

Word Classes

Walter Bisang, University of Mainz

0.1. Introduction

Word classes or parts of speech form an integral part of grammar since the Greek/Latin tradition. Dionysios Thrax (217–145 AD) presents and defines no less than eight parts of speech (Greek *mérē lógou* [part:NOM:PL speech:GEN:SG] in his ‘art of grammar’ (Greek: *téxnē grammatikē*)—the first grammar written and compiled in the occident (for more information cf. Robins 1964: 9–44; Lallot 1998).

Terms such as “noun” or “verb”, which are found in almost any recent linguistic theory as well as in any descriptive grammar, are rooted in this tradition. Given the ubiquity of these terms, it is a fundamental task of linguistics to analyse them and to define them in a way that fits into our present-day knowledge about the range of cross-linguistic variation. This is the aim of a number of typologists whose approaches will be introduced in the course of this chapter. As will be seen, this is work in process. There is no final solution appearing on the horizon.

Most approaches to word classes somehow start with a statement on the inadequacy of purely semantic or notional definitions like “nouns denote objects”, “verbs denote actions” or “adjectives denote properties/qualities”. It is easy to see that a noun like *movement* does not refer to an object and thus disproves the above semantic definition. Even Dionysios Thrax did not base his definitions exclusively on semantics. As can be seen from his definition of the noun, he also integrates criteria associated with

morphological form like case and other morphologically expressed grammatical categories:

The noun is a part of speech with case denoting a physical body or an activity (a physical body like ‘stone’, an activity like ‘education’) ... it takes the consequential attributes (= categories) of gender, type (primary or derived), form (simple or derived), number and case.

(Dionysios Thrax; my translation [W.B.] based on Lallot 1998: 50–51, 127–130; Robins 1964: 33–35).

In the course of time, other criteria were added to the definition of word classes. The present discussion is based on the following four prerequisites for distinguishing word classes (cf. Sasse 1993b: 196–201):

(1) Prerequisites for distinguishing word classes:

- Semantic criteria
- Pragmatic criteria / criteria of discourse function
- Formal criteria
- Distinction between lexical and syntactic levels of analysis

The first three prerequisites mentioned in this section, i.e., semantic, pragmatic and formal criteria, are generally agreed on in one way or another by contemporary linguists. This does not apply to the methodological distinction between the lexical

(paradigmatic) and the syntactic (syntagmatic) levels of analysis. As will be seen in this chapter, the debate on the existence of a noun/verb distinction in Iroquoian languages (Sasse 1993a,b vs. Mithun 2000), in Nootkan (Swadesh 1938, Jacobsen 1979) or in Tagalog (Himmelmann 1987, 2005) can only be understood if the lexical and the syntactic levels are clearly distinguished. The consistent application of the fourth prerequisite even reveals a new typological distinction between noun/verb-languages and type/token-languages (cf. Broschart 1997 on Tongan as a type/token-language).

The present chapter will be structured as follows: After the introduction of the four prerequisites in section 0.2, the most important approaches to word classes based on the first three prerequisites will be discussed in 0.3 (Schachter, Hengeveld, Croft). Since Croft (1991, 2000, 2001) developed the most systematic and thorough theory, it will be presented in some more detail in section 0.3.3. Section 0.4 will deal with the distinction between content words and function words. Section 0.5 will take up the discussion of the universal status of the noun/verb distinction by integrating the fourth prerequisite. The languages discussed will be Classical Nahuatl (section 0.5.2), Late Archaic Chinese (section 5.3) and Tongan (section 0.5.3). Section 0.6 will deal with adjectives, section 0.7 with adverbs. Finally, this chapter will end with a short conclusion in section 0.8.

Since it is the intention of this chapter to focus on criteria that are cross-linguistically valid for distinguishing word classes, it does not discuss the whole list of word classes presented in the literature. Thus, it concentrates on the open word classes of nouns, verbs, adjectives and adverbs. Nevertheless, a list of some more word classes is presented for the sake of completeness and as a conclusion of this section. Most of these classes are closed classes, i.e., they only have a closed number of members.

- Pronouns (personal, possessive, reflexive, reciprocal, demonstrative, relative, interrogative, indefinite)
- Articles
- Adpositions
- Conjunctions
- Numerals
- Classifiers (with their different subtypes as discussed in Aikhenvald 2000)
- Ideophones (Voeltz & Kilian-Hatz 2001)
- Interjections

0.2. Prerequisites for the distinction of word classes

0.2.1. Semantic criteria

Most approaches to word classes are based on semantic criteria like object, property or action (e.g. Croft 1991, 2000, 2001; cf. section 0.3.3). Sasse (1993a) makes a distinction between “thing-like concepts” and “event-like concepts”.

Langacker (1987) is probably the most elaborate study that tries to provide a notional description of nouns and verbs. His definition of the noun is based on the concept of the REGION, i.e., “a set of interconnected entities” (Langacker 1987: 62). A noun designates a region and is thus characterized as being static and holistic. The concept of BOUNDED is based on whether “there is a limit to the set of participating entities” (Langacker 1987: 62) and is used to distinguish count nouns from mass nouns. Thus, “[a] COUNT

NOUN designates a region that is bounded within the scope of predication in its primary domain”, while “[a] MASS NOUN designates a region that is NOT specifically bounded within the scope of predication in its primary domain” (Langacker 1987: 63). Verbs are described as processes which are mentally analysed across their different states through time: “A verb is ... a ‘temporal’ predication in the sense of following a situation, state by state, as it evolves through conceived time; its ‘dynamic’ character reflects the successive transformations which derive each component state from its predecessor” (Langacker 1987: 74).

In spite of its thoroughness, Langacker’s (1987) notional approach is problematic for at least two reasons (also cf. Sasse 1993a: 649). It does not provide a discovery procedure for parts of speech identification. Arguments that are exclusively based on semantics cannot show why a particular limited set of classes is cross-linguistically universal.

Finally, there is a fundamental problem that applies to all the semantic criteria discussed so far. As Wierzbicka (2000) pointed out, they are all too general to match word classes across languages. Thus, one cannot just take any action-denoting lexical item for establishing cross-linguistic word classes because the concept expressed by that item may not be lexicalized universally. It is for that reason that the cross-linguistic definition of word classes must be based on “genuinely universal lexical prototypes” (Wierzbicka 2000: 288). Wierzbicka (2000) suggests the following prototypes that are based on empirical cross-linguistic investigation within her project on Natural Semantic Metalanguage (NSM): Nouns: PEOPLE, THINGS; verbs: DO, HAPPEN (verbal prototypes) and SEE, HEAR SAY, MOVE (other lexical universals); adjectives: BIG and SMALL, secondarily GOOD and BAD; etc. for other word classes.

As will be seen, none of the approaches presented in section 0.3 reflect Wierzbicka's (2000) point. The only other approach which incorporates the requirement of using universally lexicalized concepts is Dixon (1977, 2004). He presents the following semantic types (printed in capitals) that are always associated with nouns or verbs, respectively (for adjectives, cf. section 0.6):

- (1) Semantic types associated with nouns and verbs (Dixon 2004: 3):
 - a. Linked with nouns: semantic types with concrete reference: HUMANS, body and other PARTS, FLORA, FAUNA, CELESTIAL, ENVIRONMENT, ARTEFACTS.
 - b. Linked with verbs: MOTION, REST, AFFECT, GIVING, ATTENTION, SPEAKING.

0.2.2. Pragmatic criteria, criteria of discourse function

Independently verifiable semantic properties as identified in section 0.2.1 may not be the ultimate factor that determines the distinction of nominal vs. verbal structures. In Hopper & Thompson's (1984, 1985) approach, these properties are related to discourse function. Thus, "the semantic facts ... which are characteristic features of prototypical N's and V's are ... derivative of (and perhaps even secondary to) their discourse roles" (Hopper & Thompson 1984: 708).

The prototypical discourse function of nouns is "to introduce participants and 'props' and deploy them" (Hopper & Thompson 1984: 710). In such a context, the crucial properties of nouns with high categoriality are continuity of identity and importance in

the subsequent discourse. These properties are described as “referential” by DuBois (1980) and Givón (1981). Hopper & Thompson (1984: 711) prefer the term “manipulable” to avoid the “strong logical/semantic connotations for many linguists”. The low categorial status of non-manipulable nouns can be seen from cases in which the noun does not refer to specific entities (nominal incorporation, noun compounding, predicate nominals) or from cases whose referents are not important for the subsequent discourse (anaphora, body parts).

The prototypical discourse function of verbs is to “assert the occurrence of an event” (Hopper & Thompson 1984: 708). A prototypical verb can be seen as an answer to the question ‘What happened?’ (Hopper & Thompson 1984: 726). Verbs that do not express that function in a given context “tend not to manifest the morpho-syntactic trappings of prototypical V’s in that language” (Hopper & Thompson 1984: 726). Contexts in which verbs show reduced categoriality are stativity (predicative adjectives, attribution, existential clauses, copula clauses), irrealis, negation, serial verbs, compound verbs and dependent clauses.

On a more general level, Hopper & Thompson (1985: 151) formulate their iconicity principle which states that “the more a form refers to a discrete discourse event, the more distinct will be its linguistic form from neighboring forms, both paradigmatically and syntagmatically”. Ultimately, it seems that Hopper & Thompson’s (1984, 1985) account of nouns and verbs can be associated with the discourse-pragmatic categories of topic vs. comment.

0.2.3. Formal criteria

Formal differences in the way in which semantic or pragmatic properties are expressed in a language are crucial for determining its word classes. The relevance of morphology has been recognized long ago for the classical languages. Thus, the role of inflectional and derivational morphology is indisputable. Beyond morphology, word-class distinction crucially depends on syntactic distribution. Both levels of formal expression are subsumed under Croft's (1991: 58, 2000, 2001) term of "function-indicating morphosyntax". Probably the most elaborate account of formal criteria is the list of "part-of-speech-differentiating properties" presented by Anward et al. (1997: 173–177). Apart from morphological and syntactic differentiation defined in terms of word-internal (compatibility with certain morphemes) vs. word-external (compatibility with other words) distribution, Anward et al. (1997) also pay attention to phonological form. Phonological form applies if distinct word-classes take phonologically different forms whose structure cannot be characterized in a general way (e.g. Engl. *speech* vs. *speak* or *die* vs. *death*) or if the lexemes within each class have different phonological properties (e.g. nouns are monosyllabic, verbs are disyllabic) (Anward et al. 1997: 172).

0.2.4. Distinction between the lexical and the syntactic level of analysis

Sasse (1993a, b) and Broschart (1997) discuss the confusion of the lexical (paradigmatic) and the syntactic (syntagmatic) level as a problem for an adequate distinction of word classes. As Sasse (1993a: 647) points out "[t]his confusion

ultimately results from the erroneous belief that languages universally display a perfect X:XP match (where X is a “lexical”, XP a “phrasal” category)”. The fact that such a perfect match is the case in many European languages such as German, French or English does not exclude the existence of languages in which syntactic categories such as TP or DP are defined without any reference to lexical classes such as V or N (cf. sections 0.5.1, 0.5.2 and 0.5.4).

0.3. Approaches to word classes

0.3.1. Schachter (1985)

Schachter’s (1985) presentation is written for practical purposes – it is a guide-line for field workers and is thus well-suited to set the stage for the discussion of word classes. It is widely quoted in subsequent papers dealing with word classes.

After a short reference to the inadequacy of purely semantic criteria, Schachter (1985) points out three primary grammatical criteria for distinguishing word classes:

- a word’s distribution
- its range of syntactic functions
- morphological or syntactic categories for which it is specifiable

From a simple sentence like the one in (2), one can see that *boys* and *girls* share the same distribution in English, while *like* follows a different pattern.

(2) English (Schachter 1985: 4):

- a. Boys like girls.
- b. Girls like boys.
- c. *Like boys girls.

The same pattern also shows up if the three words in (2) are analysed in terms of the remaining two grammatical criteria:

INSERT TABLE 0.1 ABOUT HERE

Although word classes set up on the basis of the above grammatical criteria are often language-particular it is possible to label them and to compare them cross-linguistically on the basis of semantic criteria:

[O]nce the words of a language have been assigned to parts-of-speech classes on grammatical grounds and it is found that one of these classes includes the preponderance of words that are the names of persons, places, and things, then it is perfectly reasonable to call this class the class of nouns, and to compare the class so named with the similarly named classes of other languages. (Schachter 1985: 4)

Although Schachter (1985) provides an excellent survey, some of its basic tenets are not unproblematic. Croft (2000: 67) points out that Schachter's semantic heuristic for

labelling form classes of words is “no substitute for a sound methodology and theory”.

The distributional criterion produces an enormous number of classes but does not provide any help for distinguishing word classes from minor syntactic categories (Croft 2000: 82).

0.3.2. Hengeveld (1992)

Hengeveld (1992) looks at word classes from the perspective of Functional Grammar (Dik 1997). His definition is based on four different functions (predicative, term [= referring expression, W.B.], head, modifier) and on the morphosyntactic markedness of the expression formats involved. Markedness is discussed in terms of whether it is necessary “to take further measures”, i.e., whether the obligatory presence of additional morphemes is required in a particular function:

(3) Definitions of word classes in Hengeveld (1992: 58):

A verbal predicate is a predicate which without further measures being taken, has a predicative use *only*.

A nominal predicate is a predicate which, without further measures being taken, can be used as the head of a term.

An adjectival predicate is a predicate which, without further measures being taken, can be used as a modifier of a nominal head.

An adverbial predicate is a predicate which, without further measures being taken, can be used as a modifier of a non-nominal head.

In Hengeveld's (1992) view, there are many instances in which languages lack word-class distinctions. This is the case if "no further measures" need to be taken for one and the same word in two or more functions. Lack of word-class distinction can show up in two different types called "flexible" and "rigid" by Hengeveld (1992). In the flexible type, there is no overt morphosyntax that expresses the two or more functions involved. Hengeveld (1992: 66) describes Tongan as "an extremely flexible language" (cf. section 0.5.4 for an alternative view). In the following example, the word *si'i* occurs in the functions of a predicate (4a), of a term (4b) and of a modifier (4c):

(4) Tongan (Tchekhoff 1981: 4, Hengeveld 1992: 66; also cf. Croft 2000: 70; 2001: 68):

a. na'e **si'i** 'a e akó.

PST small ABS ART school

'The school was small.'

b. 'i 'ene **si'i**.

in POSS:3:SG childhood

'in his/her childhood'

c. na'e ako 'a e tamasi'i **si'i** iate au

PST study ABS ART child small LOC 1.SG

'The little child studied at my home.'

In the rigid type, there is overt morphosyntax, but that morphosyntax is identical for two or more semantic classes (e.g. objects, actions, properties). In the following frequently cited Chinese example, action-denoting (5a) and property-denoting (5b) words are used with the same morphosyntactic marker of modification (*de*):

(5) Chinese (Schachter 1985: 18; Hengeveld 1992: 63; Croft 2000: 69,

Croft 2001: 67):

a. liǎojiě de nǚháizi

understand MOD girl

‘a girl who understands’

b. piàoliang de nǚháizi

beautiful MOD girl

‘a beautiful girl’

Finally, there is a third type of expression format called “specialized”, in which each word class has its own morphosyntax. English with its four word classes of nouns, verbs, adjectives and adverbs is supposed to belong to this class.

0.3.3. Croft (1991, 2000, 2001)

Croft (1991, 2000, 2001) criticizes current approaches to word classes from two perspectives which he calls “lumping” and “splitting”. Lumping approaches claim that

there are languages that lack certain word classes by subsuming them under one major class. Splitting approaches are based on a detailed use of distributional analyses which ultimately produce an almost unlimited number of potential word classes which can hardly be generalized into major word classes.

Lumping can be successful only by “ignoring important empirical facts and distinctions within particular languages” (Croft 2000: 69). Hengeveld (1992), who is a paradigm case of the lumping approach in Croft’s view, fails to notice important different meanings of lexical roots in different functions. This can be illustrated by another look at (4) on Tongan *si’i*, which shifts from its general meaning of ‘small’ in (4a) to the rather specific meaning of ‘childhood’ in (4b). Similarly, the interpretations of *ako* in its referential meaning of ‘school’ (4a) and in its predicative meaning of ‘study’ (4c) are too language specific to be derived from a mere change of syntactic position (Croft 2000: 71; 2001: 68). Thus, the meaning of English *school* in (6) is not equal to the meaning of Tongan *ako* in predicative use (4c).

(6) English (Croft 2000: 71; 2001: 69):

We schooled him in proper manners.

In addition to problems with meaning, lumping approaches overlook small syntactic categories. Hengeveld (1992) describes Tuscarora, an Iroquoian language like the one described by Sasse (1993a, b) (cf. section 0.5.1), as a maximally rigid language that only consists of verbs. But even if Hengeveld (1992: 67) acknowledges the existence of “a reduced number of true nouns” in that language, he chooses to neglect that fact.

Distributional analysis does not only produce the effect of splitting by revealing “a myriad of classes” (Croft 2000: 82; 2001: 83), it does not even produce atomic primitives that may be used to build up syntactic models. This can be seen from Uehara (1998: 98–99, 103–115) who shows that individual Japanese words can have different distributional properties depending on individual speakers. Thus, even at the level of individual lexical items category membership is not necessarily clear-cut (Croft 2000: 81).

On a more general level, distributional analysis has to face two more problems. One of them is that structural items (Croft is talking about constructions in this context) that can be used for setting up word-class distinctions in one language may not exist in another language. One example is the existence of articles. If there are no articles in a language, that distributional criterion cannot be used in that language. The same applies to languages which lack inflection for number, gender and case. Even if there are relevant constructions for word-class distinction in a language, they “give wildly different distributions and hence wildly different categories from those in English” (Croft 2001: 30). Croft (2001: 30) quotes the example of Makah (Nootkan; American Pacific Northwest) from Jacobsen (1979) in which lexical items of almost any semantic class can be inflected for agreement, aspect and mood, which are important criteria for distinguishing word classes in English. In Makah, the above inflectional marking occurs with words denoting actions (7a), objects (7b), properties (7c) and with what we would call adverbs in English (7d):

(7) Makah (Jacobsen 1979: 110–111; from Croft 2001: 30):

a. k'upšil baʔas ʔuyu-q

point:MOM:IND:3 house OBJ

‘He’s pointing at the house.’

b. babaʔldis.

white.man:IND:1.SG

‘I’m a white man.’

c. ʔi·ʔi·x^wʔi

big:IND:3

‘He’s big.’

c. hu·ʔaxɪs haʔuk^wap□

still:IND:1.SG eat:CAUS

‘I’m still feeding him.’

To avoid the problems of lumping and splitting, Croft (1991, 2000, 2001) develops his own construction-based universal-typological theory. While most approaches take word classes to be language specific, Croft (2000: 65; 2001: 63) takes a diametrically opposed view:

1. Noun, verb and adjective are not categories of particular languages.
2. But noun, verb and adjective are language universals—that is, there are typological prototypes ... which should be called noun, verb and adjective.

Croft's theory is based on three constructions that are used for the expression of the pragmatic (communicative) functions of predication, reference and modification.

Predication is defined as “what the speaker intends to *say about* what he is talking about (the referent)” (Croft 1991: 52). The function of reference: “is to get the hearer to identify an entity as what the speaker is talking about” (Croft 1991: 52). Modification is defined as an “accessory function to reference and predication” because it is either a more specific instrument for identification in the case of restrictive modification or an instrument that provides a secondary comment in the case of unrestrictive modification (Croft 1991: 52).

The above three pragmatic functions are combined with the three semantic classes of object, property and action. These functions constitute a conceptual space with the pragmatic functions forming the horizontal dimension and the semantic classes forming the vertical dimension in table 0.2. Word classes manifest themselves within that conceptual space by markedness patterns of function-indicating morphosyntax, i.e., by a morphosyntax that overtly encodes the three pragmatic functions of reference, modification and predication. On the basis of his own definition of markedness (Croft 2003: 2003: 87–101, 110–121), there are the following unmarked combinations of pragmatic function and semantic class that universally constitute word classes (Croft 2000: 88):

- nouns: reference to an object
- adjective: modification by a property
- verb: predication of an action

Thus, object-denoting lexemes like *house* in English tend to be relatively less marked in an object-reference construction (construction names are in italics in table 0.2) than in an object-modifier construction (PPs on nouns: *of the house*) or in an object-predication construction (copula: *is a house*). The same can be said for the property-modifier construction and for the action-predication construction in comparison to the other constructions located on the same line in table 0.2.

INSERT TABLE 0.2 ABOUT HERE

What is crucial for the understanding of the above conceptual space is that in Croft's (2000: 89) typological markedness concept "the structural coding criterion specifies only that the marked member is encoded by *at least as many* morphemes as the unmarked member". We are thus dealing with an implicational universal which only excludes cases in which an unmarked member is expressed by more morphemes than a marked member. Equal marking and zero-marking across neighbouring members is possible.

Croft's approach integrates Hopper & Traugott's approach (1984, 1985; cf. section 0.5.1) in a more systematic way. As he states, "[t]he pragmatic functions are in fact the foundation for the three-way distinction of the traditional major parts of speech" (Croft 2000: 87). Pragmatic functions (reference, modification, predication) provide the framework for distinguishing the major word classes and they motivate morphosyntactic patterns.

0.4. Content words vs. function words

On the basis of their meaning, word classes can be divided into content words (words with clear semantic content that denote objects, properties, actions, etc.; also called autosemantica) and function words (words marking grammatical functions; also called synsemantica). Hockett (1966: 21) and a number of other linguists assume that the difference between denotational and non-denotational words is universal: “Every human language has some elements that denote nothing but that make a difference in the denotation of the composite forms in which they occur”. Even linguists who argue that there are languages with no noun/verb distinction like Sasse (1993a; cf. section 0.5.1) agree that there are at least these two word classes. The same distinction is also discussed in linguistic traditions outside of the West. In traditional Chinese philology, words are divided into *shící* ‘full words’ and *xūcí* ‘empty words’.

There is not always a clear-cut distinction between the two classes. This is due to the fact that many function words diachronically developed from content words and thus are the result of grammaticalization.

The distinction between content words and function words is not identical to the distinction of open vs. closed word classes. The opposition of open vs. closed merely concerns the question of whether class membership is limited or not. As we will see in section 0.6, there are languages in which content words like adjectives belong to a closed set.

0.5. The noun-verb distinction and beyond

0.5.1. *Beyond Croft's theory*

Croft's theory (1991, 2000, 2001) cannot fully integrate the whole typological discussion on word-class systems. Approaches developed by linguists like Broschart (1991, 1997), Launey (1994), Himmelmann (1991) and Sasse (1993a, b) go beyond his model for two reasons.

1. Individual constructions alone do not provide a sufficient criterion for distinguishing word classes. “[I]t is the whole (more or less standardized) paradigm of constructions which defines the word classes concerned” (Broschart 1997: 150).
2. Croft's approach is based on his Radical Construction Grammar. Since this theory rejects universal categories and relations (due to problems with distributional analysis) and takes constructions as the basic primitive units of syntactic representation (Croft 2001: 46), the fourth methodological prerequisite of distinguishing between lexical and syntactic levels of analysis is problematic—there are no general syntactic categories unto which lexical items can be mapped.

The first problem can be illustrated by looking again at example (7) from Makah. Croft (2000: 86) rightly states that linguists who argued against the existence of word classes in Makah did not discover anything about word classes and “they discovered typological patterns about the relationship between the predication construction and the semantic classes of lexical items that fit into the predication construction” (Croft 2000:

86). This statement is adequate as long as one can more or less assume that a language has the whole range of constructions as we find them in table 0.2. From looking at the data in Jacobsen (1979), this seems to be more or less the case in Makah. There are predication-constructions as in (7a) but there seem to be other constructions as well. Problems arise if there are differences in the “paradigm of constructions” as a whole (cf. above, point 1). What happens if cross-linguistic morphological comparison reveals that a language only uses constructions whose formal properties correspond to those of predication or those of reference in other languages? This is what Sasse (1993a, b) wants to show for Iroquoian languages in general and for Cayuga in particular. In his view, object-denoting lexemes occur with the same morphological pattern of person and aspect marking as lexemes denoting transitive actions. If this were true Cayuga would only use predication constructions. Even what is expressed by reference constructions in most languages of the world must be expressed by a predicate construction in Cayuga. As was shown by Mithun (2000), this analysis is inadequate for Iroquoian languages. There clearly are different morphological patterns that prove the existence of a noun/verb distinction. In spite of this, Mithun’s (2000) proof that Sasse’s (1993a, b) analysis does not work in Iroquoian is no proof against the general existence of such a system. In fact, there is a consistent analysis of Classical Nahuatl by Launey (1994), who tries to show that this language only uses predication constructions and is thus “omnipredicative” in his terminology. However, omnipredicativity does not imply lack of noun/verb distinction. As will be seen in section 0.5.2, omnipredicativity does not exclude the existence of a noun/verb distinction—object-denoting and action-denoting lexemes follow different morphological patterns in some cases. For Sasse’s (1993a, b)

analysis of Iroquoian, this means that even if these languages were omnipredicative the conclusion that they lack noun/verb distinction is illicit.

Apart from omnipredicativity, there is also a second theoretical option in which a language only uses constructions whose formal properties are that of reference. In Himmelmann's (1987, 2005) description, Tagalog falls into that category. Tagalog sentences are constructed according to the pattern of nominal copula sentences. As it seems, there are also at least some differences in morphosyntactic behaviour between action-denoting lexemes and reference-denoting lexemes. Due to lack of space, this second option will not be further discussed here (for more information, cf. the above references and Sasse's 1993a: 655 excellent summary).

The discussion of the first problem was important for the understanding of arguments against the existence of the noun/verb distinction in some languages but it did not contribute to its complete disproof. The second problem concerning the lack of a theoretical basis for describing the interaction between syntactic categories and lexical items may have more serious consequences. Before getting into this, a more general remark concerning Croft's (2001) Radical Construction Grammar is needed. It cannot be the aim of this chapter to evaluate different theories against each other. Since formal approaches to word classes as well as most functional approaches operate with syntactic categories, it is necessary to integrate their perspective in a chapter like this. In fact, it should be possible to assimilate (but not to fully transfer, of course) Croft's (1991, 2000, 2001) conceptual space and its markedness patterns to theories that assume syntactic categories such as N and V if one looks at the markedness of the lexemes occurring in the N-slot or in the V-slot under the pragmato-semantic situations described in table 0.2.

The reason why the methodological distinction between the lexical and the syntactic levels matters has to do with the fact that most theories about word classes take a one-to-one correlation between lexical categories and syntactic categories for granted. There are however languages in which it is reasonable to assume that lexical items are not necessarily preclassified for syntactic categories. As will be argued below, this seems to be the case in Late Archaic Chinese (section 0.5.3) and in Tongan (section 0.5.4). In Late Archaic Chinese, the assignment of lexical items to the syntactic categories of N and V depends on pragmatic inferences. Thus, the noun/verb distinction is relevant even if it is only at the level of syntactic categories (Bisang, forthcoming). In Tongan, the noun/verb distinction seems to be of secondary importance even at the level of syntactic categories (Broschart 1997). Thus, Tongan is not a noun/verb-language.

0.5.2. Omnipredicativity in Classical Nahuatl

Classical Nahuatl is a Uto-Aztecan language that was spoken in Mexico and its periphery at the time of the conquest of America by Spain. Its data basis (cf. Launey 1994: 17–20) thus consists of written documents. From a superficial look at a constructed example of a simple sentence in (8) it looks as if Nahuatl represents a straightforward structural type with a nominal subject and a verbal predicate:

(8) Launey (1994: 29):

Chōca in piltōntli.
 cry LNK the.child
 ‘The child cries.’

A closer look at the morphological paradigms for person marking on action-denoting lexemes and on object-denoting lexemes in table 0.3 reveals that a different analysis is more adequate. Since the person markers for intransitive arguments (S) and for active arguments (A) of transitive predicates are identical to the person markers (S) for predication constructions with object-denoting lexemes, the content words in (8) can be analysed differently: *chōca* has a third person zero-prefix as in \emptyset -*chōca* ‘s/he cries’, *piltōntli* can be analysed analogously as \emptyset - *piltōntli* ‘s/he is a child’. Thus, (8) consists of the two predications ‘S/he cries’ and ‘S/he is a child’. The function of *in* will be discussed below.

INSERT TABLE 0.3 ABOUT HERE

Similarly, we may analyse examples like (9) as consisting of three predications (9’):

(9) Launey (1994: 37):

\emptyset -qui-cua in *piltōntli* in nacatl.
 3.SG:A-3.SG:O-eat LNK child LNK meat
 ‘The child eats the meat.’

- b. **ti**-tiicitl **ti**-ye-z.
 2.SG-doctor 2.SG-be-FUT
 ‘You’ll be a doctor.’

4. A word like *piltōntli* cannot be used to call a person. There are special vocative forms.

The word *in* (glossed as LNK for “linker”) is analysed by Launey (1994: 122–132) as a “pivot” that links two predications. Since it is generally used as a demonstrative or as a relative marker, these functions can be used simultaneously on one instantiation of *in* in predicate linking if it is the demonstrative argument of one predication and the relative marker of the other predication. In example (8), *in* is thus a demonstrative in the argument position of ‘cry’ (*ϕ-chōca in* ‘That one/he/she cries’) and the relative marker of the second predicate ‘be a child’ (*in piltōntli* ‘the one who is a child’). A literal translation of (8) may thus look as follows: ‘That one cries, the one who is a child’.

The omnipredicative character of Classical Nahuatl does not exclude the existence of the noun/verb distinction. There is a number of properties which we only find with action-denoting lexemes (= verbs):

1. Only action-denoting lexemes can be marked for aspect.
2. Object-denoting lexemes (= nouns) differ with regard to their referential structure from action-denoting lexemes. They have only one relation (S-argument) plus a possessor argument (cf. table 0.3, last column). Lexemes denoting transitive actions can have an additional secondary argument (O in table 0.3).

3. It is possible to derive nouns from action-denoting morphological bases (nominalization).

0.5.3. No correlation between lexicon and syntax: Late Archaic Chinese

Late Archaic Chinese refers to the Chinese of the period between the 5th and the 3rd centuries BC. It is the language in which the classical texts of Confucius, Mencius, Laozi, Zhuangzi, etc. are written. A much more detailed discussion on word-classes in this language can be found in Bisang (forthcoming).

In Late Archaic Chinese, the argument-structure construction is characterized by the following distribution of noun-slots (DP) and verb-slots (V) (S stands for intransitive argument, A and O for actor and patient in transitive contexts):

(12) Argument-structure constructions:

- a. Intransitive: DP_S V (NP_S)
- b. Transitive: DP_A V NP_O

To illustrate the lack of syntactic preclassification in the lexicon, I will concentrate on the V-slot, which can take event-denoting lexemes (stative and dynamic events) as well as object-denoting lexemes. In both cases, the meaning can be derived regularly from the construction to which the V-slot belongs plus the semantics of the lexeme. Thus, the situation differs from English, in which the semantics of nouns in the verb-position are

much more diverse (for an excellent description of the verbal use of nouns, cf. Clark & Clark 1979). For person-denoting lexemes (PDL), the rule is as follows (13b ii):

(13) Semantics of person-denoting lexemes in the V-slot:

- a. In intransitive argument-structure constructions:
 - (i) DP_S behaves like a PDL, DP_S is a PDL
 - (ii) DP_S becomes a PDL
- b. In transitive argument-structure constructions:
 - (i) DP_A CAUSE DP_O to be/ behave like a PDL
 - (ii) DP_A CONSIDER NP_O to be/ behave like a PDL

Example (14) illustrates the use of a person-denoting lexeme in a transitive V-slot:

(14) PDL in a transitive argument-structure construction (Mencius 5B.3):

wú yú Yàn Bān yě, zé yǒu zhī yǐ. □

I PREP Yan Ban be thus V:friend OBJ:3 PF

‘What I am to Yan Ban, I treat him/consider him as a friend.’

As I try to show in Bisang (forthcoming), there are different probabilities for object-denoting lexemes to occur in the V-slot. The probability roughly follows a version of the animacy hierarchy adapted to Late Archaic Chinese:

(15) 1st/2nd person > proper names > human > nonhuman > abstracts

The higher a lexeme is in the above hierarchy, the less likely is its occurrence in the V-slot. This hierarchy reflects a stereotypical implicature (Levinson 2000) in the sense that the more a lexeme refers to a concrete item the more likely is its occurrence in an N-slot. This implicature can be flouted for rhetorical purposes. In the following example, the proper name *Wu Wang* ‘King Wu’ occurs in the V-slot in the rhetorically marked context of regicide:

(16) Rhetorically marked use of a proper name in the V-slot (Zuo, Ding 10):

Gōng Ruò yuè: ěr yù **Wú wáng** wǒ hū?

Gong Ruo say you want Wu king I Q

‘Gong Ruo said: “Do you want to deal with me as the King of Wu was dealt with?” [King Wu was murdered. Pragmatic inference: ‘Do you want to **kill** me?’]

0.5.4. No correlation between lexicon and syntax: Tongan as a type/token language

In Broschart’s (1997) analysis of Tongan (Austronesian: Central-Eastern Malayo-Polynesian: Oceanic: Polynesian), the lexicon does not preclassify content words for syntactic categories. Thus, object-denoting lexemes (*fefine* ‘woman’) and action-denoting lexemes (*lele* ‘run’) can both occur with tense marking as well as with the article *e*:

(17) Tongan (Broschart 1997: 134):

a. na’e **lele** e kau **fefiné**

PST run ART PL:HUM woman

‘The women were running’

- b. na'e **fefine** kotoa e kau **lelé.**
 PST woman all ART PL:HUM run
 'The ones running were all female'

Morphology in Tongan is again not associated with syntactic categories. The existence of different morphemes provides evidence for the existence of lexical "paradigms" (Broschart 1997: 143) in the sense of sets of lexemes that can be combined with certain morphemes but these paradigms cannot be used for mapping into syntax. The morpheme *-Canga* (marker of domain) can be suffixed to action-denoting lexemes (*pule* 'govern' → *pule'anga* 'government'), to property-denoting lexemes (*motu'a* 'old' → *motu'a'anga* 'reason for having aged') and to object-denoting lexemes (*api* 'home' → *apitanga* 'homestead'). In spite of this, *pule'anga* as a whole can still take a position belonging to the TAM-domain:

(18) Tongan (Broschart 1997: 145):

'oku 'ikai ke pule'anga.
 PRS NEG SUBJ government

'It does not belong to the government.' (lit. 'It is not that it government-s.')

Object-denoting and action-denoting lexemes can be combined with TAM-markers (cf. *na'e* for 'past' in (17)) or articles (cf. *e* in (17)). If one assumes that TAM-syntagms are IPs and article-syntagms are DPs, Tongan must be analysed as a language with syntactic categories that lacks noun/verb distinction. Such a configuration is generally incompatible with formal theories. Broschart (1997) solves this paradox in the

following way. Languages with noun/verb distinction are characterized by a close correlation between syntactic and lexical categories. Tongan is not a noun/verb language, it is a type/token language and there is no need of any covariation of syntactic and lexical categories in such a language. In Broschart's (1997) view, there are two basic types of languages:

[T]here are languages which tend to emphasize the similarity of tense- and article-marked constructions (such as Tongan), and others which tend to emphasize the difference between tense-constructions and constructions which do not contain tense etc. ... This is to say that the major distinction in Tongan is between non-referential lexical "types" which are neither tense-marked nor article-marked and referential phrasal "tokens" which are either tense- or article-marked. (Broschart 1997: 156)

In a slightly more formal way, the difference between noun/verb languages like English or Latin and Tongan is based on the hierarchical position of two fundamental opposition pairs, i.e., [\pm predicable] and [\pm referential]. A typical noun/verb-language "DOMINANTLY distinguishes between items which are markedly predicable and those which are not", while Tongan "DOMINANTLY draws a distinction between items which are markedly referential and those which are not" (Broschart 1997: 157). Thus, noun/verb languages are characterized by [\pm predicable] > [\pm referential], while Tongan is the other way round, i.e., [\pm referential] > [\pm predicable]. A type/token-language first makes a distinction between referential phrasal tokens and non-referential lexical types. Then, the token will be subdivided into TAM-phrases (IPs) and article-phrases (DPs).

This distinction is crucial in noun/verb languages, whose dominant opposition pair is that of predicable (TAM) vs. non-predicable (article). Given the secondary importance of [\pm predicable], IPs and DPs may exist independently of N and V.

If the analysis of Late Archaic Chinese in section 0.5.3 is correct there are languages with DPs (and maybe IPs) in which lexical items are not strictly correlated to syntactic categories. This does not weaken Broschart's (1997) analysis, it only shows that the two types of noun/verb-languages and type/token-languages do not necessarily depend on the existence of a correlation between lexical and syntactic categories.

If Broschart's (1997) analysis of Tongan is correct this shows that Croft's (1991, 2000, 2001) conceptual space does not cover all the concepts that are involved in the distinction of word classes.

0.6. Adjectives

The status of the adjective as a separate word class in cross-linguistic comparison is described by Dixon (1977/1982), Schachter (1985), Bhat (1994), and Dixon and Aikhenvald (2004). The basic criteria for distinguishing adjectives from other word classes have been presented in section 0.3. In terms of Croft (cf. section 0.3.3), adjectives can be defined as property-denoting lexemes in the function of modification. In addition, adjectives are often specified for degree. Hence the traditional distinctions between positive, comparative and superlative.

The aim of this section is to summarize Dixon's (1977) seminal approach to adjectives. The advantage of his approach is that he distinguishes different semantic

types (cf. Wierzbicka 2000 as presented in section 0.2.1) which reveal hierarchical relations. There are languages with large, medium-sized and small adjective classes and languages with no adjectives. The semantic types involved can be arranged in a hierarchy which interacts with the size of the adjective class and with the expression format for property-denoting words in languages with no adjectives or with small adjective classes.

There are four core semantic types which are associated with large and with small adjective classes: DIMENSION ('big', 'small', ...), AGE ('new', 'young', 'old', ...), VALUE ('good', 'bad', ...), and COLOUR. Three more semantic types typically occur with medium-sized and large adjective classes: PHYSICAL PROPERTY ('hard', 'soft', ...), HUMAN PROPENSITY ('jealous', 'happy', ...) and SPEED ('fast', 'quick', ...). A last set of semantic types only occurs in large adjective classes in some languages: DIFFICULTY, SIMILARITY, QUALIFICATION, QUANTIFICATION, POSITION and CARDINAL NUMBERS. Igbo has a small adjective class consisting of antonymic pairs from each core semantic type: DIMENSION (*úkwu* 'large', *ñtà* 'small'), AGE (*óhurú* 'new', *ócyè* 'old'), VALUE (*óma* 'good', *ójọ́* 'bad') and COLOUR (*ojii* 'black/dark', *ọca* 'white/light').

In languages with no adjectives, the semantic types are expressed either by verbs (cf. "adjectival-verb languages" like Chinese in Schachter 1985) or by nouns (cf. "adjectival-noun languages" like Quechua in Schachter 1985). The same strategies are also applied in languages with small adjective classes. Dixon (1977, 2004: 4) points out certain tendencies for languages with small adjective classes. If PHYSICAL PROPENSITY terms are not in the adjective class, they are generally in the verb class. HUMAN PROPENSITY terms may be in either class.

0.7. On adverbs

Many languages have a fourth class of full words (in addition to nouns, verbs and adjectives) which are called adverbs. The problem with this class is that it is much more heterogeneous than the other word classes in terms of its function and in terms of its formal expression. In most languages, there is no morphological marking or different marking for different subclasses of adverbs. The definition suggested by the Latin term *ad-verbium* ('what is added to the verb' from Greek *epírrhēma* with the same meaning) certainly is too narrow because adverbs do not only modify verbs/predicates. Given the vastness of the field, Schachter's (1985: 20) definition of adverbs as "modifiers of constituents other than nouns" can still be seen as a good approximation even though some languages marginally allow certain adverbs with nouns (cf. English *during his stay **here***). This definition can be refined considerably by integrating the following three sources for the heterogeneity of adverbs mentioned by Sasse (1993a: 665): differences in scope, differences with regard to possible heads and differences in meaning.

Scope: Semantically, adverbs can operate on different layers. On the basis of Functional Grammar (Dik 1997), Ramat & Ricca (1998) distinguish four layers: predicate, state of affairs (event), propositional content and speech act. The following table provides some English examples for each layer (adapted from Ramat & Ricca 1998: 192):

INSERT TABLE 0.4 ABOUT HERE

Adverbs also have different syntactic scope. In terms of generative approaches, they may refer to V, to the VP, to vP (if one adopts the existence of VP shells), etc. The question to what extent the semantic scope and the syntactic scope are mutually dependent is discussed controversially and will not be addressed in this chapter. A lot of data with detailed semantic and syntactic analysis can be found in formal syntax. Cinque's (1999) more syntax-oriented and Ernst's (2002) more semantic-oriented approach provide good insights.

Possible heads: Apart from verbs, adverbs can modify adjectivals (*extremely clever*) or other adverbs (*He speaks rather slowly*).

Meaning: Traditionally, adverbs are subclassified into four semantic groups: local, temporal, modal or manner, causal.

0.8. Conclusion

The definition of word classes integrates all the central elements that make language structure and it integrates a whole paradigm of constructions.

Word-class definition combines cognitive or semantic criteria (object, property, action) with criteria of pragmatics or discourse (reference, modification, predication; topic and comment) and with morphosyntactic expression formats. In addition, word classes are at the cross-roads between the lexicon and syntax. Analyses that only integrate some of these four prerequisites for distinguishing word classes (cf. (1)) run the risk of missing important typological options of word-class distinctions (cf. section 0.5.1). Of particular importance is the methodological distinction between the lexical

and the syntactic levels of analysis. If this distinction is neglected, it is impossible to discover systems as the ones represented by Late Archaic Chinese (section 0.5.3) and Tongan (section 0.5.4) in which there is no one-to-one correlation between lexical and syntactic categories — a property that is against general assumptions in most linguistic theories.

Analyses of word-class systems that only look at the properties of words in an individual construction may provide interesting insights into the behaviour of lexical items representing different semantic classes within that construction but they cannot say very much about word classes in general. Thus, the fact that a language is omnipredicative does not exclude in principle that it has word classes (cf. Launey 1994 on Classical Nahuatl in section 0.5.2).

According to a recent paper by Evans & Osada (2005) on Mundari (Dravidian) the claim that a language lacks a noun/verb distinction must meet the following three criteria:

(i) *Compositionality*: The semantic differences of a given lexeme in different syntactic positions (e.g. argument or predicate) must be fully attributable to the functions of these positions (Evans & Osada 2005: 367).

(ii) *Bidirectionality*: It is not sufficient to say that X can be used in the function of Y, it is also necessary that Y can take the function of X (Evans & Osada 2005: 375). Thus, if an object-denoting lexeme can take the V-position, it should also be possible for an action-denoting lexeme to occur in the N-position (this seems in fact to be true for Late Archaic Chinese; cf. Bisang forthcoming for some examples).

(iii) Exhaustiveness: The lack of a noun/verb-distinction needs to hold for all the relevant words of the lexicon. It is not sufficient to find a few lexical items which happen to be able to occur in the V-position and in the N-position.

These methodological criteria nicely complement the four structural prerequisites mentioned above and they seem to work with Late Archaic Chinese (section 0.5.3) as well as with Tongan (section 0.5.4) although more research will be needed for the details.

References

- Aikhenvald, A. Y. (2000). *Classifiers. A typology of noun categorization devices*. Oxford: Oxford University Press.
- Anward, J., Moravcsik, E. A. and Stassen, L. (1997). 'Parts of speech: A challenge for typology', *Linguistic Typology* 1: 167–183.
- Bhat, D. N. S. (1994). *The adjectival category: Criteria for differentiation and identification*. Amsterdam: John Benjamins.
- Bisang, W. (forthcoming). 'Precategoriality and argument structure constructions in Late Archaic Chinese' in: J. Leino (ed.), *Constructional approaches to language*. Amsterdam and Philadelphia: Benjamins.
- Broschart, J. (1991). 'Noun, verb, and participation. A typology of the noun/verb distinction', in: H. Seiler and W. Premper (eds.), *Partizipation. Das sprachliche Erfassen von Sachverhalten*. Tübingen: Narr, 65–137.
- Broschart, J. (1997). 'Why Tongan does it differently: Categorical distinctions in a language without nouns and verbs', *Linguistic Typology*: 123–165.
- Cinque, G. (1999). *Adverbs and functional heads: A cross-linguistic perspective*. Oxford: Oxford University Press.
- Clark, E. V., and Clark, H. H. (1979). 'When nouns surface as verbs', *Language* 55: 767–811.
- Croft, W. A. (1991). *Syntactic categories and grammatical relations: The cognitive organization of information*. Chicago: Chicago University Press.

- Croft, W. A. (2000). 'Parts of speech as typological universals and as language particular categories', in: P. M. Vogel, and B. Comrie (eds.), *Approaches to the typology of word classes*. Berlin: Mouton de Gruyter, 65–102.
- Croft, W. A. (2001). *Radical Construction Grammar. Syntactic Theory in Typological Perspective*. Oxford: Oxford University Press.
- Dik; S. (1997). *The Theory of Functional Grammar. Part 1: The Structure of the Clause (TGF 1)*. Hengeveld, Kees. ed. Berlin and New York: Mouton de Gruyter.
- Dixon, R. M. W. (1977). 'Where have all the adjectives gone?', *Studies in Language* 1: 19-80.
- Dixon, R. M. W. (1982). *Where have all the adjectives gone? And other essays in semantics and syntax*. Berlin: Mouton.
- Dixon, R. M. W. (2004). 'Adjective classes in typological perspective', in: R. M. W. Dixon, and. A. Y. Aikhenvald (eds.), *Adjective classes. A cross-linguistic typology*. Oxford: Oxford University Press, 1–49.
- Dixon, R. M. W., and Aikhenvald, A. Y. eds. (2004). *Adjective classes. A cross-linguistic typology*. Oxford: Oxford University Press.
- DuBois, John W. (1980). 'Beyond definiteness: The trace of identity in discourse', in: Chafe, W. (ed.), *The pear stories*. Norwood, NJ.: Ablex, 203–274.
- Ernst, T. (2002). *The syntax of adjuncts*. Cambridge: Cambridge University Press.
- Evans, N., and Osada, T. 2005. 'Mundari: The myth of a language without word classes', *Linguistic Typology* 9: 351–390.
- Givón, T. (1981). 'Logic vs. pragmatics, with natural languages as the referee', *Journal of Pragmatics*, 6: 81–133.

- Hengeveld, K. (1992). *Non-verbal predication. Theory, typology, diachrony*. Berlin: Mouton de Gruyter.
- Himmelman, N. P. Jr. (1987). *Morphosyntax und Morphologie—Die Ausrichtungsauffixe im Tagalog*. München: Fink.
- Himmelman, N. P. Jr. (2005). ‘The Austronesian languages of Asia and Madagascar: Typological Characteristics’, in: K. A. Adelaar, and N. P. Himmelman Jr. (eds.), *The Austronesian Languages of Asia and Madagascar*. London: Routledge, 110–181.
- Hockett, C. F. (1966). ‘The problem of universals in language’, in: J. H. Greenberg (ed.), *Universals of language*. Cambridge, M.A.: MIT Press, 1–29.
- Hopper, P. J., and Thompson, S. A. (1984). ‘The discourse basis for lexical categories in universal grammar’, *Language* 60: 703–752.
- Hopper, P. J., and Thompson, S. A. (1985). ‘The iconicity of the universal categories ‘Noun’ and ‘Verb’’, in: J. Haiman (ed.), *Iconicity in syntax*. Amsterdam and Philadelphia: John Benjamins, 151–183.
- Jacobsen, W. H. Jr. (1979). ‘Noun and verb in Nootkan’, in: B. S. Efrat (ed.), *The Victoria Conference on Northwestern Languages*. (British Columbia Provincial Museum Heritage Record No 4). Victoria, B.C.: British Columbia Provincial Museum, 83–155.
- Lallot, J. (1998). *La grammaire de Denys le Thrace*. Paris: CNRS Éditions.
- Langacker, R. W. (1987). ‘Nouns and verbs’, *Language* 63: 53–94.
- Launey, M. (1994). *Une grammaire omniprédicative. Essai sur la morphosyntaxe du nahuatl classique*. Paris: CNRS Éditions.

- Levinson, S. C. (2000). *Presumptive meanings. The theory of generalized conversational implicature*. Cambridge, Massachusetts: MIT Press.
- Mithun, M. (2000). 'Noun and verb in Iroquoian languages: multicategorisation from multiple criteria', in: P. M. Vogel, and B. Comrie (eds.), *Approaches to the typology of word classes*. Berlin: Mouton de Gruyter, 397–420.
- Ramat, P., and Ricca, D. 'Sentence adverbs in the languages of Europe', in: J. van der Auwera with D. P. Ó Baoill (eds.) *Adverbial constructions in the languages of Europe*. Berlin: Mouton de Gruyter, 187–275.
- Robins, R. H. (1964). *A short history of linguistics*. London and New York: Longman.
- Sasse, H.-J. (1993a). 'Syntactic categories and subcategories', in: J. Jacobs, A. von Stechow, W. Sternefeld, and T. Vennemann (eds.), *Syntax*. Berlin: Mouton de Gruyter, 646–686.
- Sasse, H.-J. (1993b). 'Das Nomen – eine universale Kategorie?', *Sprachtypologie und Universalienforschung* 46: 187–221.
- Schachter, P. (1985). 'Parts of speech systems', in: T. Shopen (ed.) *Language typology and syntactic description, Vol. 1: Clause structure*. Cambridge: Cambridge University Press, 3–61.
- Swadesh, M. (1938). 'Nootka internal syntax', *International Journal of American Linguistics* 9: 77–102.
- Tchekhoff, C. (1981). *Simple sentences in Tongan*. Canberra: Australian National University.
- Uehara, S. (1998). *Syntactic categories in Japanese: A typological and cognitive introduction*. Tokyo: Kurosio.

Voeltz, E. F. K. and Kilian-Hatz, C. (2001). *Ideophones*. Amsterdam and Philadelphia: John Benjamins.

Wierzbicka, A. (2000). 'Lexical prototypes as a universal basis for cross-linguistic identification of 'parts of speech'', in: P. M. Vogel, and B. Comrie (eds.), *Approaches to the typology of word classes*. Berlin: Mouton de Gruyter, 285–317.

	<i>boys</i>	<i>like</i>	<i>girls</i>
range of syntactic functions	argument	predicate	argument
occurrence with morphosyntactic categories	number	number tense	number

Table 0.1: grammatical properties of *boys*, *girls*, *like*

	REFERENCE	MODIFICATION	PREDICATION
OBJECTS	<i>object reference:</i> UNMARKED NOUNS	<i>object modifier:</i> genitive, adjecti- valizations, PP's on nouns	<i>object predication:</i> predicate nominals copulas
PROPERTIES	<i>property reference:</i> deadjectival nouns	<i>property modifier:</i> UNMARKED ADJECTIVES	<i>property predication:</i> predicate adjectives copulas
ACTIONS	<i>action reference:</i> action nominals, complements, infinitives, gerunds	<i>action modifier:</i> participles, relative clauses	<i>action predication:</i> UNMARKED VERBS

Table 0.2: Croft's conceptual space for parts of speech and function-indicating morphosyntax
(adapted from Croft 1991: 53/67, Croft 2000: 89 and Croft 2001: 88/92)

	Action-denoting lexemes			Object-denoting lexemes	
	S/A	O	Reflexive	S	Possessive
1.SG	<i>t(i)-</i>	<i>-neech-</i>	<i>-n(o)-</i>	<i>n(i)-</i>	<i>-n(o)-</i>
2-SG	<i>t(i)/x(i)-</i>	<i>-mitz-</i>	<i>-m(o)-</i>	<i>t(i)-</i>	<i>-m(o)-</i>
3.SG	\emptyset -	<i>-c-/qu(i)-</i>	<i>-m(o)-</i>	\emptyset -	<i>-ii-</i>
1.PL	<i>t(i)-</i>	<i>-teech-</i>	<i>-t(o)-</i>	<i>t(i)-</i>	<i>-t(o)-</i>
2.PL	<i>aM-/x(i)-</i>	<i>-ameech-</i>	<i>-m(o)-</i>	<i>aM-</i>	<i>-am(o)-</i>
3.PL	\emptyset -	<i>-quiM-</i>	<i>-m(o)-</i>	\emptyset -	<i>-iiM</i>

Table 0.3: Person agreement markers on action-denoting lexemes and on object-denoting lexemes (adapted from Launey 1994: 10–11)

Predicate adverbs:		<i>quickly</i>
Event adverbs:	Objective modality:	<i>obligatorily, necessarily</i>
	Temporal setting:	<i>yesterday; often, rarely</i>
	Spatial setting:	<i>here</i>
Propositional adverbs:	Modal adverbs:	<i>probably, certainly; allegedly, evidently, hopefully</i>
	Event-oriented evaluatives:	<i>unfortunately, surprisingly</i>
	Participant-oriented evaluatives:	<i>cleverly, wisely, kindly</i>
Speech-act adverbs:	Speech act-oriented:	<i>briefly;</i>
	Speaker/Hearer-oriented:	<i>frankly, seriously, confidentially</i>

Table 0.4: Semantic scope-based types of adverbs

Intellectual and academic autobiography:

Study of General Linguistics, Chinese and Georgian at the University of Zurich (Switzerland). Professor of General and Comparative Linguistics (Typology) in Mainz (Germany) since 1992.

Research interests: Linguistic typology/language universals, formal vs. functional linguistics, grammaticalization, language contact/areal typology. Languages of interest: East and mainland Southeast Asian languages, Caucasian languages (Georgian and others), Austronesian languages (Bahasa Indonesia, Tagalog, Yabêm, Paiwan) and Yoruba (together with Remi Sonaiya).

Key names and subjects:**Names**

Aikhenvald, A. Y.

Bhat, D. N. S.

Bisang, W.

Broschart, J.

Clark, E. V.

Clark, H. H.

Croft, W. A.

Dixon, R. M. W.

Hengeveld, K.

Himmelmann, N. P. Jr.

Hopper, P. J.

Jacobsen, W. H.

Lallot, J.

Langacker, R. W.

Launey, M.

Mithun, M.

Ramat, P

Rica, D.

Robins, R.

Sasse, H.-J.

Schachter, P.

Thompson, S. A.

Wierzbicka, A.

Subjects/Languages

Adjective

Adverb

Animacy Hierarchy

Argument

Argument Structure Construction

Cayuga

Chinese

Chinese: Late Archaic

Conceptual space

Content words

Count noun

Discourse function

Distributional analysis

English

Function words

Functional Grammar (FC)

Function-indicating morphosyntax

Iconicity

Igbo

Implicatures

Iroquoian

Lexicon

Lexicon-syntax mapping

Makah

Markedness

Mass noun

Modification

Nahuatl: Classical

Natural Semantic Metalanguage (NSM)

Noun/Verb distinction

Nootkan

Noun

Omnipredicativity

Predication

Quechua

Radical Construction Grammar

Reference

Scope: semantic

Scope: syntactic

Semantic classes

Tagalog

Tongan

Tuscarora

Type/Token-language

Universals: implicational

Verb

Key words for electronic search purposes

Noun/verb distinction

Noun

Verb

Adjective

Word class

Parts of Speech

Suggestions for further reading

Two more extensive lexicon papers:

Sasse, H-J. (1993a). ‘Syntactic categories and subcategories’, in: J. Jacobs, A. von Stechow, W. Sternefeld, and T. Vennemann (eds.), *Syntax*. Berlin: Mouton de Gruyter, 646–686.

Schachter, P. (1985). ‘Parts of speech systems’, in: T. Shopen (ed.) *Language typology and syntactic description, Vol. 1: Clause structure*. Cambridge: Cambridge University Press, 3–61.

Other papers and volumes:

Broschart, J. (1997). ‘Why Tongan does it differently: Categorial distinctions in a language without nouns and verbs’, *Linguistic Typology* 1: 123-165.

Clark, E. V. and Clark, H. H. (1979). ‘When nouns surface as verbs’, *Language* 55: 767–811.

Dixon, R. M. W. (1977). ‘Where have all the adjectives gone?’, *Studies in Language* 1: 19–80.

Dixon, R. M. W. and Aikhenvald, A. Y. eds. (2004). *Adjective classes. A cross-linguistic typology*. Oxford: Oxford University Press.

Hengeveld, K. (1992). *Non-verbal predication. Theory, typology, diachrony*. Berlin: Mouton de Gruyter. (chapter 4 “parts of speech”, pp. 47–72).

Vogel, P. M. and Comrie, B. (eds.), *Approaches to the typology of word classes*.

Berlin: Mouton de Gruyter. [This volume contains Croft (2000), Mithun (2000), Wierzbicka (2000) and many more interesting papers on word class].

Finally, I would like to refer the reader to a recent target article on parts of speech in Mundari in *Linguistic Typology*:

Evans, N. and Osada, T. 2005. 'Mundari: The myth of a language without word classes', *Linguistic Typology* 9: 351–390.