how the register is constituted and how it operates. Royal Thai is shown to be both like and unlike the common language. Its substantial enmeshment with the higher diglossic level of the common language provides one perspective, but a fuller view discloses a degree of typological disparity along with distinctive lexical patterns, morphophonemic word-building principles and semantic marking and organisation. Programmatically, section 8 proposes that the special royal register can provide a new tool to investigate grammaticalisation and related questions of phrase structure. Section 10 returns for a final look at grammar writing and other wider issues.

2. Overview: Royal Thai and Common Thai

2.1. Royal Thai as a discourse register

Royal Thai is a specific component in a diglossic register complex summarized in a general way elsewhere (Diller 1993; Smalley 1994). The Thai term ra:cha:sàp is formed from Sanskrit components *ra:ja* 'king' + *çabda* 'vocabulary'. Although the Thai compound means 'royal vocabulary', it is used by Thai authorities in at least three different senses (Yumonthian 1993: 7–14). (i) In the most restricted or "proper" sense, it refers to several hundred items of special vocabulary, including formulaic phrases, to be used only in specified circumstances concerning royal persons. (ii) In a wider sense, ra:cha:sàp is used to include over a thousand additional words that comprise "high" speech-level vocabulary of common Thai. These words are used in polite or formal circumstances,

including – but not restricted to – royal contexts. (iii) Yet a third use of ra:cha:sàp is to characterize a passage of Thai discourse, written or spoken, in which ra:cha:sàp vocabulary, in both senses (i) and (ii), has been selected. The abbreviation RT will be used here for "royal Thai" in this discourse sense. Similarly CT will be used to characterize a passage in common Thai. Texts or passages in RT and CT share core syntax, although some syntactic patterns are specific to each variety and specific constructions show differences in frequency and detail. RT and CT also share a core lexicon of many thousand items not affected by (i) and (ii).

Neither RT nor CT is a homogeneous register. It is often useful to recognize low and high subdivisions of RT and CT, which closer scrutiny would break down into more complicated continuum relationships. For descriptive convenience RT-L and RT-H are used below to suggest this variation, paralleled by CT-L and CT-H. *An essential principle is that CT-H selections, as in (ii) above, automatically apply to RT unless RT prescribes its own special alternates, as in (i).*

A connected text in RT will thus typically include:

(i) prescribed RT selections, perhaps specified as RT-L and RT-H as appropriate;
(ii) further CT-H selections for any items sensitive to CT-L/H alternation;
(iii) core grammar and lexicon.

Running texts in CT-H, the high register of the common language, would be characterized only by (ii) and (iii) above. For CT-L, low lexical alternates would be selected, along with core grammar and vocabulary not subject to alternation

William Gedney, one of the first to summarize ra:cha:sàp phenomena for an English-speaking audience, identified the lexical system as "certain special terms [that] are conventional substitutes in situations involving royalty for ordinary terms of the common vocabulary" ([1961]; 1989: 481). While substitution, recalling taboo and euphemism, is certainly the basic process involved, Roengpitya (1973) and many local Thai manuals go on to show that depending on context for many lexical items a range substitutions may be prescribed. Details of royal rank may enter into particular RT selections, accounting for differences between RT-L and RT-H. As we see in the following sections, the relationship with common Thai is far from a simple one-to-one isomorphism. To see only a system of binary contrasts would be a simplified approximation.

2.2. An example: Prince William's birthday

In a Thai text, foreign as well as the Thai royalty evoke RT substitutions. (1) is a preliminary example of how the system is used. It is an extract from a popular Thai magazine report on British royal family activities.[1]

(1) Popular magazine treatment of British monarchy

nay	waro:kà:t	thî:	câw˙cha:y	williəm	mi:
in	occasion$_R$	REL	prince$_{(R)}$	William	has
phrá˙chonnáma:yú		khróp	sìp˙pæ̀:t	chansă:...	
age$_R$		fulfill	eighteen	years$_R$	

'On the occasion of the eighteenth birthday of Prince William ...'
(Dichan April 2002: 83)

(2) Common Thai (CT) equivalent of (1)

nay	o:kà:t	thî:	nɔ́:ŋ	côy	mi:
in	occasion	REL	yr.sib	Joy	has
a:yú	khróp	sìp˙pæ̀:t	pi:...		
age	fulfill	eighteen	years		

'On the occasion of the eighteenth birthday of Little-sister Joy ...'

(3) Comparison of lexical items in (1) and (2)

	CT	RT
occasion	o:kà:t	waro:kà:t
age	a:yú	phráchonnáma:yú
year	pi:	channásă:
in	nay	nay
that (REL)	thî:	thî:
have	mi:	mi:
fulfill	khróp	khróp
eighteen	sìp˙pæ̀:t	sìp˙pæ̀:t

(2) is how a native speaker transposes (1) into a normal Thai version of a similar message, in this case not referring to a royal person but to a commoner (Little-sister Joy). (3) then compares lexical selections. The upper panel shows three pairs of common-royal alternates. The lower panel shows another five items that the two texts have in common. For this example, sentence-level syntax is shared.

2.3. Typological profile

Typologically, (1) and (2) share basic principles of phonology and rules of clause-level syntax. While there is phonological similarity between all registers of Thai, there are some characteristic differences in articulation: colloquial Thai tends to reduce clusters and to merge /r/ with /l/. khróp 'to fulfill' in (2) is apt to be articulated colloquially as [khlóp] or [khóp]. Common core vocabulary includes a number of conjunctions, temporal-aspectual auxiliaries and other function words. For most RT/CT parallel texts the proportion of words in common would fall between one- and three-quarters of the lexical total, as illustrated in (3). Occasionally a sentence can be found in an otherwise RT running text in which no substitutions happen to be prescribed. For such a sentence, following the conventions used here, RT would coincide with CT. The opposite possibility, a sentence in which all words are RT substitutes, can easily be contrived but in fact is rather rare in actual texts.

Items like 'occasion' and 'age' in (3) demonstrate that lexicosemantic and morphosyntactic profiles of RT and CT are somewhat different, although neither variety exhibits inflectional morphology. Colloquial CT-L shows a high percentage of monosyllabic and a few bisyllabic forms. It is a fair representative of the isolating linguistic type. The higher register CT-H shows more Indic and Khmer vocabulary, including extensive fossilized derivational morphology. RT-L and RT-H are replete with Indic- and Khmer-inspired polysyllabic compounds – words of eight or more syllables not being unusual –some showing local agglutinative processes examined in following sections.

There is an important grammatical contrast in morphosyntax, although it is not categorical in distinguishing RT. Native compounds in Thai follow the pattern [head noun + modifier]. The opposite order [modifier + head noun] is the norm in Indic donor languages and is frequent in CT-H and RT borrowed or reconstituted compounds. This accounts for the form of the

word ra:cha:sàp itself, as noted above. Similarly, in (1) the royal form for 'occasion' is a sandhi compounding of Pali-Sanskrit-derived components vara 'glorious' + Pali okāsa 'appearance'. The CT form is based on the latter morpheme alone. 'Age' shows a similar pattern. For 'year', the royal form is a local contraction of Sanskrit-provenance janana 'birth' + vr̥sha 'rainy season', i.e. birth-seasons, while the common form pi: is a different item inherited from Proto-Tai.

The [modifier + head noun] pattern is characteristic of many compounds in CT-H, at least as an alternative. A noun phrase with Indic components may follow indigenous order [head noun + modifier] as in: prayò:t sǎ:tha:raná [benefit + public] 'public benefit', i.e. two words; or else a corresponding one-word compound may be formed using the Indic order sǎ:tha:raná·prayò:t [public-benefit]; in transcription the raised dot is used to indicate word-internal junctures of this type. This word-building process is semi-productive for Indic-provenance vocabulary.

Colloquial CT-L speech gets by with a high degree of zero nominal anaphora, leaving many bare verbs and multi-verb constructions to do much of the communicative work. RT too may leave a royal argument nominal in a clause to be interpreted from context, but often chooses instead to emphasize a long elaborate title as a token of respect. A panoply of special nominals is sometimes displayed, almost ornamentally. On the other hand, as exemplified below many RT verbs are less specific than CT counterparts would be. Passages in RT and CT may thus differ in characteristic information packaging.

2.4. Contexts of royal Thai usage; proxemic and linguistic distance

For purposes here we can summarize situations that trigger the use of RT under two headings: (i) syntactico-semantic and (ii) pragmatic.

(i) Syntactico-semantic conditions apply to message content. If an argument of a clause refers to a royal person, special marking may apply. For example, for royal-referent subject or dative-recipient, the verb must be overtly marked as royal, either through prescribed substitution or by other means to be explained. Since even a zero-anaphor subject or dative will trigger this marking process, the deeper semantic predicate role, rather than surface syntax, is the determinant. Also, if overt pronouns or classifiers refer to royal persons, regardless of semantic case, special forms are to be used. Certain royal-associated nouns must similarly be marked. These are

usually in a genitive relationship with a royal person, whether or not the person is referred to overtly. Included here are especially inalienable-possession terms referring to body parts and kin. Personal clothing and implements receive special treatment, along with more abstract notions such as orders and communications; also nouns like ‘occasion’ and ‘age’ as exemplified in (1).

(ii) Pragmatically, in a situation where a royal person is being addressed, or even is merely present and listening, then certain substitutions and other forms are prescribed. Where applicable, CT-H alternates are prescribed. On some occasions, for example in an academic conference attended by a prince or princess, the royal person may issue a brief decree suspending the use of RT temporarily.

When Thai royal persons speak, they themselves normally use common Thai verbs when referring to their own actions, unless another royal person is jointly involved in the action (Damrong-Rajanubhab and Narisaranuvattivongse 1963: 161). Otherwise they must follow principle (i), resulting in complexities that have led some royal persons to prefer communication in English in various informal circumstances (Gedney 1989: 482, quoting Prince Chulachakrabongse).

RT is considered by most commoners to be difficult. Those who need to use it actively report nervousness and often claim to fall short of prescribed norms. In formal circumstances, one is aware of the register’s serious-sounding articulation. Some have indicated that, in effect, RT serves a distancing function. This confirms the physical separation that characterizes typical royal encounters. In most ceremonies, Thai royal persons of the highest ranks are situated away from and above commoners, perhaps on a podium or dais, in a way that seems to match physically the linguistic verticality of a high speech level. Ropes or other barriers may cordon off royal persons from commoners as effectively as RT distinguishes itself lexically from CT. While there has been some effort, especially with television, to soften such images of proxemic aloofness, for most commoners RT is the linguistic articulation of more comprehensive semiotic imagery involving separation and elevation. Taboos relating to heads and feet also become involved in this complex, with kinesic-proxemic sensibilities and taboos paralleled by linguistic usage (Juntanamalaga 1992). Examples (5), (16) and (17) illustrate these issues. In spite of these barriers, RT would be considered by the majority of Thais to be an important part of their cultural heritage and something to be described in a Thai grammar.

2.5. Historical background

Historically, Thais acquired the special register from Khmers who had developed a Khmero-Indic royal language attested inscriptional sources. This marked linguistically the *devaraja* or 'divine king' cult. Wyatt (1982: 71) observes that the Thai ruling elite "buttressed the majesty of the throne with a special court vocabulary based on Khmer and Sanskrit. For them, a truly royal king should be raised far above the level of his subjects …wrapped in a cloak of mystery and sanctity …"

This explains the register's etymology. Provenance for the majority of ra:cha:sàp words is Old Khmer or else Sanskrit and Pali as borrowed through Old Khmer and partially assimilated to it. However, idiosyncratic compounding and other grammatical processes have developed from the borrowed Khmero-Indic base over a 500-year period. King Rama IV (r. 1850–1865) had a keen interest in language standardisation and made detailed language prescriptions, codifying RT as well as CT-H (Diller 1993; 2001). He went so far as to prescribe the semantic cases (*karaka*) for arguments of particular verbs. Ongoing refinement has occurred in recent times, at least in prescribed lists. Gedney's report of 1961, based on an official manual of 1932, indicated substitutions for only 180 nouns and 73 verbs. This is far short of the over 2000 forms currently prescribed in some manuals.

Is the royal register RT to be regarded simply as a "diglossic parasite" dependent on the common language? (– Perhaps my misapprehension before the Jalnguy seminar.) Note that even CT, the lower stratum, is characterized by L/H speech-level phenomena. Historically, CT-H, the higher end of the speech-level system, is derived from RT and in effect merges with it. This occurred as linguistic usages of the court diffused downwards into common parlance. Indeed, even toward the lower end of CT–L, Khmer-provenance forms have found their way into colloquial speech: body-part terms like 'nose'; common nouns 'road', 'bridge'; common verbs 'walk', 'drink', and even more core grammatical items meaning 'or' and 'should'. Which of these items have been borrowed vertically downwards from RT into CT and which may have been acquired more horizontally as the result of a historical stage of widespread Thai-Khmer bilingualism is a current topic of investigation (Khanittanan 2001). To consider diachronic development in this case, symbiosis seems a better guide than parasitology.

2.6. Current scope

At present most Thais who study the system in earnest would need to consult special Thai textbooks, the ra:cha:sàp manuals. These are typically volume-length lists in two-column format. Columns are labeled săman 'common' and ra:cha:sàp , 'royal'. Leading authorities whose treatments we summarize below present more than 2000 pairs in this way (Yumonthian 1993; Phibanthaen 2001; Ketprathum 2001).

The two-column format of ra:cha:sàp manuals mentioned above facilitates memorization for examinations, the most common reason that ordinary Thai speakers would need to study the system methodically. School quizzes, university entrance examinations and public service promotions tests regularly include RT sections. Some manuals include sample test questions of exasperating complexity and obscurity. Occasionally manuals make attempt to separate items into broad semantic groups (e.g. kinship terms, body parts) but as we see below if a finer semantic analysis is made, more useful morphosyntactic generalisations emerge.

Apart from memorising long lists of lexical substitutes for examinations, most Thai speakers would learn part of the system at least passively through the mass media. State-controlled television gives central attention to royal news. Here RT is heard in meaningful situations along with visual semantic cues.

Fictitious royals also evoke RT. Stories featuring princes, princesses, kings and queens would expose some children to the system at an early age. RT is used in well-attended traditional dramatic performances such as shadow puppetry and the semi-humorous folk opera li:ke:. Television presents serialized dramas with fictionalized royal characters, giving viewers a chance to hear RT in more-or-less natural discourse contexts. The result is that the great majority of the 60 million native speakers of Thai would have had at least a minimal passive exposure to RT and school-aged children would have been taught some of the system in the classroom. University students and government officials would need to have learned more to pass their examinations.

Although beyond our scope here, it should be mentioned that RT has points of contact with parallel registers of literary and ecclesiastical Thai. The latter is used when speaking to or about Buddhist monks and is lexically more limited. The Buddha himself however is always accorded monarch-level RT. (In a Sapir-Whorfian theological quandary, Christian

missionaries in Thailand have disagreed as to whether or not RT should be used in their messages too.)

2.7. Royal Thai as a native variety; ranks and differentiation

Several thousand Thai speakers would have learned RT as a native variety, along with CT. These are members of Thailand's hereditary aristocracy and, to varying degrees, children of service personnel brought up in aristocratic households. Since reigning monarchs of the 19th century had large harems and polygamy among princes was the norm, the number of households well into the mid 20th-century where RT was prescribed would have been in the hundreds. However, in the 20th-century kings have been monogamous so the number of RT-speaking households is steadily decreasing. Normally, great- and great-great-grandchildren of monarchs receive titles but do themselves not evoke RT. At the sixth generation from a monarch, descendants are considered commoners.

According to King Chulalongkorn (r. 1865–1910) in the 14th century only four royal ranks were recognized (Jones 1971: 11). The system gradually gained in complexity until, in the 19th century, 26 degrees were needed, at least to order ceremonial processions. At present, for linguistic purposes, seven ranks are distinguished by leading authorities (Posakritsana 1983: 193). The ranking applies to males and females alike. It is basically hereditary, but status is often adjusted or fine-tuned by special investing or by other circumstances as explained in more detail by Haas (1951) and Jones (1971).

The mainly hereditary context of the RT system mentioned here needs to be distinguished from a parallel hierarchy of conferred ranks and titles (Haas 1951; Jones 1971), similar to British knighthoods, etc. Special honours were formerly conferred on commoners, some carrying linguistic prescriptions, but the importance of the system has gradually lessened since the end of absolute monarchy in 1932.

A reigning monarch and spouse-consort are rank 1. The majority of royal grandchildren are rank 7 (or mɔ̀m·câw Mom Chao, the most numerous category of persons for whom RT is specified). Between these ranks are a monarch's children and those grandchildren who have been specially elevated or invested. A significant complexity of RT affecting certain lexical items is that in some cases different forms are prescribed for ranks 1-7, as in (4).

As an illustrative example, a royal granddaughter (rank 7) speaking to her children would normally use CT, even when speaking about herself. However RT would be used if she were referring to a senior relative (rank 7 or above). The children would be expected to answer their mother and refer to her actions in RT. They would speak among themselves in CT, but if they referred to other ranking 1-7 relatives, RT would be prescribed. Anecdotal evidence cited by Pramoj (1982) indicates that children brought up in such households do indeed become surprisingly fluent in controlling this complex mode of code-switching, differentiating RT sensitive to the ranks of various relatives.

(4) Comparison of lexical differentiation in Common and Royal Thai

(i) Common Thai	'to die'	'to eat'
CT-H (formal, polite)	thŭŋ˙kæ̀:˙kam ráppratha:n	
CT-H (informal, polite)	sǐə	tha:n
CT-L (colloquial)	ta:y	kin
CT-L (vulgar, intimate)	môŋ	dæ̀:k
(ii) Royal Thai		
RT-H (rank 1-2)	sawănkhót	sawɤ̌:y
RT-H (rank 3-4)	thiwákhót	sawɤ̌:y
RT-L (rank 5-6)	sîn˙phrá˙chon	sawɤ̌:y
RT-L (rank 7)	sîn˙chi:phíthâksăy	sawɤ̌:y

The manuals mentioned above cite multiple forms for RT when they are prescribed for different ranks. In spite of the complexity of (4), for most purposes below it will be adequate to distinguish only RT-H, appropriate for monarch and immediate family (ranks 1-2) and RT-L, specified for grandchildren (rank 7, Mom Chao). Ranks 3-6 most frequently coincide with one or the other of these, but exactly how depends on individual items and also on the particular authority prescribing them.

To the extent that RT is spoken as a spontaneous code in situations such as those noted above, it is subject to further variation along a dimension that could roughly be described as casual to careful mode of articulation.

Roengpitya's work (1973: 102) documents instances of an informal spoken subvariety of RT used in aristocratic households. In the right circumstances, reports Roengpitya, polysyllabic forms are truncated and articulated as monosyllables, following a similar tendency in casual speech characterizing CT. A prescribed RT form like sawɤ̌:y 'to eat' (4) will thus be realized colloquially as wɤ̌:y. Compare two pronunciations of a noun meaning 'university' in CT: mahǎ:wíthaya:lay (careful) mǎ:wítlay (casual). A fuller description of RT would need to take up this interesting dimension of variation but for present purposes we will have to leave it aside.

Formal-colloquial variation in idiomatic or formulaic expressions can be seen in the short formula nay˙lŭəŋ [in + royal], a colloquial yet still respectful way to refer to a reigning Thai monarch, contrasting with longer royal titles used in formal circumstances.

3. Nouns in Royal and Common Thai

3.1. Inalienable possession: body parts

(5) Body parts and substances

	CT -L	CT -H
foot	ti:n	thá:w
hand	mɯ:	mɯ:
eye	ta:	ta:
heart, mind	cay	cay
blood	lɯ̂ət	lo:hìt
prostate gland	tòm˙lû:k˙mà:k	(=)

	RT -L	RT -H
foot	bà:t	phrá˙bà:t
hand	hàt	phrá˙hàt
eye	nê:t	phrá˙nê:t
heart, mind	hàthay	phrá˙harɯ́˙thay
blood	lo:hìt	phrá˙lo:hìt
prostate gland	tòm˙lû:k˙mà:k	(=)

(5) illustrates one class of basic relationships between CT and RT nouns. A few nouns are maximally differentiated, such as forms meaning 'head' and 'foot'. In CT among intimates the form ti:n is the colloquial way to refer to an animal's foot; to use it of a human would border on vulgarity. Among educated urban speakers the form thá:w would be heard instead and this would also be preferred, in formal writing, even for animals' feet. Choice of L ti:n or H thá:w thus depends not only on the semantics of whose feet are being referred to but also on the pragmatics of discourse context, genre and social identity of interlocutors. Even personality and transient mood can enter into selection. In normal RT, only semantics – the rank of the royal person whose feet are being referred to – is relevant for distinguishing L bà:t from H phrá˙bà:t. Criteria for distinguishing H from L are thus partly shared by RT and CT but differ in detail.

On the morphophonemic level, (5) illustrates that at least for most body-part terms RT derives H forms from L through prefixing the syllable phrá˙ originally meaning 'most-excellent, splendid, best, noble' but here in effect a RT-H marker (Ketprathum 2001: 111). Occasionally, as for 'heart, mind', other changes are also indicated. Etymologically, the base RT-L forms are derived from a tonally and segmentally assimilated version of corresponding Indic (mainly Sanskrit) nouns for body parts.

(Because of remote Indo-European etymological relationships, RT forms can sometimes be linked with cognates in English or other European languages, although sound changes may mask the relationships. Through Indo-European, RT harúe˙thay is cognate to English 'heart'. Similarly: hàt : 'hand', bà:t : 'foot', na:sǎ: : 'nose', cha:nú : 'knee', etc.)

Inspection of (5) reveals that for 'hand', 'eye' and 'heart, mind' CT does not differentiate L and H forms and this is true for the majority of body-part nouns. That is, unlike the case of 'foot', for 'eye' there is difference neither as to whether reference is made to an animal's eye or to a human's, nor as to whether the context of mention is formal, informal, educated, etc. For 'eye', only RT shows differentiation based on royal rank of whose eye is being mentioned. For items like 'blood' however the distribution is different. Etymologically, in CT the inherited Tai form lûəd functions as the L item meaning 'blood', whereas H in CT is lo:hìt , derived from Sanskrit for 'the red substance'. The latter form is also used in RT, where H prefixes phrá as above. Items like 'blood' are important in establishing that CT and RT are interlinked lexical systems.

Finally, (5) indicates that for 'prostate gland' and for other internal organs of less linguistic salience in the past, no differentiation at all is

observed between CT and RT nor is there any L/H difference. The item is everywhere a shape-based metaphorical compounding, literally [gland + [offspring (of) areca nut]]. This form is now well-known as it occurred frequently in official palace reports regarding a royal hospital stay (Matichon 2002).

3.2. Personal items

For personal items and clothing, some, but not all, of the above body-part distributional principles apply and different subsets need to be distinguished. Just as 'foot' is maximally proliferated in (5), so is 'shoe' in (6). On the other hand, in a manner parallel with 'prostate gland', no differentiation is prescribed for nouns like the recent English loan 'saxophone' – frequently used in association with King Bhumibol, noted as a performer on this instrument.

(6) Maximal and minimal differentiation in personal items

	CT-L	CT-H
shoe	kŵək	rɔ́:ŋ˙thá:w
saxophone	sǽkso:fo:n	(=)
	RT-L	**RT-H**
shoe	rɔ́:ŋ˙ phrá˙bà:t	chalɔ̌:ŋ˙phrá˙bà:t
saxophone	sǽkso:fo:n	(=)

Only a few personal items in CT show L/H differentiation, such as 'medicine' and 'laxative' (cp. thà:y 'expel') in (7). As with 'blood' above, these items demonstrate the interlinked nature of the CT and RT lexical systems. For the RT equivalents, RT-L coincides with CT-H, while RT-H is formed through prefixation as above.

(7) Personal items, set 1

	CT-L	CT-H
umbrella	rôm	(=)
trousers	ka:ŋke:ŋ	(=)
medicine	ya:	o:sòt
laxative	ya:ˈthà:y	o:sòtˈthà:y
chair	kâw?î:	(=)

	RT-L	RT-H
umbrella	klòt	phráˈklòt
trousers	saǹapˈphlaw	phráˈsaǹapˈphlaw
medicine	o:sòt	phráˈo:sòt
laxative	o:sòtˈthà:y	phráˈo:sòtˈthà:y
chair	kâw?î:	phráˈkâw?î:

(8) Personal items, set 2

	CT, RT-L	RT-H
eyeglasses	wæ̂nˈta:	chalɔ̌:ŋˈphráˈnê:t
shirt	sûə	chalɔ̌:ŋˈphráˈoŋ
undershirt	sûəˈnay	chalɔ̌:ŋˈphráˈkɔ:nˈnó:y

For items shown in (8) distribution is simplified. Here authorities show a simple two-way contrast with the two morphemes chalɔ̌:ŋˈ and phráˈ used together to form RT-H items (Ratchabanditayasathan 1982: 247). These are prefixed to Indic body-part terms as in (5) to form associated nouns. chalɔ̌:ŋ in ordinary CT functions as a verb meaning ‘to celebrate, glorify’ but in RT the form appears to function more as a nominal compounding head meaning approximately ‘glory’; hence a king’s eyeglasses would be conveyed by the substitute phrase ‘glory of the most-excellent eyes’.

Cutlery used by the immediate royal family is formed on pattern of (8), as in (9), with Indic-derived hàt ‘hand’, hence ‘glory of the most-excellent hand’. The common Thai word for an implement may optionally be added as a qualifier.

(9) Cutlery

	CT, RT-L	RT-H
spoon	chó:n	chalǒ:ŋ˙phrá˙hàt˙chó:n
fork	sôm	chalǒ:ŋ˙phrá˙hàt˙sôm
chopsticks	takìəp	chalǒ:ŋ˙phrá˙hàt˙takìəp

If personal items are sharp, then the pattern in (10) is used, with RT featuring a root word of Khmero-Indic origin, prefixed with phrá˙sǎ:ŋ ‘weapon’. For other items of this type, the CT item itself is so prefixed.

(10) Sharp items and weapons

	CT, RT-L	RT-H
razor	mî:t˙ko:n	phrá˙sǎ:ŋ˙kanbìt
tweezers	næ̀:p	phrá˙sǎ:ŋ˙kàtsà
sword	dà:p	phrá˙sǎ:ŋ˙dà:p
club	krabì:	phrá˙sǎ:ŋ˙krabì:
gun	pɯ:n	phrá˙sǎ:ŋ˙pɯ:n

3.3. Kinship terms

In (1)-(10) lexical meanings have been held constant across varieties as suggested by shared English glosses. In other nominal sets, such as kinship terms, semantic contrasts are arranged differently and lexical relationships are not really binary. (11a) shows a kinship subset: terms for a monarch’s uncles and aunts. These do not show L/H differentiation in CT and in this particular case kin terms for royal ranks 2-7 follow CT, usually with added titles of respect (Posakritsana 1983: 195). For a monarch’s kin however semantic features of relative age, side of family and gender of relative must be realigned as shown in (11b). For RT-H, bound morphemes ma:˙ and pì˙ indicating female and male descent lines are organized along with other morphemes in a tight polysyllabic paradigm, whereas CT covers the semantic area differently with monosyllables.

(11) a. Kinship terms: aunts and uncles

	CT, RT-L	RT-H (rank 1)
maternal side		
aunt older than mo.	pâ:	phrá·ma:·tùt·chă:
aunt younger than mo.	ná:	phrá·ma:·tùt·chă:
uncle older than mo.	luŋ	phrá·ma:·tu·la:
uncle younger than mo.	ná:	phrá·ma:·tu·la:
paternal side		
aunt older than fa.	pâ:	phrá·pì·tùt·chă:
aunt younger than fa.	a:	phrá·pì·tùt·chă:
uncle older than fa.	luŋ	phrá·pì·tu·la:
uncle younger than fa.	a:	phrá·pì·tu·la:

(11) b. Semantic components distinguished in (11a)

	side of family	gender	age relative to parent
COMMON	if younger	if older than parent	always
ROYAL	always	always	never

3.4. Differential semantic organisation in other lexical sets

Sets such as (11a) erode the claim that simple lexical substitutions alone can fully elucidate CT/RT relationships. If lexicosemantic detail is considered, further evidence is not hard to find. For the sets in (8)-(10), a constant compounding head for RT-H in effect marks out semantic generic groupings not overtly marked in CT. Other sets include common foods and names of meals, where RT employs the prefixal compounding head khrûəŋ as in khrûəŋ·khâ:w·phàt ‘fried rice’; compare the simpler CT equivalent khâ:w·phàt. Similar khrûəŋ expressions cover ‘rice soup’, ‘desert, sweets’, ‘snacks’, ‘breakfast’, ‘lunch’, etc. where CT equivalents omit khrûəŋ (Yumonthian 1993: 42).

Contrariwise, lexical sets in CT, but not in RT, may show a constant generic compounding head. One such set of high frequency is based on the noun ná:m 'water, liquid'. Many liquid substances are coded in CT by these formally cohesive 'liquid' compounds, including drinking water, milk, perfume, saliva, tears, etc. In RT however these are separate Indic-derived nouns with no explicit generic component meaning 'liquid' uniting them (Phibanthaen 2001: 39-40, with 15 such forms cited).

In more complex cases, the same lexical form is used as generic compounding head both in RT and in CT (or in the common RT/CT lexical core) but with different functions. Thus khrûəŋ cited above occurs in common core vocabulary as a noun meaning 'apparatus, enhancing agent' with over a hundred associated compounds covering motors, engines, spare parts, musical instruments and even cosmetics, costumes and spices. However, for 'fried rice' or names of foods and meals as noted for RT above, khrûəŋ compounds would not be appropriate in CT. In such cases then, RT is characterized by selective expansion of the semantic range associated with a generic compounding head used more restrictively in the common register. Consequently, an account of the RT/CT relationship focused only on isomorphic substitutions would miss these semantic processes.

3.5. Degrees of speech-level differentiation: the case of animal terms

Other semantically based nominal sets show CT-L/CT-H speech-level differentiation but are less directly concerned with CT/RT alternations than the preceding sets involved with inalienable possession or habitual interaction. The animals indicated in (12) are one such group. As boxes in in columns H(1)-H(3) in (12) suggest, paired animal terms are actually arranged in a continuum with the point of L/H separation variable depending on the particular animal.

(12) Animals

	COMMON	LITERARY/ROYAL		
	L	H(1)	H(2)	H(3)
dog	mă:	sunák	sunák	sunák
buffalo	khwa:y	krabɯ:	krabɯ:	krabɯ:
cow	wuə	kho:	kho:	kho:

pig	mŭ:	mŭ:	sukɔ:n	sukɔ:n
monkey	liŋ	liŋ	wa:nɔ:n	wa:nɔ:n
horse	má:	má:	àtsawá	àtsawa
cat	mæ:w	mæ:w	mæ:w	wíla:n
rabbit	kratà:y	kratà:y	kratà:y	să:sà
turtle	tàw	tàw	tàw	cìtracun
fish	pla:	pla:	pla:	mátchă:
aquatic leech	pliŋ	pliŋ	pliŋ	chanluka:
tiger	sŭə˙khrô:ŋ	(=)	(=)	(=)

For ‘dog’, there is especially low tolerance for the CT-L form mă:. The higher form sunák is known by all Thai speakers and is regularly used in polite speech and writing. (Unlike the ‘cur’/‘hound’ pair in English, the Thai distinction is stylistic and interactional, not implying specifically canine denotative or connotative nuances.) This is similar to the distribution of ‘foot’ ti:n and thá:w in (4). For ‘cat’ however the situation is reversed (Ketprathum 2001: 88). The lower form mæ:w occurs almost universally. In fact, the “super” high substitute wíla:n is unfamiliar to many native speakers and is effectively confined to archaic poetry and advanced examinations. Except for these cases, one would conclude that ‘cat’ in Thai is handled by the core vocabulary item mæ:w, suitable for all registers. Similarly: ‘rabbit’, ‘turtle’, ‘fish’ and ‘leech’.

With items for which two nominal terms are available, RT manuals prescribe that the higher term is to be used in the presence of or when associated with a royal person. In actual usage however there is great flexibility. The higher form for ‘dog’ is far more likely to be heard in a royal context than the higher form for ‘cat’. When royal persons ride horses, even official news sources are more apt to use the lower form má: than the specified higher àtsawá; see (15).

3.6. Sequenced affixation and sandhi

Examples above have illustrated one way to form RT alternates: through prefixation or infixal treatment of special bound morphemes, including phrá, chalŏ:ŋ and săk:ŋ. (These processes would not constitute infixation in the strict sense of application within a single morpheme.) Bound morphemes may occur together in predictable configurations such as in (13), featuring derivatives from Sanskrit *ra:ja* ‘king’ and *parama* ‘first, foremost’. In sets like (13), there is a sequenced series of morphemes

A-D forming ranked compounds of form D, AD, ACD, ABCD. In general, the longer the compound, the higher the rank of indicated royal person. For ‘son’, the formal and literary term for ‘crown prince’ is thus phrá˙borom˙râ:tcha˙o:rót while other aristocratic sons are referred to with shorter terms as appropriate. The infix ˙borom˙ is correctly applied only to nouns associated with a reigning monarch.

(13) Differentiation through sequenced affixation

son	(i)	o:rót	archaic CT; RT, of rank 7
	(ii)	phrá˙o:rót	RT, of rank 3-6
	(iii)	phrá˙râ:tcha˙o:rót	RT, of rank 2
	(iv)	phrá˙borom˙râ:tcha˙o:rót	RT, of rank 1
decree	(i)	o:ŋka:n	CT and RT, of rank 7
	(ii)	phrá˙o:ŋka:n	RT, of rank 3-6
	(iii)	phrá˙râ:tcha˙o:ŋka:n	RT, of rank 2
	(iv)	phrá˙borom˙râ:tcha˙o:ŋka:n	RT, of rank 1

The paradigm illustrated in (13) includes most nouns referring to orders, decrees, decisions, etc., as well as to a monarch’s direct-line immediate kin. However the full paradigm is not prescribed for, nor acceptable with, all semantic sets. If phrá˙borom˙râ:tcha˙bà:t for ‘king’s foot’ or chalŏ:ŋ˙phrá˙borom˙râ:tcha˙nê:t for ‘king’s eyeglasses’ were derived instead of forms shown in (5) and (8), the effect would be ludicrous. Thus semantic taxonomy is an important constraint on morphophonemic rule application.

Outside of the semantic areas illustrated in (13) there are sporadic items of similar form, but showing variations on the general pattern: phrá˙borom˙de:cha:nuphâ:p ‘royal power’ omits syllable ˙râ:tcha˙ ; similarly for ‘royal remains’, etc. A few items add extra morphemes: phrá˙borom˙mahă:˙râ:tcha˙waŋ ‘grand palace’ (with infixal ˙mahă:˙ ‘great’).

Conversely, for what one authority (Yumonthian 1993: 20) describes as “neutral or ordinary usage”, compounds are acceptable which simply prefix râ:tcha˙ ‘royal’ to Indic-provenance nouns: râ:tcha˙tha:ni: ‘royal location’; râ:tcha˙sŏmbàt ‘royal property’, râ:tcha˙thû:t

'ambassador', etc. The process is apparently semi-productive, with 45 such compounds listed in the official Thai Royal Institute dictionary (Ratchabanditsathan 1982: 693; in fact, *ratchabanditsathan* 'royal institute' itself is an example of this construction type).

Occasionally sandhi operations apply, as in (14). Compare also o:kà:t, waro:kà:t 'occasion' and a:yú, phrá˙chonnáma:yú 'age' (3), illustrating further prefixal possibilities.

(14) Differentiation and sandhi elision for item meaning 'policy'

CT-H, RT-L	nayo:ba:y
RT-H(rank 2)	phrárâ:tcho:ba:y
RT-H(rank 1)	phráboromrâ:tcho:ba:y

3.7. Genitive marking

Possession is indicated in CT through a pattern of normal noun phrase modification: possessed (head) noun followed by possessor, optionally with intervening marker khɔ̌:ŋ, or hæ̀ŋ for abstract entities. For RT, most commonly royal possession is indirectly suggested through use of an RT-marked noun, such as in the constructions introduced above. However if possession by a particular royal person is to be emphasized, more explicit formulae are available. When a monarch is possessor, for a set of entities including decrees, writings, etc., the preferred strategy is to use the construction type [possessed noun + nay + royal possessor].

(The form nay occurs also in CT but not as a genitive marker. Rather, it has locative functions: 'in, inside'. In a limited push-chain operation, locative functions in RT may then be covered by another Khmer-derived preposition: ná 'in, inside, at, on'. This RT genitive thus employs the CT syntactic form for genitive constructions but with a reinterpreted form as marker.)

To indicate physical objects used or possessed by a monarch, another possibility is to employ suffixal formulae in tôn, lŭəŋ, or phrá˙thî:˙nâŋ. The first two occur as unbound lexemes in CT, tôn meaning 'base, stalk' and lŭəŋ 'great, public'. These genitives are unusual in current practice. More frequent is the suffixal phrase phrá˙thî:˙nâŋ [glorious + place + sit] 'royal seat' added to vehicles carrying a royal passenger. In other contexts this phrase can mean 'royal seat' in the sense

of 'buttocks' (Kankuson 1985: 104). To mark possession or similar genitive associations for other royal persons, soŋ, a royalising verb form treated in 7.3, can be used as a nominal modifier. For conveyances such as boats or cars, ˈthîːˈnâŋ [place + sit], a shortened version of the monarch's form, can be appended (Yumonthian 1993: 19). (15) illustrates a range of suffixal possibilities, each with a different nuance.

(15) Suffixal genitive markers

	CT ,	RT-L	RT-H
gun	pɯːn	pɯːnˈsoŋ	phráˈsǎ̆ːŋˈpɯːnˈtôn
boat	rɯə	rɯəˈthîːˈnâŋ	rɯəˈphráˈthîːˈnâŋ
car	rót	rótˈthîːˈnâŋ	rótˈphráˈthîːˈnâŋ
horse	má:	máːˈsoŋ	máˈtôn, máˈlŭəŋ

4. RT first- and second-person pronominal terms

(16) Sequenced morpheme compounding for second-person royal pronominal reference

tây	fà:	láʔɔːŋ	thúli:	phráˈbàːt	
+	+	+	+	+	to rank 1
+	+	+		+	to rank 2
+	+			+	to ranks-3-6
	+			+	to rank 7

The CT pronominal and personal reference system is known for its sociolinguistic complexity, described in detail elsewhere (Chirasombutti and Diller, 2000). RT first- and second-person personal reference, while complex, is also systematic in that selection is based on rank of addressee. A complication is substantial variation in usage over several centuries. As a result, while authorities agree on most forms comprising the system, they may disagree as to how forms are to be applied. Ketprathum's (2001: 60–62) usage descriptions are summarized in (16) and (17); for somewhat different prescriptions, see Yumonthian (1993: 57–60).

(16) is intended to indicate schematically how second-person forms are built up from five morphemes in a sequenced set. Selections yield the form [fàːphrábàːt] for rank 7 and increase in syllables on up to octosyllabic [tâyfàːláʔɔːŋthúliːphrábàːt]. This additive scheme recalls the

sequentially constructed nouns in (13) but the formula sequence for the pronominals is slightly different: BE, ABE, ABCE, ABCDE. Components ABCDE literally mean [under][sole][dust(1)][dust(2)][foot$_R$], as though one were addressing the dust under the royal foot rather than the foot's owner directly (Chantornvong 1992).

Most first-person forms are built up in a similar way. Thus [mòmchăn] to [klâwkramòmchăn] as indicated in (17) shows staged components CD, BCD, BC, ABC and ABCD (Posakritsana 1983: 212–114). The basic reference in these cases is to the top of the head, considered the most sacral part of the body (Juntanamalaga 1992). A separate form khâphráphúttha câw 'servant of the Lord Buddha' is the specified first-person form when speaking to a king or other royal person of rank 1-3, indicated as (a); (b)-(f) show the sequence other first-person forms sensitive to descending rank of addressee.

(17) Sequenced morphemes compounded for first-person pronominal reference

(a) khâ·phrá·phúttha·câw

	klâw	kra	mòm	chăn
(b)	+	+	+	+
(c)	+	+	+	
(d)		+	+	
(e)		+	+	+
(f)			+	+

5. Classifiers and third-person reference

Thai has a well-developed system of classifiers (Aikhenvald 2000). Many are sensitive to CT speech-level (Juntanamalaga 1988). The basic CT-L classifier constructions along with some 20 high-frequency classifiers are learned naturally by young children but CT-H lexical elaboration of less frequent classifiers continues throughout formal schooling. Presentation of the total prescriptive system requires a book of 128 pages, with about 3000 entries (Ratchabandithayasathan 1995). RT in the first instance specifies these CT-H classifier selections but with a few idiosyncratic shifts. For example, in (1) we saw that 'year', an item which functions as a measure in classifier position, requires a special form in RT.

If royal persons are referred to in classifier constructions, then special classifiers are used: rank 1-3: phrá?oŋ; rank 4-7: oŋ. The latter classifier also serves for royal body parts, as in (18), and for additional sacral items such as thrones. phrá?oŋ also serves as the most common third-personal reference form for royalty; see (24).

A few frequent CT classifiers undergo effective tabooing: bay (containers, roundish items), tuə (animals, animal-like items) and an (a general classifier for small implements) are not to be used in RT at all, with accommodation through use of a repeater construction as in (19). Note the difference between CT-H, where high lexical substitution has occurred but the common classifier tuə is retained, and RT where the latter suffers taboo and the repeater construction is used instead. Tabooing is said by some consultants to be due to avoiding figurative sexual connotations of the three offending classifiers.

(18) Variation in classifier constructions

CT-L/H			RT-L/H				
mi:	fan	sɔ̌:ŋ	sî	mi:	phráthon	sɔ̌:ŋ	oŋ
have	tooth	two	CLF	have	tooth_{R}	two	CLF
‘There are two teeth.’			‘There are two teeth (of a royal person).’				

(19)

CT-L

mi:	wuə	sɔ̌:ŋ	tuə
have	cow_{L}	two	CLF

‘There are two cows.’

CT-H			RT-L/H				
mi:	kho:	sɔ̌:ŋ	tuə	mi:	kho:	sɔ̌:ŋ	kho:
have	cow_{H}two	CLF	have	cow_{H}	two	cow_{H}	
‘There are two cows.’			‘There are two cows.’				

6. ABAC constructions

A morphosyntactic process common in Southeast Asian languages is the formation of so-called 4-syllable expansions or "elaborate expressions" (Haas 1964: xvii). In one frequent CT pattern, sequences AB and AC are conjoined to form ABAC, where B and C are synonyms, antonyms or in another close semantic relationship (recalling English *easy come, easy go* or *monkey see, monkey do*). Various CT subtypes can be formulated depending on morphological class of components and function of the resulting expression. For example, if A is a quantifier, constructions are generally productive and semantically predictable: [yîŋ yày yîŋ phæ:ŋ] 'more large, more expensive'; [tà:ŋ khon tà:ŋ pha:sǎ:] 'various person(s), various language(s)'. Other collocations are less transparent [thi: khray thi: man] 'time who time 3P' = 'when it's someone's turn, then their time's up (they must perform)'.

A particular version of the ABAC pattern is heavily utilized in RT. Recall that pronominal expressions in (17) feature the morphemes klâw and kramòm, both referring to the head – more precisely, to the scalp and crown/fontanel of the head. These items also occur as B and C respectively in the ABAC pattern above, yielding [A klâw A kramòm].

This pattern in turn becomes a component in RT formulaic opening and closing sequences, used especially when addressing the monarch on ceremonial occasions or in formal correspondence. For this purpose, the repeated component A is one of perhaps a dozen verbs with meanings like 'announce', 'cover', 'exceed', 'know'; along with a few closed-class forms. Selection of a particular lexical repeater as A in the formula is normatively regulated and specifies the exact nature of the associated speech act: whether the message is intended as a report, petition, expression of gratitude, admission of guilt, etc. (Kankuson 1985: 99). In similar manner, with A = sày 'to put on/in, place on', the above construction is used in utterance-closing formulae: as though '(may I receive your command and) place (it on my) scalp (and) place (it on the) crown/fontanel (of my head)' (Yumonthian 1993: 62–63). When A = prò:t 'to be pleased', then the resulting ABAC expression takes a high-ranking royal person as subject and, either alone or as part of a larger formula, means approximately '(the royal person) is/was pleased to ...', as in (25).

7. Verbs and verb phrases

The treatment of verbs and verb phrases in RT shares general features encountered above but requires extra considerations. *A basic principle of RT is that if a clausal subject refers to a royal person, then the predicate needs to be marked as "royal"*. This specifically applies to the main verb of the clause but also to selected secondary verbs, as discussed below. Sections 7.1-3 discuss how subject marking is accomplished. Then 7.4-5 consider cases where royal referent serves as direct object or dative/recipient. The royal referent triggering the following processes may be either overtly expressed as a noun or pronoun in superficial syntax or be interpreted (i.e. as the understood referent of a zero anaphor).

In terms of lexical variation by level and rank, a few verbal concepts are maximally differentiated both in RT and in CT: mainly life transitions such as 'to die' (4). Other verbs such as 'to eat' (4) have a single form prescribed for all levels of RT. What follows is simplified as regards this dimension.

7.1. Substitute verbs with royal referent functioning as transitive or intransitive subject

For royal referent as subject, if a RT substitute word is prescribed, then marking is of the four subtypes below. Otherwise "elsewhere" principles apply as in 7.3. It must be emphasized that semantic subject is the relevant trigger. This need not be overt in syntax. Thus zero-anaphor royal referents often account for verb marking in 7.1.1-4, in which case the marking can be seen also as having a reference tracking discourse function.

7.1.1.

A lexical verb substitute – a "proper" `ra:cha:sàp` item – is selected if available, as with `sawăngkhót` 'to die' or `sawy̌:y` 'to eat' in (4). The majority of verbs in this category focus on some manner of direct involvement or operation of the body, such as reclining, bathing, kissing, listening, watching, etc.

7.1.2.

If focus is on the royal subject moving, then the semantically generalized main verb form sadèt 'to proceed$_R$' is selected, optionally followed in a serial verb construction by another more specific verb, either common or royal (e.g. praphâ:t 'to tour$_R$'); thus sadèt praphâ:t 'to go on a tour.' A nominal complement is also possible after sadèt, as in sadèt phrá˙râ:tcha˙damnɤ:n 'to proceed in a royal progress'.

7.1.3.

If focus is on the royal subject staying in a location or position, then the main verb form pratháp 'to stay$_R$' is selected, often followed by another more specific RT or CT verb (e.g. pratháp ræ:m 'to spend the night [somewhere away from the normal residence]'.

7.1.4.

For the CT verbs mi: 'to have; to be [existential]' and pen 'to be [equivalent to; characterized by]' and a few other low-agentive verbs, if the postverbal noun is a proper RT substitute, then the predicate is deemed to be adequately marked without further process. Thus mi: phrá˙phák cæ̀m˙sǎy 'to have a happy expression'; pen phrá˙râ:tcha˙o:rót 'to be a royal son'. Nominals of the type illustrated in (13) are common in this construction.

A large and frequently-used subtype of these constructions consists of predicates of expression and communication. These use postverbal nominals such as in (20). To understand the CT/RT relationship, first we need to note that in CT the straightforward way of expressing the agentive notion 'speaking' is simply to use a transitive verb like phû:t 'to speak', followed optionally by a quotative complement. However for a less agentive and more existential alternative, mi: 'to have; to be [existential]' can be followed by the compound kham˙phû:t [word + speak] 'spoken word'; hence mi: kham˙phû:t 'something was said'. This expression can optionally take a "reduced-agency" preverbal subject, as though distancing the speaker somewhat from involvement or responsibility in the act of speaking. A quotative complement specifying what was said can be added.

Now in RT this less agentive mode of expression is a favourite construction type. It is a standard way of reporting that a royal person said something, wrote something, communicated something by letter or the like, with noun phrases as in (20). Similarly: '(write a) letter', '(send a) telegram', etc. See also (25).

(20) Noun phrases common in predicates after verb mi: 'to have; to be [existential]'

saying	CT	kham˙phû:t
	RT-L	phrá˙damràt
	RT-H	phrá˙râ:tcha˙damràt
thought	CT	khwa:m˙khít
	RT-L	phrá˙damrì
	RT-H	phrá˙râ:tcha˙damrì

7.2. Homonymous verbs

A source of practical confusion is that the same superficial form may occur both in CT and in RT but with different semantics. Whether to consider these to be cases of homonymy (two separate verbs that happen to coincide phonologically) or partial synonymy would depend on the analyst's viewpoint. Examples are shown in (21).

In yet a further complication, a homonym of sadèt 'to go' functions as a title or epithet for intermediate-rank royal persons (typically included in the royal entourage), so that the sentence sadèt N. sadèt could mean 'Princess N. went' – such homonymy being the source of much royal-milieu joking and wordplay (Pramoj 1981).

(21) Verb forms with differing interpretations

	CT meanings	**RT meanings**
damnɤ:n	conduct, continue (a procedure)	go, proceed
pratháp	stamp, impress	stay, remain, sit
soŋ	maintain, keep, be shaped	be engaged with, act on
chɤ:n	invite; please (proceed to do s.t.)	take, conduct, carry, lift
prò:t	be the favourite (one); please (formal)	be pleased to (act)
fâw	watch, guard	to attend, wait upon
chalŏ:ŋ	celebrate	see (8)-(9)

7.3. "Elsewhere" predicate constructions in soŋ

If 7.1 does not apply, then a special "royalising" verb form soŋ is used instead. This has rather generalized semantics: 'to be engaged in/with; operate on/with; demonstrate; act' and can be used with all royal ranks. In RT this light verb is used in one of the following three construction subtypes.

7.3.1.

For transitive clauses, when verbal semantics relates to a conventional process, then soŋ alone, treated in effect as main verb, followed by nominal is usually preferred. The exact action is then interpreted from context.

Thus: soŋ rwə˙bay 'to be engaged with a sail boat' = 'to go sailing'; soŋ rót 'to drive/ride in a car' – emphasis on the vehicle, rather than the trip, for which sadèt would be normal; soŋ má: 'to ride a horse'; soŋ kó:f 'to play golf'; soŋ sǽkso:fo:n 'to play the saxophone'; soŋ phrá˙aksŏ:n 'to be engaged with script$_R$' = 'to read, to study, to write' (exact meaning determined by context; Ketprathum 2001: 98). Formally similar to the preceding example, over a hundred RT transitive and semi-transitive predicate items are covered in this way through expressions in soŋ [phrá -[+N]]$_R$ 'to be engaged with [the royal N]$_R$' including such varied notions as deciding, recalling, being named, presenting alms, and smoking cigarettes.

In addition, semantically less transitive notions can be coded with the soŋ construction above, now recast as formal transitives. Such notions include being kind [=demonstrate kindness], being friendly, being angry, being pregnant, exerting effort, dancing, laughing, crying, dreaming, vomiting, urinating, and lamenting. The construction can be used for predicates of expression using forms in (20). Thus 'thinking' could be handled though soŋ phrá·râtcha·damrì 'engage in thought$_R$, plan something'; compare this with the less agentive and more existential alternative in (iv) above 'to have a thought occur to one'.

The normal expression for a monarch commanding something is soŋ phrá·karuna:·prò:t· klâw.prò:t·kramòm, [exercise + glorious + kindness + be-pleased + head$_1$+ be-pleased +head$_2$] incorporating an instance of the A·klâw· A·kramòm formation discussed above. See also (25).

7.3.2.

When the above conditions do not apply, then soŋ directly precedes the CT main verb of a matrix clause. Thus CT phaya:ya:m 'to try' does not have a prescribed RT lexical substitute, hence soŋ phaya:ya:m is specified for royal-subject RT (Posakritsana 1983: 204). Similarly cháy 'to use' (CT), soŋ cháy 'to use' (RT).

7.3.3.

Prescriptive texts categorically forbid the use of soŋ in the constructions summarized in 7.1 as though to prevent double marking of royal forms. Thus a sequence like soŋ sawɤ̌:y for 'to eat' is considered incorrect. In actual practice, even very respected academic authorities use double RT-coded expressions like soŋ sadèt pay 'to go' or soŋ mi: phrá.râtcha·damràt 'to say' (Charoenwongsak 2001: 8-9; Damrong-Rajanubhab and Narisaranuvattivongse 1963, vol. 20: 124). Moreover, a subset of royal-subject verbs is officially exceptional in employing soŋ along with prefixal phrá to adjust RT level upwards (Ketprathum 2001: 79; for a slightly different prescription, see Yumonthian 1993: 65).

(22) Predicates with complex royal morphosyntactic coding

	'to be ill'
CT	pùəy
RT-L (rank 7)	prachuən
RT-L (ranks 2-6)	soŋ prachuən
RT-H (rank 1)	soŋ phrá·phachuən

	'to be ordained'
CT	bùət
RT-L (rank 7)	phanùət
RT-L (ranks 2-6)	soŋ phanùət
RT-H (rank 1)	soŋ phrá·phanùət

7.4. Royal referent functioning as direct object

One of the most common RT transitive verbs used with a royal referent in semantic direct object function is fâw, having a rather generalized meaning of 'to attend, wait on'. This occurs either singly or in multiple-verb switch-reference constructions, e.g. [fâw ráp sadèt] [attend$_R$ receive proceed$_R$] 'to receive or wait on (a royal person who) comes (for a visit)', sometimes shortened to [fâw sadèt]. Switch reference subject can be deduced from verbal semantics, even when all overt nominals are unexpressed, as is frequently the case. Especially in the Thai cultural context, other transitive verbs with royal direct-object referents are used rather sparingly, with a fâw construction preferred if possible. Thus rather than reporting that "I saw the princess when she came", many speakers would prefer to rephrase this message as "I attended [fâw] as the princess arrived".

7.5. Royal referent functioning as indirect object

For verbal notions such as 'to give', semantic case roles associated with a verb in a given sentence are critical in selecting among RT alternates, as in (23). For a royal recipient, ranks 1-2, the lexical compound specified employs once again the formula A klâw A kramòm (section 6). Also,

selection requires further discrimination regarding features of direct object. If one royal person gives something to another one, the verb associated with the semantic case role of the higher ranking royal person is selected. In CT, other than in religious contexts, a single form hây is used, sensitive neither to semantic particulars of direct or indirect object nor to pragmatic features of speech level.

(23) Verbs 'to give'

(i) royal person is semantic subject/agent of 'to give'
rank 1-2 phrá˙râ:tcha˙tha:n
rank 3-7 phrá˙tha:n

(ii) royal person is semantic dative/indirect object of 'to give'
rank 1-2, dir. object carried by hand
thu:n˙klâw˙thu:n˙kramɔ̀m˙thawă:y
rank 1-2, dir. object larger item
nó:m˙klâw˙nó:m˙kramɔ̀m˙thawă:y
rank 3-7 thawă:y

(iii) commoners subject/agent and dative/recipient of 'to give'
(all levels) hây

8. Grammaticalisation as a constraint in rule application

A major class of failures to undergo normatively prescribed substitution for RT involves several high-frequency verb forms. Suspension of substitution is likely to happen when a verb form takes on meanings or functions removed from its core semantic and syntactic properties. Although I am not aware of prescriptive interest in this issue, in nearly any RT passage of more than a few clauses, some RT marking of common verb forms will not occur, even in texts by respected authorities.

(24) Usage of hây in causative function

phrá˙oŋ soŋ hây klùm tà:ŋ˙ tà:ŋ
3PSg$_R$ act$_R$ give/cause group various
mi: sùən˙rûəm
have participation
'His majesty had various groups participate' (Charoenwongsak 2001: 9).

The CT verb hây has core meaning 'to give' but it has developed a number of grammaticalized functions (Indrambarya 1992; Diller 2001). (24) illustrates a causative construction in which the extended meaning of hây is 'to cause, have someone do something'. Interestingly, in this situation hây resists substitution with the royal-agent 'give' verb phrá˙râ:tcha˙tha:n noted above. Instead, we find the soŋ construction. Recall that this is normally appropriate only under "elsewhere" conditions as described in 7.3.

In yet a further degree of grammaticalisation, (25) illustrates a complementizer function of hây to mark switch-reference complements after verbs of ordering, allowing, forcing, and the like. In this passage from a palace press release, hây no longer functions as a main verb and perhaps for that reason it resists both lexical substitution and also the soŋ "elsewhere" construction. Note also that in the embedded complement clause of (25) introduced by hây the 'royal matter' nominal phrá˙râ:tcha˙krasæ̌: is sufficient to trigger lexical substitution of governing verb 'take' from CT aw to RT chɤ:n . In other secondary-verb functions where a dative-benefactive meaning of hây is stronger and the recipient referent is a royal person, lexical substitution to thwǎ:y , as in (23), does in fact occur. Rather fine specifics of grammaticalisation are thus relevant to the question of when to make RT changes.

(25) Usages of hây to mark complement in controlled-action predicates

(i) RT controlled-action clause with king as zero-anaphor matrix-clause subject (Matichon, 11 February 2002)

nay ka:n ní: soŋ
in affair this act_R
phrá'karuna:'prò:t'klâw'prò:t'kramòm hây
$order_R$ give/cause
ch›:n phrá'râ:tcha'krasǎ: ma: cêŋ.
$take_R$ $matter_R$... come report
'In this affair (the king) ordered that the matter... be reported on.'

(ii) For comparison: CT analogue of (i)

nay ka:n ní: sàŋ hây aw rûəŋ ma: cêŋ.
in affair this order give take matter... come report
'In this affair (a commoner) ordered the matter...to be reported on.'

Similarly, for basic verbs of directed motion such as pay 'to go' and ma: 'to come' a grammaticalized directional-marking function appears to reduce the subject properties which trigger RT. Thus the serial construction sadèt praphâ:t pay NP would be used when a royal person was going somewhere (goal NP) on a tour. Note that CT directionals pay and ma: are admissible as grammaticalized secondary verbs in this sadèt construction and similar ones but they are not acceptable alone as main verbs with royal subjects. It is also clear from this example that we cannot simply formulate a superficial rule that only the first verb form in a serial construction is RT-marked. In this case the second verb praphâ:t 'to tour' is a specified RT substitute for CT thîəw.

We can surmise then that competent users of RT have internal a taxonomy of predicate argument semantics and differential grammaticalisation patterns. These are relied on implicitly by speakers to decide whether or not to make prescribed substitutions. For one analysing grammar, this ability then becomes a new tool for probing linguistic processes – in particular, to determine how degrees of grammaticalisation might relate semantics to syntactic configuration. It is too early to see just where this line of inquiry might lead, but it is surely a lead worth following.

9. Taboo and circumlocution

Stronger tabooing of certain lexical items and phrases can perhaps be distinguished from the more general types of lexical substitution treated above – also arguably taboo processes in a general sense. The avoidance of certain common classifiers with functional replacement through repeater constructions is mentioned in section 5.

Predictably, "rude" bodily-function actions would not be mentioned in the royal presence, but a few surprisingly "innocent" verbs are similarly proscribed, or at least restricted. The high-frequency CT verb sày 'to put in/on; place; wear' is considered taboo when its subject refers to a royal person and goal/locative argument is a physical place, whether overt or covert. One authority (Yumonthian 1993: 73-74) lists 25 circumlocutions used to avoid this verb, depending on specific target locations. 'To put in a boat' becomes 'to load a boat'; 'to put in chains' becomes 'to confine in chains; 'to put in a box' becomes 'to have enter a box', 'to put in a pot' becomes 'to fill a pot (with)', etc. For reasons unclear, King Rama IV (r. 1850-1865) wished this verb to be used only with abstract goal/locatives, e.g. 'to put into the account' (Diller 2001: 234-236). His sentiments appear to have been incorporated into ongoing norms of usage. (Section 6 includes a RT expression where this verb is acceptable.)

Further taboos follow from Thai word games. In one traditional pastime called kham phŭən 'reversed words', syllable-initial components of compounds are interchanged. For RT, avoidance is prescribed for a compound or phrasal expression which, if initials were switched, would produce an "off-colour" expression. Thus the compound [phàk·bûŋ] [vegetable + sp. aquatic plant] is the name of a favourite Thai food, the common edible leaf *Ipomoea aquatica*. This compound must be avoided in RT because of interchanged result [bàk·phûŋ] [penis + thrust]. The prescribed circumlocution is [phàk·thô:t·yô:t] [vegetable + cast + top], 'greens that spread at the top'. Similarly, the phrasal expression [sì:·hæ̀ŋ] [four + place] 'four locations', interchanged, is uncomfortably close to [hĭ:·sæ:ŋ] [vagina + overtake], so one should use a synonym instead, hence: [sì:·tambon] 'four locales'. Manuals include lists of proscribed compounds and phrases with suggested circumlocutions (Ketprathum 2001: 94-95). However, these lists could hardly be exhaustive. Those fluent in spoken RT would need to develop the skill of monitoring potentially dangerous phonological patterns, of blocking their articulation and of substituting appropriate circumlocutions, all in real time.

10. Conclusion

In brief, a grammar of the Thai language would need to characterize royal Thai as the upper region of an interlocking diglossic register complex formed mainly through lexical variation, but with at least quantitative differences in construction types. Lexical relations between common speech and the higher registers cannot always be accounted for through one-to-one substitutions. In particular, semantics cannot be assumed as isomorphic between registers.

Semantically, a guiding generalisation for royal Thai is that the more a noun or verb refers to an item or action associated with a royal person's body, the more likely that a special lexical substitute will be needed. Body part nouns, kinship terms and personal reference forms are highly affected. This differs from avoidance styles such as Jalnguy, for example, where grandparent terms and pronouns are not among special alternates (Dixon 1982: 66). On the other hand, royal Thai verbs often show the many-to-one pattern of generalized meaning one finds in Australian avoidance styles. For example, Haviland (1979:218) reports a Guugu Yimidhirr avoidance verb `balil` which has a generalized semantics of going or travelling, closely paralleling royal Thai meaning of `sadèt` described above. The importance of semantics in organising morphosyntactic subtypes of royal Thai has also been shown above. Thus specialized morphological subprocesses are indicated for sets like body parts, cutlery, weapons, uncles and aunts and other semantic groups.

Most constructions in clausal syntax vary in frequency of usage rather than categorically, but morphophonemic compounding principles make the higher and lower registers look somewhat different typologically. Common Thai is mainly monosyllabic and isolating, forming compounds on a head-first principle. Quantitatively at least, royal Thai is highly polysyllabic and derivationally agglutinating, often forming head-final compounds. Rather complex morphophonemic derivations are also a feature of royal Thai,with patterns such as BC expanded to ABAC or to ABCD, depending on subtype. Of particular interest is verb coding in this register, where substitutions are constrained by construction type and, apparently, by degrees of grammaticalisation. Further analysis of this distribution is likely to deliver new insights about Thai more generally. Such findings would resonate with the Guwal/Jalnguy semantic relationships in Dyirbal.

Method is another issue raised by polylectal variation. The preceding sketch has relied partly on normative textbooks, partly on individual

interviews with speakers of varying degrees of competence in the special register, partly on natural recordings and texts and partly on study of possible etymological source materials in other languages. An eclectic combination methods seems to be what is needed to probe polylectal grammars effectively. Since typically not all speakers in a community are equally proficient in the special register, the status of generalisations may be problematic and cross-checking becomes especially important. Dixon (1984: 177) relates how one Yidinj speaker, with fading memories of Yidinj avoidance forms, "fudged" by coming up with words actually from the normal style of a neighbouring language, Mamu. For some Yidinj avoidance vocabulary, Mamu was indeed the source. What this speaker did was to over-extend etymological reliance on a "lexical other" to create special-register forms at will. This ruse was found out five years afterwards in the course of cross-checking.

Etymological over-reliance on the "lexical other" can also be a trap for Western-oriented investigators encountering high registers or polylectal phenomena in languages like Thai, Burmese, Bangla or Sinhala. These display what seems to be classical Indic vocabulary that is acknowledged as a difficult sort of traditional lore. Erudite speakers typically gain the community's esteem by creating appropriate neologisms or through rhetorical manipulating of classical words and roots. Uncritical reliance on the academic apparatus standard for studying classical source languages may lead to "fudging" on the part of the researcher. This is through assuming that adequate explanation of special register phenomena is merely a matter of tracing forms back to their etymological sources. What a Sanskrit-English dictionary or a Western grammatical exegesis may say about forms and meanings is not necessarily the local system that a Burmese, Bangla or Sinhala diglossic expert has internalized. As we have seen above for Thai, Indic bits and pieces may be reinterpreted and reassembled in myriad novel ways. These follow local semantic constraints, sensibilities and morphosyntactic operations. Relevant rule prototypes may or may not be found in Sanskrit grammars.

Polylectal situations of this sort present special descriptive challenges. The grammar writer might be inclined to emphasize easy-to-explain unified processes, such as strictly one-to-one lexical substitutions. In league with our Yidinj consultant above, one might be tempted to rely on an isomorphic "lexical other" as a practical expedient or as an explanatory mechanism. Grammar writing of this bent could impose too tidy an algorithm on what is really a more challenging set of questions. Admittedly, it takes extra pages

of a grammar to depict a polylectal continuum or to explicate an intricate diglossic series.

All grammars run the risk of perusal in the armchairs of imprudent theoreticians, but comfortably neat accounts should be seen as especially perilous when polylectal variation has been under-described. The unwary theoretician could be lulled into confirmation of favourite parameters or be charmed into other visions of oversimplified typology. On the other hand, as with Jalnguy, special-style phenomena when adequately researched and described have the potential to reveal general insights that move linguistic theory ahead.

Notes

1. Transcription note: a straightforward adaptation of the Haas system for Thai is used, with tones marked à low, â falling, á high, ǎ rising, unmarked, mid-neutral. Predictable glottal stops are not indicated.

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Writing culture in grammar in the Americanist tradition

Jane H. Hill

Throughout the twentieth century, the Americanist tradition in linguistics placed the interaction between grammar and culture at the center of its project. The founders of the modern development of the tradition in the twentieth century, especially Franz Boas, Edward Sapir, and Benjamin Whorf, wrote major theoretical statements about the relationships between language and culture, and linguists formed in the Americanist tradition continue to produce such statements. Yet, if we examine monographs and sketches written by these authors under titles like "Grammar of X" or "The X Language", we find that their theoretical work on language and culture had little impact on their practice as grammarians. The present paper will evaluate the ways in which attention to "writing culture in grammar" does and does not appear in this tradition.

There are at least five ways in which a linguist might "write culture in grammar".

1) A grammar can include background material on the history and culture of the language community, including dialectology and comparative statements, but with attention as well to cultural geography, modes of subsistence, social organization, and ritual life.

2) Example words, constructions, and sentences in the grammar implicitly reflect culturally-appropriate usage, either because they were uttered in some context other than elicitation, or because they were drawn from a corpus of texts.

3) Explicit attention is given in the grammar to usage, including discussion of idioms, conversation, and other characteristic discourse structures.

4) Explicit attention is given in the grammar to the ways in which grammatical categories and constructions may imply cognitive categories, and either reflect or shape cultural forms.

5) The internal logic of a language, including both covert and overt categories, rather than categories drawn from universal grammar or typological theory, shapes the organization of description in the grammar.

Since the Americanist tradition was self-consciously developed as a part of a general anthropology, we would predict a well-developed presence of all of the above components as a part of Americanist grammatical practice. Franz Boas, who had definitively demonstrated the impact of the forms of language on the forms of thought in his great essay on sound perception of 1889, "On alternating sounds," wrote in 1911 an eloquent justification for why linguists should study the grammar of the languages of the Americas. In his "Introduction" to the *Handbook of American Indian Languages* Boas pointed out that

> ... language seems to be one of the most instructive fields of inquiry in an investigation of the formation of the fundamental ethnic ideas. The great advantage that linguistics offer in this respect is the fact that, on the whole, the categories which are formed always remain unconscious, and that for this reason the processes which lead to their formation can be followed, without the misleading and disturbing factors of secondary explanations, which are so common in ethnology, so much so that they generally obscure the real history of the development of ideas entirely. (Boas 1911a: 71)

Boas proposed several projects suggested by this basic insight. In addition to its promise of new methods for the psychological dimension in local ethnographic interpretation, it contributed such a dimension to a universal history, "to seek in the peculiarities of the grouping of ideas in different languages an important characteristic in the history of the mental development of the various branches of mankind" (Boas 1911a: 71). The careful study of the diversity of representations of ideas had as well practical implications, permitting the scholar to identify linguistic sources of inaccuracies and confusions in human thought "which are known to influence the history of science and ... the general history of civilization," as well as "the thoughts of primitive man" (Boas 1911a: 72).

Edward Sapir and Benjamin Whorf extended Boas's position in new theoretical statements, reaching perhaps their highest level of refinement (as suggested by Lucy (1992), which includes a detailed review of this body of work) in Whorf's treatment of individuation and pluralization in Hopi in a paper written in Sapir's memory (Whorf 1941).

I examine eight grammars written by Boas, Sapir, and Whorf, to determine the degree to which their theoretical positions influenced their practice as grammarians. Franz Boas contributed four grammatical sketches to the 1911 *Handbook of American Indian Languages*, on Tsimshian, Kwakiutl, Chinook, and Dakota, the last jointly authored with John Swanton. Edward Sapir published two major grammatical descriptions. *The Takelma Language of Southwestern Oregon* (1922), describing a language isolate with many unusual features, was originally his Columbia University doctoral dissertation of 1909. The *Takelma Texts*, with an accompanying vocabulary, were published separately (1909). *Southern Paiute, a Shoshonean Language* appeared in 1930, accompanied by a volume of texts and a substantial dictionary. Whorf published two grammatical sketches, on Second Mesa Hopi and Milpa Alta Nahuatl, in a volume of 1946, *Linguistic Structures of Native America*.

We might regard the first practice itemized above, the inclusion of background cultural information as a section of a grammar, as the easiest and most obvious way in which an author might express commitment to an anthropological linguistics. Yet, while the Americanist grammars do include such introductory sections, they are remarkably brief, a page or so in length. Boas apparently developed and recommended a sort of formula: a note on the geographical location of the language, a note on dialect diversity, brief mention of the genetic affiliations of the language, and sometimes a note on the identity of informants. These introductions include, however, no information at all on any cultural dimensions of the language community. Of course these authors published cultural information elsewhere, but they maintained a fairly rigid boundary between publication in cultural anthropology and the writing of grammars, that implied a commitment to the "autonomy" of grammar that contradicted the explicit claims of at least some of their theoretical writings. This Americanist practice continues to the present day, with most grammars in, for instance, the distinguished series from the University of California Publications in Linguistics, still including only very brief introductions, with most of the space even there devoted to dialect variation and comparative issues rather than to sociocultural questions.

This Americanist practice is in striking contrast to that encountered in recent grammars, e.g. within the Australian grammar-writing tradition, which open with detailed sections under the title "The language and its speakers" (first appearing, as far as I can tell, in Dixon's Dyirbal grammar (1972)), which include, in addition to information on dialect diversity and

the genetic affiliations of the languages, ethnohistorical and cultural notes which constitute a contribution to anthropology in their own right. Examples are Dixon's (1977) *A Grammar of Yidiɲ*, with a thirty-page chapter under this title, Foley's (1991) *The Yimas Language of New Guinea*, with 35 pages, and the monumental 50-page introduction to Evans' *A Grammar of Kayardild* (1995).

The second practice enumerated above by which a linguist can "write culture in grammar" is to select as illustrations of grammatical analyses examples that reflect culturally-appropriate usage. This practice is certainly exemplified in the early years of the Americanist tradition. Boas and Sapir both published extensive text collections. Many example constructions in their grammars are drawn from these, although others seem to be the result of discussion and elicitation (as in the last example below, from Whorf's (1946a) Hopi sketch. These examples are striking and evocative, yielding a cumulative sensation of immersion in an exotic world, heightened by the fact that many of their texts were stories of the creation time, or about cultural matters that even at the time of collection were mere memories[1]:

> "One canoe after another being out seaward" (Tsimshian: Boas 1911b: 302),
>
> "Then said the porcupine to the beaver" (Tsimshian: Boas 1911b: 36a),
>
> "And so I, on my part, am also a chief" (Kwakiutl: Boas 1911c: 492);
>
> "Clam baskets" (Chinook: Boas 1911d: 567),
>
> "There with that shaman is thy soul" (Chinook: Boas 1911d: 622);
>
> "I squeezed and cracked many insects (such as fleas)" (Takelma: Sapir 1922: 80),
>
> "Just when they touch the eastern extremity of the earth, just then I shall destroy them" (Takelma: Sapir 1922: 197);
>
> "The Kanab Indians' having learned (the) bear dance" (Southern Paiute: Sapir 1930: 202),
>
> "He bet (it) together with his wife (i.e. staked his wife too)" (Southern Paiute: Sapir 1930: 222),

> "The antelope fell down dead before reaching him" (Southern Paiute: Sapir 1930: 231);
>
> "Upon lightning striking the pine tree, I heard it thunder" (Hopi: Whorf 1946a: 182)

Some contemporary grammars of Native American languages continue this tradition – although the examples are likely to be rooted in contemporary experience, as in this from Dayley's (1989) *Tümpisa (Panamint) Shoshone Grammar*:

> " 'I don't like you Indians,' that cop said." (Dayley 1989: 380)

However, there is an increasing tendency in American grammars to favor the transparent representation of grammatical phenomena over the cultural interest of the example sentences. Selecting two random cases from my bookshelf, a very interesting categorical-grammar study of Luiseño (Steele 1990) uses mainly sentences that surely reflect a rather playful relationship between the linguist and her consultant, the late Villiana Hyde, but have little connection with everyday usages or contexts:

> "I will kick the boy's bear" (Steele 1990: 150)
>
> "They were trying to tickle themselves" (Steele 1990: 195).

Most of the example sentences in contemporary grammars are merely dull, as with these, from Gordon's Maricopa Morphology and Syntax:

> "You will sing and I will dance" (Gordon 1986: 285)
>
> "You were sick for a month" (Gordon 1986: 127)[2]

Opinions on this matter differ. I have heard a critic argue that the (to me) very interesting example sentences in Dedrick and Casad's (1999) *Sonora Yaqui Language Structures* are too complex to clearly illustrate the grammatical points under discussion. However, my own view is that linguists documenting indigenous languages, especially in a context when languages and cultures are threatened, should make every effort to include in that documentation a rich exemplification of actual usage about contexts that speakers do talk about, including the recitation of heritage texts that may constitute a very important cultural resource. These examples can do double duty. Example constructions in a grammar can simultaneously document the "habitual ways of speaking" of those speakers the community considers to exemplify appropriate usage, record textual resources such as

histories, songs, and specialized vocabularies, and illustrate phonological and grammatical points as well. Typographic solutions like bolding (not used in Dedrick and Casad 1999) can help in making examples serve multiple functions.[3]

While the Americanist tradition, at least in its early years, gave implicit attention to usage by including so many examples from text, the third type of practice in writing culture in grammar, explicit attention to usage, is strikingly rare in their work. Of course there are occasional dialectological notes, such as the observations in Boas's (1911b) Tsimshian grammar that certain forms appears only in the Nass dialect. Sapir closes his grammar of Southern Paiute with a brief note on "idiomatic usages", focussing on examples where generalized verbs TO DO and TO SAY are used where English would, in Sapir's view, prefer a more specific lexical choice (Sapir 1930: 273–75). Whorf (1946a) includes two sentences on "men's and women's speech." However, we must await the theoretical work of Hymes on the "ethnography of speaking" (e.g. Hymes 1966), and, especially, the work of Hymes (1981) and like-minded colleagues on poetics and rhetoric, for detailed work on usage in the Americanist tradition (However Hymes' proposals, which subordinated grammar to a more general "sociolinguistics" (Hymes 1977), had remarkably little effect on Americanist grammatical practice *sensu strictu*). Explicit notes on usage remain sparse in contemporary grammars. Again, we can contrast this Americanist practice with practice in the Australian tradition. For instance, Dixon's *A Grammar of Yidiŋ* (1977) includes an exceptionally interesting section on Yidiŋ conversational conventions, where it is preferred that conversational pair parts are constituted by full sentences, but with artfully minimal variations in lexical choice.

There are notable examples in the Americanist tradition of the fourth kind of practice in writing culture in grammar, attention to the ways in which grammatical categories seem to constitute certain kinds of understandings of situations. We encounter examples in the work of Boas, a prolific grammarian. Boas's psychological approach to grammar is apparent in the division of his four 1911 *Handbook* sketches (on Tsimshian, Kwakiutl, Chinook, and Dakota) into sections, with much of the discussion of the morphology presented under the heading "Ideas expressed by grammatical processes." The analytical payoff of this kind of attention is exemplified in the Tsimshian grammar, where Boas, illustrating the discussion with examples like "paddle-polish" and "seal-harpoon", makes what must have been one of the earliest observations of a now well-known property of noun in-

corporation: "Incorporation of the nominal object occurs principally in terms expressing habitual activities. In these it is well developed" (Boas 1911a: 295). In the same grammar he notes systems of numeral classification, with three classes of numerals in the Nass dialect, for counting human beings, canoes, and fathoms, with an additional set of numerals for "long objects" in the Tsimshian dialect.

In Boas's grammar of Chinook, we encounter an especially striking ethnopsychological discussion:

> It seems likely that, in a language in which onomatopoetic terms are numerous, the frequent use of the association between word and concept would, in its turn, increase the readiness with which other similar associations are established, so that, to the mind of the Chinook Indian, words may be sound-pictures which to our unaccustomed ear have no such value" (Boas 1911c: 629).

Boas discusses in the grammar a number of onomatopoetic forms, and Sapir contributed to it a richly-attested section on "Diminutive and augmentative consonantism in Wishram"[4] (an example assigned significant theoretical importance in Silverstein's (1981) essay on "The limits of awareness").

In spite of the examples reviewed above, where Boas's descriptive method does reflect his ethnopsychological theories about grammar, most of the exposition in his descriptions is conventional, with minimal attention to "fundamental ethnic ideas." And Boas's student Edward Sapir was even more conventional than his mentor in his approach to grammatical description. Like Boas, Sapir made major contributions to cultural anthropology and published essays that are among the founding documents of language-and-culture scholarship. Yet he maintained a fairly strict separation between writing grammatical description and writing about language and culture. Indeed, Sapir was wary of admitting unsophisticated parallels between grammar and culture, cautioning that "It is only very rarely ... that it can be pointed out how a cultural trait has had some influence on the fundamental structure of a language." (Sapir 1949 [1933]: 26).

Scattered through Sapir's grammars, of course, are statements that can only have been written by a scholar with a Boasian concern for grammar as a window into "the fundamental ethnic ideas". Yet these are "psychological" (today we would say "cognitive") rather than cultural. An example comes from Sapir's discussion of "vowel-ablaut" in Takelma stems, where /o/ and /a/ become /ü/ and /e/ respectively under conditions that resist precise statement. Sapir observes "The only trait that can be found in common

... is that the action may be looked upon as self-centered, ... as taking place within the sphere of the person of central interest from the point of view of the speaker...the palatal ablaut will be explained as the symbolic expression of some general mental attitude rather than of a clear-cut grammatical concept." (Sapir 1922: 61). Another example comes from Sapir's discussion of the instrumental prefixes of Takelma. Summarizing a brief comparison of Takelma and Siouan instrumental prefixation with verb stem formation in Algonkin and Yana, he remarks that while the two types of systems are not similar in detail, but "The same general psychic tendency toward the logical analysis of an apparently simple activity into its component elements" is characteristic of all the cases (Sapir 1922: 86).

I have found only one discussion where Sapir uses specifically Takelma cultural information, in his survey of what would today be called "evidentials". Sapir takes many examples of evidential usages from myth texts, since "the context gives them the necessary psychological setting" (Sapir 1922: 200). In order to sort out the semantics of the "inferential," Sapir depends on his understanding of how the Takelma see the character of Coyote.[5]

> An excellent example of how such a shade of meaning [that the action is not directly known through personal experience] can be imparted even to a form of the first person singular was given in §70; (Takelma sentence): THEY WOKE ME UP WHILE I WAS SLEEPING! 74.5 In the myth from which this sentence is taken, Coyote is represented as suffering death in the attempt to carry out one of his foolish pranks. Ants, however, sting him back to life; whereupon Coyote, instead of being duly grateful, angrily exclaims as above, assuming, to save his self-esteem, that he has really only been taking an intentional nap. The inferential form (Takelma form) is used in preference to the matter-of-fact aorist (Takelma form) I SLEEPING, because of the implied inference, I WASN'T DEAD, AFTER ALL, ELSE HOW COULD THEY WAKE ME? I WAS REALLY SLEEPING, MUST HAVE BEEN SLEEPING. (Sapir 1922: 200).[6]

The fifth practice that an anthropological approach to "writing culture in grammar" might yield is a thoroughgoing grammatical relativism, where the internal logic of a language shapes a description that gives little attention to categories and labels already established in the grammatical tradition. Certainly Boas favored such a relativist practice – I have already mentioned his chapter heading "Ideas expressed by grammatical processes." In practice, though, the expression of this relativism is quite restricted in his work, where descriptions begin with phonetics and proceed through mor-

phology, closing with sections on matters such as numerals, imperatives, and subordinate clauses. In some cases, such as in the Kwakiutl grammar, the reader can see that Boas is attempting to have the language data itself drive the analysis of the morphology, with suffixes categorized in the table of contents as, for instance, "suffixes denoting space limitations", "temporal suffixes", "Suffixes denoting subjective judgments or attitudes relating to the ideas expressed" (Boas 1911b: 425).

In contrast to Boas's occasional relativist gestures toward "the expression of ideas," Sapir's grammars are unashamedly organized in terms of scientific-linguistic grammatical categories: Phonology, Morphology, Noun, Verb, Prefixing, Reduplication, Derivation, and the like. Sapir invokes specifically European grammatical models when it is useful – although sometimes, as in this illustrative passage, with a bow to his relativist heritage:

> It is artificial, from a rigidly native point of view, to speak of causal, temporal, relative, and other uses of the subordinate; yet an arrangement of Takelma examples [of sentences with subordinate clauses] from the viewpoint of English syntax has the advantage of bringing out more clearly the range of possibility in the use of subordinates. (Sapir 1922: 193).

Of all the Boasians, Sapir was the most thoroughly trained in linguistics, and he deploys technical terminology like "enclisis" and "mora" brilliantly and innovatively, especially in the Southern Paiute grammar. He even invokes the Sanskrit grammatical tradition, observing the presence in Southern Paiute of what he calls "'bahuvrihi' compounds" (Sapir 1930: 74), like "coyote-headed" (or, to mention an especially colorful example, that Sapir was apparently unable to resist, "Buffalo-hoof-clefted vulva").

Perhaps the most thoroughgoing effort to fully exploit the relativist logic of the Boasian linguistic program is a brilliant failure: Benjamin Whorf's (posthumously published) grammatical sketch entitled "The Hopi Language, Toreva Dialect".[7] The result is fascinating, and includes a classification of the Hopi verb conjugations that is a major contribution to comparative Uto-Aztecan studies. However, the sketch requires very close reading and some familiarity with Hopi based on other sources for today's linguist to make much sense of it. The major problem of the work is that parts of it are made almost inaccessible by Whorf's efforts to base the description on "covert categories", to which he assigns neologistic grammatical labels (Lee 1996 is a helpful in sorting out the rationale for Whorf's eccentric grammatical labels, such as "tensor," Whorf's term for non-inflected ad-

verbs of time and degree that express "*intensities* of various types" (Whorf 1946: 179)).

The sketch includes elaborate notional analyses of phenomena that today are seen as typological commonplaces – and that probably would have been recognized as such by Sapir (who died when the volume was in the planning stage). For instance, Hopi is a null-subject language. For Whorf, this yields the insight that "... Hopi has very many verbs denoting events that are essentially complete wholes and need not be analyzed into an agent and an activity. Thus, if a flash of light is to be reported, Hopi need not manufacture a subject for it ...".

Whorf does use European-language grammatical terminology and categories, as in his (somewhat wrongheaded) analysis of Hopi postpositionals as "case markers". However, where he does this, he usually hedges, as in the case at hand, where he observes that

> "... these case relations ... are actually used in terms of a sort of unconscious ideology of space and movement that is typically Hopi. Thus the illative does not always mean "into" in our sense, but is used for "to" instead of the allative whenever the goal of motion is out of sight. It also denotes the instrumental relation, as though something of the action or actor went *into* the instrument" (Whorf 1946: 168).

Whorf's discussion of the "eventive" voice (which contrasts with the "simple" voice) is a vintage piece of Whorfian prose; it goes on for a page, but the flavor of it can be given by an early sentence – itself interrupted (after "figural arrangements") with a long footnote about Hopi phonaesthemes that express certain kinds of visual effects.

> The eventive is the distinctive, almost untranslatable voice of the zero form of the k-class and all ambivalents[8] ... a rich vocabulary of CVCV roots, which denote manifestation of characteristic visual outlines and figural arrangements, occurring as moving outlines, or as movements that leave more or less lasting representative outlines, or as simple appearances of figure and ground ... (Whorf 1946: 173)

Exacerbating the difficulty of understanding what might be meant by such a description is the fact that almost none of Whorf's claims are exemplified. The sketch of Hopi is only 28 pages long, and Whorf includes only five example sentences, confined to a single final section, where their properties are compared to those of the English translations.

Whorf's second sketch in the 1946 volume, *The Milpa Alta Dialect of Aztec*, is slightly less eccentric, and uses examples in a more conventional

way. However, even this sketch, of a language that was very well described by the mid-seventeenth century, includes some astonishing Whorfian riffs. An example is Whorf's analysis of "entitives" – here the footnote informs us that "Categories freely producible by either inflectional or collocational techniques are called *moduli* in the system used by the author for describing Utaztecan languages."

> An entitive, noun, adjective, or other, has two *moduli*, the modulus of a *substantive* and that of a *modifier*. The mark or *signature* of each modulus is simply word order. The meaning of the moduli is difficult to define, but fortunately it is a familiar one: in most cases it is very similar to what we understand by substantive and modifier, or head and attribute, in English and Western European generally (Whorf 1946b: 377).

This kind of extreme relativism in grammatical practice is understandably largely absent from grammar writing today. Not only does such a grammar require the linguist to start from scratch in attempting to understand the description, but in the case of Whorf's sketch, it obscured the many commonalities that Hopi shares with other languages while simultaneously neglecting ways in which Hopi may in fact exhibit rare and unusual properties.[9] The terminological consistency and attention to cross-linguistic comparability encouraged by the contemporary orientation of grammar writing to a typological project, whether within a formalist or a functionalist theoretical framework, surely represents a significant advance.

Most linguists of all theoretical persuasions today admit with Sapir that "It is only very rarely ... that it can be pointed out how a cultural trait has had some influence on the fundamental structure of a language." (Sapir 1949 [1933]: 26). However, one goal of a grammatical practice that integrates typological concerns with attention to culture in grammar might be to query this generalization. In some areas of grammar the development of such resonances seem not to be rare at all. One example is that of "classification," in both noun classes and classificatory verbs. Aikhenvald (2000: 340) has pointed out that "of all nominal and verbal grammatical categories, classifiers are the easiest to immediately connect with extralinguistic phenomena – either of physical environment, or of culture." The categories projected by classifiers seem to be accessible to speaker awareness – for instance, jokes exploiting classifier systems are frequently reported in the literature – and so can become the object of ideologically-driven reflection. Apparent cultural influences on classifier systems are widely reported. Aikhenvald provides a thorough review of this literature; recently-published examples include the kin-type classifiers reported by Bradley

(2001) for the Yi languages, and the reassignment of plural marking of kin terms seen in two Uto-Aztecan languages, Tohono O'odham (where the language community practices patrilineality) and Hopi (with matrilineality) (Hill and Hill 1997). Even when we attend carefully to the problem of circularity, which often makes it very difficult to see how grammar-cultural resonances have played out historically in a classification system, it remains clear that classification is a sort of "hotbed" of grammar-culture interinfluence.

Another example of what may be a "hotbed" phenomenon is ergative case. It seems clear that speakers can be come aware of the "agentivity" that is mapped by an ergative-absolutive distinction. For instance, Duranti (1990) shows that Samoan speakers use ergative case very cautiously, deploying it only where they wish to make a strong imputation of responsibility. Children, who nearly always speak of people who are of higher status than they, hardly use it at all. In Cupeño, a Uto-Aztecan language of California, ergative-case person-number clitics can be manipulated for special agentive effects, encoding first-person subjects of intransitive verbs like "run" and "sleep" to represent inappropriately boastful speech of mythic characters (J. Hill 2001; an example is seen in endnote vi). This kind of awareness-driven expression may be the ultimate source of the well-known hierarchies in grammaticalized ergative splits identified by Silverstein (1976).

Why should certain grammatical phenomena – nominal and verbal classification, ergative versus absolutive case marking – be apparently more susceptible to invasion by what Boas (1911: 71) called the "misleading and disturbing factors of secondary explanations" than are other areas of grammar? For instance, systems of tense and aspect, the object of considerable ideological attention in the Einsteinian twentieth century (and a Whorfian favorite), do not seem to be nearly as susceptible to baroque local elaboration as are systems of noun classification. Another very interesting question involves possessive expressions. Dixon (1972) states that it is necessary to note the aboriginal conception of "possession" as a sort of right (1972: 30) in order to understand the Dyirbal "proleptic" construction, where the recipient in a sentence with the verb TO GIVE is in the genitive case, as if the gift implicitly "belonged" to that person (Dixon 1972: 237). However, as far as I know the languages of the world exhibit relatively little culturally-grounded elaboration of possessive expressions. Heine (1997: 47) observes that "eight event schemas ... account for the majority of possessive constructions in the languages of the world." There is little correlation be-

tween which schemas are exploited in the grammar of a language, and ideologies about possession and ownership; instead, areal and genetic factors seem to be the best predictors of what kinds of constructions a language will exhibit. The main site of culturally-shaped elaboration around possession involves, not unexpectedly, noun classification, as with elaboration of possessive classifiers or assignment of referents to the domains of alienable vs. inalienable possession (Aikhenvald 2000). While, "possession" has been the object of considerable ideological attention in western thought, possessive constructions do not seem to be a hotbed of grammar-culture resonances.

I propose this contrast between "hotbed" zones and other zones where we are less likely to see grammar-culture resonances in the spirit of speculation (I am not at all sure I am right about the cases mentioned), as a possible avenue toward testing Sapir's proposal that, to repeat again, "It is only very rarely ... that it can be pointed out how a cultural trait has had some influence on the fundamental structure of a language." (Sapir 1949 [1933]: 26). It may be that careful research will show that all areas of grammar are, under the right circumstances, accessible to speaker awareness and secondary elaboration.[10] However, we will not know the answer to this question unless the systematic exploration of grammar-culture resonances becomes a regular part of grammatical practice. The current tendency, to isolate attention to such resonances in essays developed apart from mainstream grammar, and relatively isolated in journals and collections devoted to language-and-culture issues, certainly retards research on these questions.

Fortunately for the grammarian who feels that increased attention to the relationships between culture and grammar is needed, the last decade or two has seen renewed interest in the relationship between grammar, culture, and thought that has yielded many useful tools and examples. Dixon's (1972) analysis of Dyirbal noun classification, and Schmidt's (1985) account of recent decay in this system, inspired Lakoff's (1987) development of the idea of the "radial category," a conceptualization which permits the identification of orderly phenomena in classification systems that had previously seemed chaotic and random. Other useful innovations that permit more precise analyses of implicit categorization are to be found in the work of Wierzbicka and her colleagues (cf. Goddard and Wierzbicka 1994, Wierzbicka 1997), and the "Vantage Theory" of Robert MacLaury (see papers in MacLaury 2002). Research on directional terminologies by the staff of the Max Planck Institute for Psycholinguistics at Nijmegen has contributed the best evidence since Boas (1887) for the direct influence of

habitual forms of language on forms of thought (cf. Levinson 1996); especially significant in this work has been the development of new experimental techniques for use in the field. "Ethnosyntax" (Enfield 2002) synthesizes cross-linguistic semantic analysis with attention to discourse pragmatics and grammaticalization, identifying new sites where the intersection of grammar and culture can be studied. Students of language ideologies, developing foundational work by Silverstein (1979) in which development of Whorf's idea of "objectification" played a major role, have contributed new ways to explore cases where explicit ideological formations shape the development of language (cf. Rumsey 1990, Woolard, Schieffelin, and Kroskrity 1998).

Especially important in reviving interest in the relationship between grammar and culture has been increasing concern about the impact of language endangerment and loss. Woodbury's papers (1993, 1998) on Central Alaskan Yupik expressive systems are exemplary exercises in writing culture in grammar, developed to answer the question, "When a language is lost, is a culture lost?" – a question of burning interest to speakers of threatened languages around the world. If, in fact, we intend to continue to base our case for documenting and developing threatened languages largely on a claim that they and their speakers contribute irreproducible understandings to the total store of human knowledge, we must do far more work of this type.

In summary, we have the privilege of working in a period when advances in typology can spare us from some of the naiveté that can be identified in pioneering attempts to write culture in grammar, and when increasingly sophisticated tools of analysis permit us to identify sites of resonance between culture and grammar that might have been invisible to the pioneers. Results in this area are badly needed, especially if we are to advance the cause of the documentation and revitalization of threatened languages. The problem that must be confronted, if we are to take full advantage of the potential before us, is the implicit division between "writing grammar" and "writing culture" that I have identified in the Americanist tradition. Although some contemporary grammarians are working to break down this boundary, the division continues to dominate, to varying degrees, linguistic practice of all theoretical persuasions in all the national traditions with which I am familiar. Such a division reproduces an implicit commitment to the autonomy of grammar that is probably premature in the present state of linguistic science, retards efforts to test whether such a commitment is ap-

propriate, and challenges the humanistic claims that in part justify the study of grammar across the languages of the world.

Notes

1. The orthographies of the original-language sentences are in a complex narrow transcription; to avoid an endless struggle with fonts I give only the English glosses.
2. When could one say this? Perhaps to an addressee awakening from a coma? Reminiscing about a child's early years?
3. I do recognize that sometimes communities or individuals do not want sentences from heritage texts included in published grammars and dictionaries. Such objections do not, however, preclude the linguist from illustrating a grammar with contextualized sentences that reflect contemporary ideas of interesting talk. A splendid model is found in Hopi Dictionary Project 1998, where the example sentences – many of them wise and witty – were all made up for the dictionary by Hopi elders who wanted it to be both interesting and very, very Hopi.
4. Wishram is the variety of Chinookan spoken on the Oregon side of the Columbia River at Celillo Falls; Boas's description in the main sketch is based mainly on the Lower Chinookan of Charles Cultee.
5. Again, to avoid font problems, I do not include the Takelma examples, but merely note their presence in parentheses.
6. It is fascinating to note the presence of this very theme in a Cupeño story from southern California: Coyote, lying dead in a cloud of flies because of a series of foolish decisions, is found by his brother, who revives him with magical songs. The dialogue goes:
   Coyote: Εεε! Iví'awşene kúpwenet, buuchi ku'ut kú'lami, kú'al miqíwpeqal!
   Brother: Heehee, kúpwenet. Iví'aw qáawish qál, étam'a şéngeşéngepeyaqal!
   Coyote: Hey! I must have been asleep right here, my goodness, I was chasing flies!
   Brother: Yeah, asleep. You were lying dead here, your teeth all grinning!
   Note that Coyote uses the ergative person-number clitic *=ne* in *Iví'aw=şe=ne* "here=dubitative=1sg.erg", heightening the agency of *kúpwenet* "asleep", a nominalized intransitive that would not normally occur with the ergative.
7. The eccentricity of this sketch begins with the title. The members of the Hopi Dictionary Project established that "Toreva", *Toriva* "twist-water" in the contemporary orthography, is the name of a permanent spring on Second Mesa, one of the three long extensions of Black Mesa on which the Hopi towns are established. Whorf says that it is the name of a town that has an "older" name

"Anglicized as Mishongnovi". The Dictionary Project scholars were unable to confirm that anyone ever referred to "Mishongnovi" as *Toriva*.

8. Hopi Dictionary Project (1998) says that these are "usually intransitive and always perfective".
9. For instance, Groenemeyer (1996) and K. Hill (2003) point out that properties of the exuberant development of noun incorporation in Hopi challenge contemporary typological theory. We can hardly hold Whorf responsible for today's ideas about incorporation, but he might have noticed that Hopi noun incorporation challenged the claim made by Boas in the Tsimshian grammar, noted above, that "Incorporation of the nominal object occurs principally in terms expressing habitual activities" (Boas 1911b: 295) – especially since Hopi very commonly incorporates any theme, not just objects.
10. Silverstein (1981) proposed that susceptibility was heightened by the relative referentiality and segmentability of forms and constructions.

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Author index

Language index

Subject index