ASPECTS OF WARLPIRI MORPHOLOGY AND SYNTAX

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ABSTRACT

I present a fragment of Warlpiri grammar, within the framework of Lexical-Functional Grammar (LFG), focusing on the morphological and syntactic representation of the relations between arguments and argument-taking predicates. In Chapter 2, I discuss the assignment of grammatical functions to arguments within finite clauses headed by verbs or nominals. I argue for a rule which assigns grammatical functions freely to the daughters of S. This rule is the source of free word-order in Warlpiri. I also argue for a rule allowing an argument-taking predicate to introduce a null pronominal for any grammatical function which is linked to an argument of that predicate. This rule is the source of zero anaphora in Warlpiri.

Chapter 3 shows that case-suffixes have two main uses: to indicate that a nominal bears a particular grammatical function, such as SUBJECT, or that it is an attribute of another argument, and to act as an argument-taking predicate analogous to an English preposition. To preserve the *Lexical Integrity Hypothesis*, this last use requires the assignment of grammatical functions within the morphology, as part of the word-building process. I show that this assignment allows an account of the unusual phenomenon of double case-marking.

Chapters 4 and 5 treat the use of nominals as secondary predicates. The existence of discontinuous nominal expressions marked with the same case-suffix is shown to follow from independently needed rules. I claim that nominal secondary predicates are normally independent adjuncts, rather than subcategorizing arguments, as in English. A striking illustration of this is provided by the great freedom resultative attributes in Warlpiri have, compared with their English counterparts.

In Chapter 6, I examine the use of nominalized verbs, action nominals, and complementizer suffixes as secondary predicates. Such clauses have null pronominal SUBJECTs which bear case, suggesting that they must be *anaphorically* controlled. I show that the properties of complementizer suffixes can be represented in the same way as the properties of case-suffixes, with the exception that complementizer suffixes specify the grammatical function of their controllers. I present a classification of Warlpiri complementizer suffixes, in terms of their controllers and their tense properties, including a discussion of clauses with controlled OBJECTs.

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ABBREVIATIONS

Sources

I have tried to indicate the source of each example sentence where I know it. If the example sentence is made up, I have indicated this, unless the sentence is elementary.

Lowercase words enclosed in square brackets, e.g. [wapami], refer to entries in the *Warlpiri Dictionary*.

Works by Warlpiri speakers.

JJ1 Jerry Jangala, text 1. In Swartz (ed.) See Bibliography.

JK June Napanangka. *Jarnpa-kurlu.* Yuendumu, NT. 1981

JMK June Napanangka. *Janmarda-kurlu.* Yuendumu, NT. 1981

KMY Janet Nakamarra Long. *Karnta manu yankirri.* Willowra, NT. 1982

MKJ Derek Wayne Jungarrayi, Cary Sherman, Leonard Granites Japanangka, Otto Jungarrayi Sims, and Christopher Poulson Japangardi. *Know the European Law.* (*Milyapungkalu kardiyakurlangu jukurrpa*). Yuendumu, NT. 1981

MLJ Maurice Luther Jupurrula, introduction. In Swartz (ed.) See Bibliography.

NK June Napanangka. *Nyurnu-kurlu.* Yuendumu, NT. 1981

NM June Napanangka. *Nyurruwiyi kuja kalalu maliki-kirlirli kuyuju yirra-pungu.* Yuendumu, NT. 1981

NN *Ngurrju maninja kurlangu. Nyurnu yapa kurlangu.* (*Bush medicine*). (Contributors: Tom Henshall, Darby Jampijinpa, Jilly Nakamarra Spencer, Francis Jupurrula Kelly, Peter Bartlett, Leonard Japanangka Granites, Jenny Price, Edith Coulshed, George Jampijinpa Robertson.) Yuendumu, NT. 1980

PP B.W.Japanangka and L. Napangardi. *Purlka pampa-kurlu.* Yuendumu, NT. 1981

Survey Robin Japanangka Granites, K. Hale, and D. Odling-Smee. See Bibliography.

TK June Napanangka. *Nyurruwiyi kuja kalalu wurnaju wapaja tangkiyi-kirli* Yuendumu, NT. 1981

WNJ June Napanangka. *Wirlinyi nyurru-wiyi-warnu manu jalangujalangu-warnu-kurlu*. Yuendumu, NT. 1982

YK June Napanangka. *Yankirri-kirli* Yuendumu, NT. 1981

Works by Hale.

EFW Hale, Kenneth: *Essential features of Warlpiri main clauses*. See Bibliography.
Excerp Hale, Kenneth: Excerptions from fieldnotes.
Hnotes Hale, Kenneth: fieldnotes
H59 Hale, Kenneth: fieldnotes made in 1959
H60Dial Hale, Kenneth. [H59:7.110os]
H66PSJ Hale, Kenneth: transcription of text recorded by Paddy Stuart Jupurrula.
Messages Messages sent to Ken Hale from Yuendumu.
PMW Hale, Kenneth: *Person marking in Walbiri*. See Bibliography.
PWT Hale, Kenneth: *Position of Warlpiri in a Typology of the base*. See Bibliography.
(Various other fieldnote references begining with H refer to Hale).

Works by others

Carrier Carrier, Jill. See Bibliography.
JS Simpson, Jane: fieldnotes 1982
Kesteven Kesteven, Sue. See Bibliography.
ML Laughren, Mary. See Bibliography.
Nash Nash, David. See Bibliography.
Swartz Swartz, Stephen. See Bibliography.

Abbreviations used in glosses

NOTE: I have adopted the following conventions in glossing.
1. The default case ABSOLUTIVE is marked.

2. The default AUXILIARY Aspect marker is not marked.

3. If a single Warlpiri word corresponds to several English words, I have marked the breaks with fullstops. However, I have been cavalier about using single English words to gloss preverb-verb combinations, and verbs formed with the CAUS or INCH suffixes, if the combination is not transparent.

pikirri	*wajili-pi*
spear.thrower	chase

1. AUXILIARY

a. *Propositional particle*

DEC	declarative	*karinganta*
HYP	counterfactual	*kulanganta*
INT	interrogative	*japa*
PROB	probably, potential	*marda*
QUOT	quotative, suppose	*nganta*

b. *Conjunctions*

AND	and, inclusive or	*manu*
BUT		*kala*

c. *Sentence particle*

Form	Gloss	
ADMON	*kalaka*	potential, admonitive
ATT	*kuku*	attempt
FUT	*kapi/kapu*	future
FUT	*ngarra*	future
IF	*kaji*	uninstantiated event
NEG	*kula*	negative
NEG	*winjarra/winjarni*	negative
PERM	*pangkala*	permissive
POT	*kajika*	potential, present uninstantiated
REAS	*yungu/yinga/yingi*	causal, reason
REAS	*yi*	causal,reason
REL	*kuja/ngula*	instantiated event, relative clause
USIT	*kala*	remote past, usitative

d. *Aspect*

NOTES:

1. Occasionally in the texts *pa* is used for *ka*. I have standardized these to *ka*.

2. I have in general not recorded the zero PERF Aspect.

PRES	*ka*	present imperfect

PAST	*-lpa*	past imperfect
PERF	Ø	perfect

e. *Pronominal clitic*

NOTE: I have not distinguished between Clitic 1 (SUBJECT) and Clitic 2 (non-SUBJECT) in glossing pronominal clitics. So, if an AUX has a first person SUBJECT Clitic 1, and a second person OBJECT Clitic 2: *rna-ngku*, it is glossed as "1sg-2sg".

sg	singular	in	inclusive
du	dual	ex	exclusive
pl	plural	CON	conative
1,2,3	first, second, third person	refl	reflexive
DAT	third person (singular) DATIVE clitic		

2. VERB

NOTE: Verbs are cited in their *Non-past* form in the text.

a. Tense inflections, arranged by conjugation:

	V1	V2	V3	V4	V5
IMM.FUT	*ju*	*ku*	*ngku*	*lku*	*nku*
Immediate Future (rare)					
IMP	*ya*	*ka*	*ngka*	*nja*	*nta*
Imperative					
IRR	*ya-rla*	*ka-rla*	*ngka-rla*	*nja-rla*	*nta-rla*
Irrealis					
NPST	*mi,Ø*	*rni,ni*	*nyi*	*rni,ni*	*ni*
Nonpast					
PAST	*ja*	*rnu*	*ngu*	*rnu*	*nu*
Past					
PREST	*nya*	*rninya*	*nganya*	*rninya*	*nanya*
Presentational Present (rare)					

b. **Non-finite forms**

INF Infinitive	*nja*	*rninja*	*nja*	*rninja*	*ninja*
AG Agentive	*ngu*	*rnu*	*ngu*	*rnu*	*nu*

c. **Verb formatives**

CAUS	causative	*N-mani*
EMIT	emit noise	*N-mani*
INCH	inchoative	*N-ⁱarrimi*
LATIVE	'go and V'	*V-INF-ini*
PROG	progressive	*V-INF-yani*

d. **Directionals**

HERE	hither, to here	*-rni*
BY	past, by, across	*-mpa*
THERE	thither, to there	*-rra*

3. **NOMINAL**

a. *Case*

grammatical:

ABS	ABSOLUTIVE	*Ø*
DAT	DATIVE	*-ku*
ERG	ERGATIVE	*-ngku, -rlu*

semantic:

ALL	ALLATIVE	*-kurra*
COM	COMITATIVE: 'with'	*-ngkajinta, -rlajinta*
EL	ELATIVE	*-ngurlu*
LOC	LOCATIVE	*-ngka, -rla*
TRANS	TRANSLATIVE	*-karda*

derivational:

ASSOC	associative, perfective	*-warnu*
CAPAB	capable of	*-marda*
CHAR	characteristic	*-panu*
DENIZ	denizen of	*-ngawurrpa*
EXCESS	excessive	*-witawangu*
INHAB	inhabitant of	*-wardingki*
LIKE	as, like, simile-former	*-piya*
PERL	perlative: 'along'	*-wana*
POSS	possessive	*-kurlangu*
PRIV	privative, negative	*-wangu*
PROP	proprietive, having	*-kuriu, -parnta*
SOURCE	Elative of SOURCE	*-jangka*

b. *Number*

PL	PLURAL	*-patu*
DU	DUAL	*-jarra*

c. *Nominal formatives*

ANOTHER		*-kariyinyanu*
BETTER	be better off, rather	*-katu*
DIM	diminutive	*-pardu*
EVER	on interrogatives	*-puka*
E.G.	for example	*-rlangu*
KIN	various kinship suffixes, e.g.	*-puraji, nyanu*
LIKE	as, like, simile-former	*-piya*
ONE	the one which is, definite	*-pirdinypa*
ONLY		*-mipa*
OTHER		*-kari*
SET		*-pinki*
TOWARD	towards	*-purda*
VERY	intensifier, really	*-nyayirni*

d. *Demonstratives*

NOTES:

1. The clitic *ju* freely attaches to most of the demonstratives. I will not gloss this clitic separately when attached to demonstratives.

2. I generally do not gloss morphologically unmarked demonstratives with ABSOLUTIVE

case.

That	that - referring to clause	*ngula*
That.far		*yinya*
That.indef	that one at invisible or indefinite location, that one off somewhere	*mirni, yalarni*
That.near		*yalumpu*
That.rem	that removed	*yali*
The	that aforementioned	*nyanungu*
The	that one you know about	*yangka*
This		*nyampu*
This.indef	that one near at invisible or indefinite location, that one near somewhere	*mirni-mpa, yalarni-mpa*
Thus	like that, like this, manner	*kuja*

4. Complementizers appearing on both nominals and infinitives

ADMON	admonitive	*-kujaku*
ALL	ALLATIVE purposive complementizer	*-kurra*
ASSOC	associative, perfective	*-warnu*
CIRC	circumstantial	*-puru*
COMCOMP	COMITATIVE complementizer	*-rlajinta*
DAT	DATIVE purposive complementizer	*-ku*
DESIR	desirous of	*-kupurda*
OCOMP	Object-controlled complementizer	*-kurra*
OBLCOMP	Oblique-controlled complementizer	*-rlarni*
PREP	preparatory	*-kungarnti*
PRIV	privative, negative	*-wangu*
SEQ	sequential	*-rla*
SSCOMP	Subject-controlled complementizer	*-karra*

5. Clitics and particles

NOTE: Clitics other than AUXILIARY clitics are marked with a + boundary.

ALSO		*+ yijala*
ASSERT	assertive	*kari*
BEFORE	state/action not coincident with matrix event	*+ wiyi*
CLEARLY	obviously, as you know	*+ jala*
CONC	concessive, contrastive	*+ kula*
CONT	continuative (on verbs)	*+ yi*
EMPH	emphatic	*+ wu(rru)*
EMPH	emphatic, interrogative	*+ nya*

EUPH	used both as a stylistic phonological extender, and as an 'old information marker'	*+ju*
EVID	evidential, assertive	*+ja*
JUST	just	*ngari*
PREC	precisely	*+kirli*
STILL	still, yet	*+juku*
THEN	state/action coincident with matrix event	*+lku*
WONDER	I wonder, self-interrogative	*mayi*
YOU.KNOW		*yangka*

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1. Introductory Chapter

1.1 Introduction

> *The main point of psychologic interest here involved is that logical relations that are in many, probably most, languages expressed by syntactic means are in several American languages expressed, to at least some extent, by morphologic, or, if preferred, compositional processes. "I song-write" is such a replacement of the syntactic "I write songs", but the replacement is logically and psychologically parallel to that of "as white as snow" by "snow-white". In both cases the grammatical expression of a logical relation, in other words a syntactic process, is sacrificed to a compositional process in which the logical relation is only implied. The sacrifice of syntax to morphology or word-building is indeed a general tendency in more than one American language.* [Sapir, 1911: 257].

Like the American languages described by Sapir, Warlpiri, a Pama-Nyungan language spoken in Central Australia, is a language in which the burden of representing the relations between predicates and arguments (Sapir's "logical relations")is borne by the morphology, rather than the syntax. Many of the properties associated with constituent structure in English are associated with morphological structure in Warlpiri. Recent work in generative grammar has tended to concentrate on languages which make much greater use of constituent structure than Warlpiri does. There has been relatively little attention paid to representing information about grammatical functions which is provided by the morphology.

In this thesis I present a fragment of the grammar of Warlpiri, in an attempt to show how the morphological expression of "logical relations" can be represented within the

Lexical-Functional Grammar theory of syntax (LFG),[2] and the Lexical Morphology/Phonology theory of morphology (LPM).[3] I have chosen to use LFG, because it provides an explicit theory of predicate-argument relationships which is independent of configurational or morphological structure. This involves an intermediate level of representation consisting of *grammatical functions*. As Carrier (1976) observes, a number of generalizations about Warlpiri syntax and morphology are hard to represent without recourse to grammatical functions. Although in principle the LFG theory encompasses both the morphological and the syntactic expressions of grammatical functions, in fact relatively little work has been done in developing an LFG theory of morphology. I will therefore take as my starting point the LPM theory of morphology, as its premises do not conflict with the requirements LFG has of a compatible theory of morphology.

---

1. The material comes from three places. First, I have relied on previous work, in particular Carrier, 1976; Granites, Hale and Odling-Smee, 1976; Hale, 1967, 1973a, 1974, 1976, 1981a, 1981b, 1982a, 1982b, to appear; Laughren, 1977, 1978, 1981, 1982, and Nash, 1979b, 1980, 1982.

Second, I have made use of texts and material collected by Hale and Laughren, in particular of the material excerpted for the *Warlpiri Dictionary* being prepared at M.I.T. and the Warlpiri Literature Production Centre, Yuendumu.

Third, I was able to check a few points with some Warlpiri speakers. Since I do not speak Warlpiri, claims I make about the grammaticality and ungrammaticality of sentences, as well as generalizations should be treated with caution. All but a few very simple example sentences have been taken from the sources listed in the Abbreviations section. Generalizations that I make which have not appeared in previous work on Warlpiri have usually been derived in conversations with Hale and Laughren. Of course, they are not responsible for the interpretations I have placed on these generalizations, or for any descriptive inadequacy.

2. This framework is developed in, among other works, Andrews, 1982c; Bresnan, 1979; Grimshaw, 1982; Halvorsen (to appear); L. Levin (in prep.); Mohanan, 1982b; Montalbetti, 1981; Neidle, 1982a. and b.; and the papers in Bresnan, ed., 1982b.

3. This framework developed from work by Allen (1978), and Pesetsky (1979). More recent work includes Mohanan (1982), Kiparsky (1982, and to appear).

A principal concern of this thesis is the interaction of morphology and syntax. I will argue that, in order to maintain certain constraints placed on this interaction in the LFG and LPM theories, and in order to provide an adequate account of Warlpiri, it is necessary to allow much more information to be expressed in the morphology than has been customary. First, I propose that words may be *functionally* complex; they need not be single lexical packages, but may carry information about different "logical relations", as, for example *song-write* does in Sapir's example. Second, I claim that, as well as the information overtly expressed by morphological markers such as case, the lexical entries for words must also contain a substantial amount of information about grammatical functions which is not overtly expressed. In particular, information about the case of selected grammatical functions, and about null anaphora properties of selected grammatical functions may be part of the lexical entry of a word. For instance, it is generally accepted that to know the meaning of the word *hit* one must know that it selects a *hitter*, and *something hit*. The lexical entry for a verb such as *hit* in English contains the information that it is subcategorized for two arguments. I claim that in Warlpiri, to know the meaning of the verb *pakarni* 'hit', one must not only know that it selects a *hitter* and *something hit*, one must also know that the *hitter* receives ERGATIVE case, and the *thing hit* ABSOLUTIVE case. No overt affix on the verb expresses this information. However, one does not have to learn for each verb the case of every argument it is subcategorized for. Rather, there are lexical redundancy rules which generalize these statements, perhaps along the lines of the case-linking proposed in Ostler (1980). More controversially, I propose another type of lexical rule which introduces null anaphora for selected grammatical functions. In Warlpiri, a sentence may consist of just a verb. The selected arguments of the verb are understood to be third person definite, and usually singular. I propose that this information is part of the lexical entry of the verb, and that it is introduced by a general lexical rule.

From this, it is clear that I assume that the lexicon does not merely consist of lists of words and affixes, and rules for combining them. It contains information essential for determining the predicate-argument relations in a sentence.

The first part of this chapter is devoted to general reasons for adopting a theory that makes use of grammatical functions. I will then describe basic properties of LFG and LPM. Finally, I provide an outline of the thesis.

1.2 Events and participants

Consider the sentence *Napaljarri saw Jangala*, and its Warlpiri translation:

(1) Napaljarri-rli nya-ngu Jangala.
Napaljarri-ERG see-PAST Jangala.
Napaljarri saw Jangala.

The event is one of *seeing*; the participants in the event are the *see-er* and the *entity seen*. One of the tasks of the theoretical linguist is to represent the knowledge that Jangala is the *person seen*, and Napaljarri is the *see-er*, Sapir's "logical relations". I will refer to these as the relation between an *argument-taking predicate*[1] which represents the event, and *arguments*, which represent the participants in the event. I will call this relation the *predicate-argument relationship*. *Arguments* themselves can be semantically simple (having no arguments of their own), or semantically complex (being argument-taking

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1. The use I make of the term *argument-taking predicate* is equivalent to the use made of the term *predicate* in the first-order predicate calculus. A predicate is an operator with one or more arguments. (This is the use that Lyons (1977) terms *predicator*). Thus, the predicate *see* has as arguments *Napaljarri* and *Jangala* in the sentence given.

I have chosen to use the phrase *argument-taking predicate*, rather than *predicate*, to distinguish this use from two other common uses. The first is exemplified in the following sentence.

'Traditional grammarians consider a sentence to consist of a Subject and a Predicate'

Here, the word 'predicate' describes a function that is missing one argument, the SUBJECT argument. This use of the word *predicate* is found in current Government-Binding literature (Zubizarreta (1982)), as well as in the work of Marantz (1981a and b).

The second use of the word 'predicate' is to be found in the LFG literature. The term 'predicate' (shortened to PRED) names a feature whose value is the lexical form (loosely the meaning) of nouns, verbs, and other lexical items. Thus, the PRED feature is a device for expressing a *grammatical attribute* whose *value* is a semantic form, while an argument-taking predicate is a *semantic concept*.

predicates that take arguments). The argument-taking predicate *see* demands that one of its arguments be a *see-er* and the other *the entity seen*. I will call a specific type of relationship, such as that of the *see-er* to the event of *seeing*, a *semantic relationship*, and I will describe the bearer of that relationship as having a *semantic role*.[2] Thus Napaljarri has the semantic role of *see-er* in (1). To express the intuition that *see* requires a *see-er* argument and an *entity seen*, I will say that *see* <u>*selects*</u> these arguments.

One can imagine all sorts of ways the predicate-argument relationship could be represented. However, in actual fact languages provide three main ways of expressing the relationships: the *meaning* of words (more precisely, their lexical entries), *constituent structure* (the linear order and hierarchical arrangement of words), and the *morphological marking* of words.

All languages use the *meaning* of words to represent predicate-argument relationships. For example, the meanings of *see* in English and *nyanyi* in Warlpiri provide the information that these words are argument-taking predicates which take arguments bearing certain semantic roles, as described above. But languages vary as to how much they use *constituent-structure* and how much they use *morphology* to represent these relationships, and as to which relationships are represented in which way. English relies mostly on constituent structure, whereas Warlpiri relies mostly on morphology.

A simple hypothesis about the expression of the predicate-argument relation is that there are direct links between argument-taking predicates and arguments on the one hand, and some means of morphological or structural expression on the other hand. For instance, in the English sentence *Napaljarri saw Jangala*, *Napaljarri* is a Noun; it is the first element in the sentence, and it directly precedes a Verb. In English, the *see-er* argument of the argument-taking predicate *see* is expressed as the Noun directly preceding the

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2. I have chosen to use the terms *semantic role* and *semantic relationship* to avoid confusion with the concept of *thematic role* within the Government-Binding Framework, to which certain syntactic properties are attributed. *Semantic role* is equivalent to the use of *thematic role* made in Jackendoff (1976), and approximates Fillmore's (1968) "deep Case".

Verb. In the model of transformational grammar developed in Chomsky (1965), it is assumed that sentences can not only be linearly ordered but also hierarchically structured. In such a model, the Noun immediately preceding the Verb in English can be more exactly described as *the Noun-phrase immediately dominated by the Sentence*. I will refer to this position as '[NP of S]'.

But the hypothesis of direct linking encounters several problems. First, the passive sentence: *Jangala was seen by Napaljarri* describes essentially the same event as the active sentence, and yet the *see-er* is realized as a *by* prepositional phrase, not as [NP of S]. The one semantic relationship, *see-er*, can be represented in several ways.

Second, the position [NP of S] is not a unique representation of an argument with the *see-er* semantic role. It is also used to represent arguments with the *lover, kisser, admirer, grower,* and *owner* semantic roles in the following sentences:

(2) a. Lucy loves Anna.
b. Lucy delights Anna.
c. Anna delights in Lucy.
d. Lucy admires Anna.
e. Lucy kissed Anna.
f. Lucy grows tomatoes.
g. Lucy owns a garden.
h. The garden belongs to Lucy.

A simple explanation for the appearance in sentences with different argument-taking predicates of arguments with different semantic relationships as [NP of S] is to suppose that these semantic relationships form a natural class, and that [NP of S] is assigned to any member of this class. The question then arises: is it possible to decompose the meanings of these sentences in such a way that we can determine automatically which argument of any argument-taking predicate will be realized as [NP of S]? Much interesting work has been done along these lines (Gruber (1970), Jackendoff (1972, 1976), Carter (1976), Hale (1982b), Ostler (1979, 1980)), and many important generalizations have been made. However, attempts at direct linking of semantic roles to constituent structure positions or morphological markers have foundered on exceptional classes, such as verbs of emotion, or inversion verbs, like *own* and *belong*, in which the

[NP of S] of one verb appears to have the same semantic role as some non-[NP of S] argument of another verb.[3] And sometimes the meaning differences are very small; for instance, perhaps Anna is more actively taking pleasure in Lucy in (2)c than in (2)b). But, when the meaning differences become as small as that, it is hard to tell whether the difference is due to a difference in semantic roles or to the fact that an argument in [NP of S] position in a *transitive* sentence (a sentence with a two-place argument-taking predicate) is stereotypically more active or 'prominent' than an argument in some other position.

What these examples show is that it is not wholly (or perhaps not clearly) predictable from the meaning of a argument-taking predicate which argument of that argument-taking predicate will be expressed as [NP of S].

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3. See Bowers (1973), Carter (1976) and Ostler (1980) for attempts to deal with the inversion verbs. Ostler avoids the problem of one-to-one linking by matching a hierarchy of thematic roles with a hierarchy of syntactic or morphological expression.

Fillmore (1977) argues that the inversion verbs show the need for language-specific principles of Subject Selection, (approximately equivalent to determining what is [NP of S), as well as universal principles of Subject Selection. A universal principle of SUBJECT selection could be that *agents* when 'in perspective' (when salient) are underlying Subjects, (with the possible exception of deep ERGATIVE languages such as Dyirbal). Another example of a language-specific principle that Fillmore gives is the fact that Japanese and German do not allow "enabling or occasioning causes" as Subjects, and so these languages have no direct translations of sentences such as *The smell sickened me.*

Jespersen also observed the impossibility of defining subjects and objects in terms of meaning.

> *The subject cannot be defined by means of such words as active and agent, for they do not cover such cases as "He lost his father in the war" or "he was surprised" or "the garden swarms with bees" (otherwise expressed "bees swarm in the garden"). Nor can the object be defined as the person or thing most directly affected by the action, for in "John loves Ann", "John sees the moon" John is more directly affected than Ann or the moon.*

Jespersen, 1933: 502.

However, although the semantic relationship of an argument to a argument-taking predicate does not entirely determine its morphological or structural expression, nevertheless there exist interesting cross-linguistic convergences of semantic roles upon some form of expression. In English, [NP of S] can express an Agent (*I kiss*), Perceiver (*I see*), a Causer (*I grow tomatoes*), a Cause of an Experience (*delight*) an Experiencer (*I love*), an argument to which ownership or possession is attributed (*I own, I possess, I have..*). In Latin, NOMINATIVE case can express much the same kinds of relationships: (*video*, 'I see', *colo* 'I grow — transitive.', *amo* 'I love', *osculor* 'I kiss', *possideo* 'I possess', *delectat* 'it delights'. In Warlpiri, ERGATIVE case expresses Agents (*pakarni* 'hit'), Perceivers (*nyanyi* 'see') and Causers (*nyurnu-mani* 'make someone sick'). Across many languages, roughly the same class of semantic relationships is singled out for special expression, whether this be [NP of S] or NOMINATIVE case, or ERGATIVE case.[4]

Elements having this special expression generally share a cluster of properties[5] which are independent of the semantic relationship between the argument and the argument-taking predicate. The traditional term for these elements is SUBJECT. An

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4. The ERGATIVE case in Warlpiri is more restricted than either the Latin NOMINATIVE or [NP of S] in English as to what semantic roles it can represent, since it almost always appears with verbs that are two-place predicates.

5. This is not to say that all languages have to exhibit all properties: there may in fact be no one property which uniquely identifies the SUBJECT in all languages, although reflexivization, as discussed below, is a strong candidate.

example of a cross-linguistic property of SUBJECTs is found in reflexivization.[6] In almost all the sentences given in (2), the SUBJECT and OBJECT can co-refer by means of a reflexive pronoun in the OBJECT position, but not by means of a reflexive pronoun in the SUBJECT position.

(3) a. Lucy is hitting herself.

A reflexive pronoun cannot appear in the [NP of S] position of a root clause,[7] as (4) shows.

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6. Hale (to appear) speculates that, universally, a SUBJECT and OBJECT can never corefer by means of a SUBJECT reflexive anaphor rather than an OBJECT reflexive anaphor, if this reflexive appears in the AUXILIARY or verbal morphology. As David Johnson (1977) observes, a few languages allow independent reflexive anaphors to appear in SUBJECT position. The most convincing example is from Samoan (Chapin (1970)):

i. *Sa sogi loane e ia lava.*
Tns cut John AGENT himself
Himself cut John.

ii. *Sa sogi e loane ia lava.*
Tns cut AGENT John himself
John cut himself.

e is an AGENT marker and can appear on either the reflexive *ia lava* or the nominal it is coreferent with. If AGENT-marked nominals are SUBJECTS, (rather than, say, passive instrumentals), then i. is an instance of a reflexive in SUBJECT position. Interestingly, reflexivization in Samoan is constrained by precedence. The reflexive cannot precede the nominal it refers to - both the sentences would be unacceptable if *ia lava* preceded *loane*.

7. This must be restricted to unembedded finite clauses, because some languages allow reflexives in the subject position of embedded clauses. See Mohanan, (1981b), Maling (1982). In the Government-Binding theory, a reflexive object of a Raising-to-Object verb such as *believe* is also in SUBJECT position. (Chomsky, 1981).

John believes [*himself to have been elected President*].

(4) *Herself is hitting Lucy.

This constraint on reflexivization is *independent* of the semantic role of the SUBJECT. Suppose that reflexivization does depend on the semantic role, that arguments with the semantic role of AGENT are unacceptable as reflexives. Then, in passive sentences, reflexive SUBJECTS should be acceptable, because the SUBJECTs of passive sentences are rarely if ever AGENTS. But they are not.

(5) *Himself was hit by John.

Likewise, two arguments with very similar semantic relationships to their argument-taking predicates, can have different possibilities for reflexivization.[8] For instance, in (6), only the *person delighted* can be replaced by a reflexive pronoun; the *delighter-in* cannot be so replaced. Similarly, in (7)a the object of possession can be reflexivized, while in (7)b it cannot.

(6) a. Lucy delighted herself by winning.
b. *Herself delights in Lucy.

(7) a. Lucy owns herself and her car, nothing else.
b. *Herself belongs to Lucy, and to no-one else.

Other properties which tend to be tied to the SUBJECT function include the possibility for a SUBJECT argument of one argument-taking predicate to be unrealized phonologically when it is referentially dependent on an argument of another argument-taking predicate. I will use the conventional term *control* (used in Postal (1970)) to refer to this phenomenon. The unrealized argument is the *controlled* argument, and the argument to which it is co-referent, is its *controller*.

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8. There are some practical constraints on reflexivization, for instance the sentences ?? *Lucy grows herself*, and ?? *The garden belongs to itself* are only acceptable in situations where people have the ability to cause themselves to grow, and gardens have property rights. It is, however, important to recognize that reflexivization possibilities cannot be defined purely in terms of lexical semantics, and must make reference to SUBJECTs.

In (8), the SUBJECT of the dependent participle clause *loving herself* is unexpressed. But it is dependent referentially on the SUBJECT of the main, or *matrix* clause. *Lucy* is both the *lover* and the *talker*, although the Noun-phrase *Lucy* is structurally only the [NP of S] of the clause containing *talk*. The SUBJECT of the dependent clause is *controlled* by the SUBJECT of the matrix clause.

(8) *Loving herself*, Lucy talked loudly and often.

The following examples show that the controlled argument of the dependent participle not only can be, but must be the SUBJECT, (that is, the argument which, in a finite clause, would be expressed as [NP of S]). (9) a and (10)a are well-formed because the *delighter-in* ((9) a), and the *delighter* ((10)a.), are expressed as [NP of S] in the corresponding finite clauses. (11)a is ill-formed because the *one delighted* is not expressed as [NP of S] in the corresponding finite clause.

(9) a. *Delighting in candy-bars*, John soon grew fat.
b. John delights in candy-bars.

(10) a. *Delighting her friends with tales of Peru*, Lucy soon gained renown.
b. Lucy delights her friends with tales of Peru.

(11) a. **Candy-bars delighting*, John soon grew fat. (= candy-bars delighting him,..)
b. Candy-bars delight John.

If the semantic roles of arguments determine directly which argument of a dependent participle may be controlled, it is hard to explain the acceptability of (9) a, and the unacceptability of (11)a, since the missing arguments have similar semantic roles.

The same kinds of properties appear clustered around some expression of an argument in other languages. For example, the argument morphologically marked with NOMINATIVE case in Latin has much the same properties of control and reflexivization as [NP of S] does in English. Just as in English a reflexive pronoun cannot appear in the [NP of S] position, so in Latin it is not possible for a NOMINATIVE reflexive pronoun to act as an antecedent for the OBJECT. Latin has, in fact, no morphological realization of the reflexive pronoun with NOMINATIVE case.

Similar facts hold in Warlpiri:

(12) a. Napaljarri-rli ka-*nyanu* paka-rni.
Napaljarri-ERG PRES-refl hit-NPST
Napaljarri is hitting herself.

b. *Napaljarri ka-*nyanu* pakarni.
Napaljarri-ABS PRES-refl hit-NPST
Herself is hitting Napaljarri.

In (12)a. the overt nominal with ERGATIVE case, *Napaljarri-rli* is the SUBJECT. It corresponds semantically to *Lucy*, the nominal in [NP of S] position, in *Lucy is hitting herself*. The reflexive is represented by a clitic *nyanu*. In (12)b *Napaljarri* has ABSOLUTIVE case, and cannot be the SUBJECT; the example corresponds to *Herself is hitting Lucy*, and is ungrammatical for the same reason — the clitic *nyanu* cannot represent the SUBJECT. (See Hale, to appear).

Warlpiri SUBJECTs do not only share this non-reflexivizability with English SUBJECTS. They also share control properties. An example of a controlled SUBJECT in a *kungarnti* ('in preparation for') clause follows. The clause is *paarr-pardi-nja-kungarnti* 'before taking off'. Its SUBJECT is not overtly expressed, but is understood to be the SUBJECT of the matrix clause: *parrulka* 'bustards'.

(13) *Parrulka* ka-lu marralyalya-pardi-mi
Bustard-ABS PRES-3pl spread-rise-NPST
paarr-pardi-nja-kungarnti.
fly off-INF-PREP
Bustards spread their wings before taking off. [marralyalya-pardimi]

In conclusion, the clustering of these properties does not depend on whether the argument is expressed by *constituent structure*, as [NP of S] in English, or by *morphological-marking*, as NOMINATIVE case, in Latin. Therefore, the property of being an antecedent for reflexivization, and the property of being controlled, etc. cannot be properties of the configurational *position* [NP of S], or of morphological *case* (NOMINATIVE). Nor do these properties depend on particular semantic relationships of arguments to argument-taking predicates. Although there is a strong tendency for

arguments bearing the same semantic role to be expressed the same way in a given language, for any particular argument-taking predicate it is not wholly determined which argument will be realized in which way. Neither constituent structure, nor morphological marking, nor meaning serve to define completely which special expression of an argument will have which clustering of properties.

In several linguistic theories it is argued that these clusterings of properties should be represented by *intermediate entities*,[9] which are not completely definable in terms of semantic role, constituent structure position or morphological marking. Such theories include: Government-Binding (GB), Lexical-Functional Grammar (LFG) and Relational Grammar (RG). Proponents of intermediate entities assume that there is no direct relationship between predicate-argument relationships and word-order or morphological expression. Instead, there is an intermediate level of representation onto which arguments are mapped, and which in turn undergo morphological or word-order expression.

Current theories differ as to exactly what are the necessary entities on this intermediate level, but they all have the equivalents of SUBJECT and OBJECT and Complements which are neither SUBJECT nor OBJECT. Following Chomsky (1965), I will

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9. See Marantz (1981) for a clear description of the approaches to the relation between semantic roles and surface expression in Government-Binding (GB), Lexical-Functional Grammar (LFG), and Relational Grammar (RG). Bell (1981) provides a useful comparison of LFG and RG. Cole and Sadock (eds) (1977), and Zaenen (ed.) (1982) contain a number of articles on approaches to grammatical relations in different theories.

refer to these intermediate entities as *grammatical functions* (GFs).[10] In some theories, the step is taken of assuming that these intermediate entities need not be expressed in the same way in a given language. I have said that languages may use configurational means or morphological means to express grammatical functions. This does not preclude a language from using both; Finnish and Russian may be examples of languages in which both phrase structure position and case-marking determine grammatical functions. In

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10. The claim that grammatical functions (at least SUBJECT, OBJECT and INDIRECT OBJECT) are primitive and cannot be defined in terms of observable morphological or configurational expression is essential to Relational Grammar. See Johnson (1977) and Perlmutter (1980).

The existence of these entities is sometimes blurred in the Government-Binding theory (GB), because of the labelling of these entities with 'configuration' names, such as [NP of S] and [NP of VP]. If it were always possible to distinguish SUBJECTs and OBJECTs configurationally, (that is by surface precedence and dominance relations), then there would be no need for an autonomous level of grammatical relations. But it is not. There are languages, such as Warlpiri, without surface configurational expression of the SUBJECT and OBJECT functions. So, GB introduces the notion of a *lexical* VP (Chomsky (1981)), or a *virtual* VP (Zubizarreta (1982)), in terms of which the SUBJECT and OBJECT can be defined. But, to define SUBJECT and OBJECT in terms of this abstract entity is to make SUBJECTs and OBJECTs abstract entities.

Various properties of SUBJECT and OBJECT which cannot be made to follow from configuration, even when lexical VPs are admitted, are attributed to theories of Abstract Case assignment and Thematic role assignment. But these theories themselves are not directly relatable to surface structure properties. Abstract case is present in all languages, whether or not they have morphological case. Thematic role assignment is not equivalent to the notion 'argument of a argument-taking predicate', first because the Subject, which is certainly an argument of the matrix argument-taking predicate, does not receive its thematic role directly from that argument-taking predicate, and second because, at least in some versions of GB (Marantz, (1981), Schein (1982)), an argument-taking predicate can usually only assign one thematic role, although it can have several arguments. For example, the English verb *give* in the sentence *I gave John a book* has three arguments, *giver, thing given, recipient*. But this verb assigns only one thematic role, that of the *recipient*. The *giver* thematic role is assigned by the VP, and the *thing given* is assigned in some other way, perhaps by the structural position, or by a null preposition.

If the theories of thematic role assignment and abstract case can be shown to have independent uses, then defining properties of grammatical functions in terms of these theories has explanatory force.

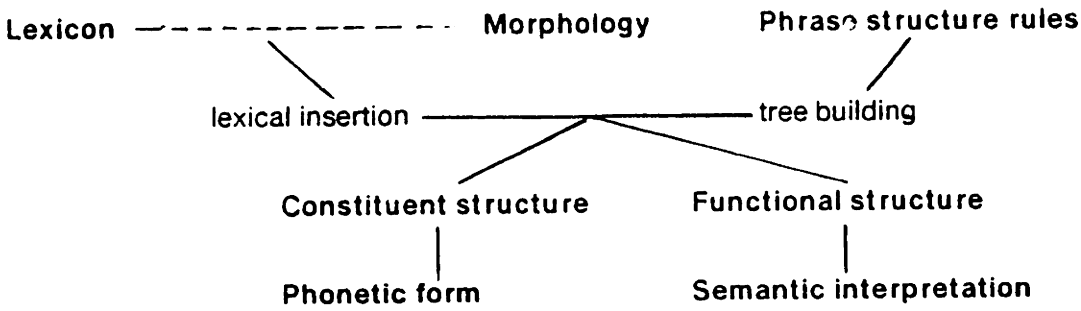
Warlpiri, for instance, a SUBJECT may have ABSOLUTIVE or ERGATIVE case, and an OBJECT may have DATIVE or ABSOLUTIVE case. In Icelandic, SUBJECTs and OBJECTs may have NOMINATIVE, ACCUSATIVE, GENITIVE or DATIVE case. Moreover, a language is not precluded from using configurational structure and case-marking for other purposes. For instance, semantic concepts such as Definiteness or Specificity may be determined by phrase structure position: in Chinese (Huang, 1982) the pre-verbal [NP of S] position requires a specific NP to fill it. An NP in this position has the GF SUBJECT, and is required to be specific. Configurational position may also serve discourse purposes, such as marking Theme, or Rheme. Case-marking is often closely linked with the semantic role; for instance, in Icelandic, OBJECTs with particular thematic roles may have DATIVE case (see Andrews 1982d, and Levin 1981). Case-marking is also used to indicate quantification, and even aspect, as for example the Russian GENITIVE (Neidle, 1982, and Pesetsky, 1982), and the Finnish PARTITIVE (Carlson, 1978).

1.3 **The model**

Because LFG not only provides an autonomous theory of grammatical functions, but also requires that certain information be represented in the lexicon rather than in the constituent-structure, it is possible to represent the similarities and differences between morphological and constituent-structure expressions of grammatical functions with relative ease.

The model of grammar that I assume is illustrated below.

Model of the grammar



The lexicon contains dictionary entries for all words and affixes, including information about the case of selected functions. In the morphology, words are created by affixation, compounding, and template forming (discussed in Chapter 2). (The precise nature of the relationship between the lexicon and the morphological component, whether they are identical, or whether one feeds the other, is a matter for further research). [11] Lexical items, complete with information from both the lexicon and the morphology are inserted into the terminal nodes of *constituent structure trees* created by the phrase structure rules. The lexicon, morphology and phrase structure rules all provide information about grammatical functions, and grammatical features (such as CASE). This information is represented as equations which are attached to nodes. These equations are then solved in the process of building a *functional structure*, which gathers together information about functions and features from all parts of the annotated constituent structure tree. The *functional structure* acts as input for *semantic interpretation*.

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11. For instance, Marantz (1981) assumes that most alternations which have been called lexical rules simply consist of the morphological adding of affixes with particular features. Both he and Kiparsky (to appear) assume that morphological processes have access to the lexicon, in that the adding of an affix, or the interpretation of an affix may be blocked by the presence of another word with the same meaning. Baker (1982) assumes that lexical rules operate in parallel with the concatenation of morphemes.

The remainder of this chapter treats the type of information used in annotating the constituent structure trees, and the constraints placed on its representation. In Chapter 2 I will show how to construct *constituent structure trees*, and *functional structures*.

1.3.1 An LFG account of grammatical functions

Lexical-Functional Grammar assumes the existence of a universal set of *grammatical functions*, or GFs, which are entities on the intermediate level discussed in 1.2. The semantic relationship of an argument to a argument-taking predicate can be represented as a relation between a SUBJECT (SUBJ), OBJECT(OBJ), or OBJECT 2 (OBJ2) and a lexical realization of that argument-taking predicate.

Illustrations follow from English and Warlpiri:

I am running.	I: SUBJECT
Ngaju ka-rna parnka-mi. I-ABS PRES-1sg run-NPST. I am running.	I-ABS: SUBJECT
Jangala saw Napaljarri.	Napaljarri: OBJECT Jangala: SUBJECT
Jangala-rlu nya-ngu Napaljarri. Jangala-ERG see-PAST Napaljarri-ABS Jangala saw Napaljarri.	Napaljarri-ABS: OBJECT Jangala-ERG: SUBJECT
Nangala gave the book to Jangala.	book: OBJECT Nangala: SUBJECT to Jangala: OBL_{goal}
Nangala gave Jangala the book.	book: OBJECT 2 Nangala: SUBJECT Jangala: OBJECT
Nangala-rlu + rla yu-ngu pipa Jangala-ku. Nangala-ERG + DAT give-PAST book-ABS Jangala-DAT. Nangala gave the book to Jangala.	pipa-ABS: OBJECT 2 Nangala-ERG: SUBJECT Jangala-DAT: OBJECT

The extension of the concept SUBJECT is relatively easy to determine — control and

reflexive phenomena usually pick out SUBJECTs cross-linguistically, as I mentioned earlier. Language-particular tests include Passive (the fact that the original SUBJECT is demoted), and the ability to be deleted under identity in coordinate structures (*I came and got the book, *I read the book and I bought.*).

It is quite easy to distinguish SUBJECTs from non-SUBJECTs. It is not always so easy to distinguish OBJECTs from prepositional-type arguments. On the assumption that only OBJECTs can undergo promotion to SUBJECTs via Passive, Passive provides a test for OBJECT. (A few languages appear to allow prepositional objects to passivize, but, in the cases that I am aware of, there is evidence for a rule reanalysing the Verb and the preposition as a complex verb which takes the object of the preposition as its object. See Bresnan (1980b). Languages which allow either non-SUBJECT argument of a ditransitive to passivize present a problem still). In English, another test for OBJECTs is provided by the behaviour of secondary argument-taking predicates. OBJECTs can control various secondary argument-taking predicates, such as resultative attributes, whereas prepositional phrases (except a few that have undergone reanalysis) cannot. (See Williams, 1980). (14) a. shows a secondary argument-taking predicate (more exactly, a resultative attribute) *red* modifying the OBJECT *the canvas*. (14) b. shows a prepositional phrase with the same verb *paint*. (14) c. shows this prepositional phrase failing to control a resultative attribute.

(14) a. I painted the canvas red.
b. He's painting on the canvas.
c. *He's painting on the canvas red.

However, it is not so easy to distinguish OBJECTs from OBJECT 2s. Arguments for

the existence of OBJECT 2s have mainly come from the behaviour of ditransitive verbs.[12] Consider a ditransitive verb such as *give*.

(15)	Lucy gave	John	a gorilla.	
	SUBJECT	OBJECT	OBJECT 2	*LFG*
	Subject	indirect object	direct object	*traditional*
(16)	Lucy gave	a gorilla	to John.	
	SUBJECT	OBJECT	$OBLIQUE_{goal}$	*LFG*
	Subject	direct object	prepositional phrase	*traditional*

Traditionally, *John* in (15) is called the 'Indirect object' and *a gorilla* the 'direct object'. (Jespersen, for instance, makes this distinction). *A gorilla* is also considered the 'direct object' in (16). However, in the LFG account of English given in Bresnan (1980b), these two sentences differ as to what is the OBJECT. In (15) *John* is the OBJECT, while in (16) *a gorilla* is the OBJECT. In (15) *a gorilla* has the GF OBJECT 2. In (16) *to John* has an OBLIQUE function.

The discrepancy between the accounts of objects given in LFG and in traditional grammars stems from the fact that in LFG grammatical functions are *syntactic concepts* which, although they represent semantic relationships, do not necessarily do so consistently. However, the concept of Direct and Indirect Object in traditional grammar is not purely syntactic; it is also *semantic*. The Indirect Object of traditional grammar

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12. Carol Neidle informs me that the *à* OBJECT for transitive verbs such as *téléphoner* in French is a candidate for OBJECT 2. It patterns with the indirect *à* OBJECT of ditransitives in that both can be represented by the oblique clitics such as *lui* and, unlike direct objects, neither can undergo passivization. Unlike normal OBJECTs, it does not trigger agreement of the past participle:

i. *Il lui a téléphoné.*
He telephoned her. *no agreement*

ii. *Il l'a vue.*
He saw her. *agreement*

Neidle suggests that this is because in French, unlike English, the indirect *à* OBJECTs of ditransitives, and the *à* OBJECTs in transitive verbs are OBJECT 2s, not OBJECTS. See Grimshaw (1980) for an alternative account in which the *à* OBJECTS are not treated as OBJECT 2s, but as OBLIQUE arguments.

corresponds to a semantic relationship such as *Goal*.

The first reason for calling the Direct and Indirect objects OBJECT 2 and OBJECT respectively is theory-internal. An important constraint on the well-formedness of functional structures, the *Functional Uniqueness* principle, states that every grammatical function has a unique value. This prevents there from being two OBJECTS in a sentence, and so the direct and indirect objects must have different functions.

The second reason for assigning the direct and indirect objects of ditransitive different GFs is theory-neutral — it is that, in English, and a number of other languages, the direct and indirect objects in ditransitives have different properties. Indirect

objects[13] appear to pattern like OBJECTS with respect to Passive, while direct objects cannot undergo Passive if an indirect object is present. It is hypothesised in LFG that, in English, the indirect objects are OBJECTs and so undergo the lexical rule of Passive. The direct objects are OBJECT 2s, and, in English at least, Passive only applies to

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13. Wordick (1982) shows that in Yinjibarndi, an Australian Aboriginal language, both the indirect and direct objects of ditransitives are marked with OBJECTIVE Case (equivalent to ACCUSATIVE).

Ngaarta yungku-nha ngayu murla-yi.
man-NOM give-PAST me-OBJ meat-OBJ
The man gave me the meat.

According to Wordick, Yinjibarndi has free word-order, so that there is apparently no structural way of telling the two OBJECTIVE-case-marked nominals apart. But only the indirect object can passivize.

Ngayi yungku-nguli-nha murla-yi ngaarta-lu.
I-NOM give-PASSIVE-PAST meat-OBJ man-INST
I was given the meat by the man.

**Murla yungku-nguli-nha ngayu ngaarta-lu.*
Meat-NOM give-PASSIVE-PAST me-OBJ man-INST
*The meat was given me by the man.

So, there is no way of picking out which nominal will passivize in terms of overt morphological or structural information.

Of course, one could say that Passive is defined with respect to semantic relations - in a transitive sentence, Passive operates on arguments with various thematic roles, including *themes* and *goals*, while a ditransitive it operates on the *goal*, not on the *theme*; that is, there is a disjunction in the description of the Passive rule. A Passive rule defined in terms of semantic roles will be complicated, and may need unmotivated assumptions about what semantic role a given argument has.

As Marantz (1981) points out, it seems preferable to define Passive in Yinjibarndi as a rule operating on grammatical functions. In LFG, we can propose that the indirect objects are OBJECTs, the direct objects are OBJECT 2s, and that Passive in Yinjibarndi is a lexical rule which operates on OBJECTs of sentences, just as in English. See Simpson (1980) and Dench (1981) for related facts in the neighbouring languages, Ngarluma and Panyjima.

OBJECTs.[14]

(17)	I gave Lucy a book.	Lucy a book	OBJECT OBJECT 2
(18)	Lucy was given a book.	Passive of	OBJECT
(19)	??A book was given Lucy.	Passive of	OBJECT 2

The PASSIVE rule is a GF-changing rule. It operates on the lexical entries of verbs to change the assignment of GFs to arguments. Consider the effect of PASSIVE on the verb *give*, where the *thing given* is an OBJECT. The lexical entry is as follows:

(20)	**give**	SUBJECT *giver*	OBJECT *thing given*	$OBLIQUE_{goal}$ *person given something*

The PASSIVE rule consists of two parts:

a. SUBJECT → Ø /$OBLIQUE_{agent}$
(i.e. the argument linked to the SUBJECT is either linked to the *null grammatical function* or to an OBLIQUE *agent*-phrase.)

b. OBJECT → SUBJECT
(i.e. the argument originally linked to the OBJECT is relinked to the SUBJECT).

The passive lexical entry has the following form:

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14. However, Dowty (1982) notes that Passives of OBJECT 2s are possible in some dialects. For most speakers the following semi-idiomatic expressions are acceptable.
i. *Our sins were forgiven us.*
ii *The ordeal was spared us.*
Some dialects allow sentences such as the following.
iii. *A book was given John.*
(The latter improves considerably with a pronoun *him* instead of the nominal *John* for many speakers.) Dowty postulates a secondary rule of passivization to account for these cases. In LFG, Passive of OBJECT 2 would also have to be allowed as a marked option.

(21)	**given**	Ø OBL_{Agent}	SUBJECT	$OBLIQUE_{goal}$
		giver	*thing given*	*person given something*

Now, the other lexical entry for *give* has an OBJECT and an OBJECT 2. I assume that it is related to the lexical entry in (20) by a grammatical function-changing rule that converts an OBJECT into an OBJECT 2, and an $OBLIQUE_{goal}$ into an OBJECT.[15] The two lexical entries resulting from application or non-application of this rule are given below.

(22)	**$give_1$**	SUBJECT *giver*	OBJECT *thing given*	$OBLIQUE_{goal}$ *recipient*
	$give_2$	SUBJECT *giver*	OBJECT 2 *thing given*	OBJECT *recipient*

I will conclude this discussion of ditransitives with a summary of the assignments of grammatical functions to ditransitive verbs in English, French, Yinjibarndi, and Warlpiri. (I will argue for the Warlpiri assignment in 2.3.1.3.)

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15. An alternative approach is adopted in Marantz (1981). He claims that the same argument structure: *giver, thing given, recipient* is simply linked with different grammatical functions: *thing given* can be linked with OBJECT or OBJECT 2, and *recipient* can be linked with OBJECT or $OBLIQUE_{goal}$. Linking both arguments to OBJECT is a highly marked option. Languages allowing passives of either non-SUBJECT argument in a ditransitive adopt this option.

English

thing given	OBJECT / OBJECT 2	*recipient*	OBL_{goal} / OBJECT
	NP NP		to + NP NP

French

thing given	OBJECT	*recipient*	OBJECT 2
	NP		á + NP

Yinjibarndi

thing given	OBJECT 2	*recipient*	OBJECT
	NP + OBJECTIVE		NP + OBJECTIVE

Warlpiri

thing given	OBJECT 2	*recipient*	OBJECT
	NP + ABSOLUTIVE		NP + DATIVE

So, the same semantic roles are assigned different combinations of grammatical functions in the three languages. The assignment of OBJECT and OBJECT 2 in English and Yinjibarndi basically depends on the behaviour of Passive in those languages. The formulation of the Passive rule in Bresnan (1980b) assumes that Passive in the unmarked case applies to OBJECTs, rather than, say, OBJECT 2s. It is clear that languages do differ as to how they treat the non-Subject arguments of ditransitives, and, at the present state of knowledge, it seems simplest to describe this difference in terms of a difference in grammatical functions.

The SUBJECT and OBJECT functions can be linked with a wide variety of semantic roles. Bresnan (1982) classifies these as *semantically unrestricted* grammatical functions. Further evidence for their unrestricted nature is the fact that semantically empty (or partly

empty) elements can appear in SUBJECT or OBJECT[16] position. I will call these empty elements *pleonastic elements*.[17]

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16. The existence of pleonastic elements in OBJECT position is an unresolved problem in the GB framework, because the Projection Principle rules them out. The Projection Principle states that:

> [1] If β is an immediate constituent of γ in a c-command configuration of the form $[_{\gamma} \ldots\alpha\ldots\beta\ldots]$ or $[_{\gamma}\ldots\beta\ldots\alpha\ldots]$ at Level$_i$, and $\gamma = \overline{\alpha}$, then α θ-marks β in γ.
>
> [2] If α selects β in γ as a lexical property, then α selects β in γ at Level$_i$.
>
> [3] If α selects β in γ at Level$_i$, then α selects β in γ at Level$_j$. [Chomsky, 1981]

That is, if an element such as a verb directly c-commands another element, it must assign a thematic role to that element. Furthermore, if a verb assigns a thematic role to a nominal at one level, it must do so at every level. Pleonastic elements in OBJECT position are ruled out because the position immediately following the V in a VP is an immediate constituent of the VP, and therefore must receive a θ role from the V. A semantically empty element does not receive a thematic role. It is claimed that elements in SUBJECT position do not have to receive thematic roles, and so pleonastic elements can appear there. Now, if a V has an OBJECT position at one level, it should have an OBJECT at all levels. But, in collocations such as *Cool it!* and *hate it that...*, the verbs have the same kind of unclear semantic relationship with the *it*, as *seems* does with *it* in *It seems that John is happy*. That is, these *it*s appearing in OBJECT position seem to be place-holders in much the same way that the *it* of extraposition is a place-holder. They do not receive thematic roles from the verb in the Government-Binding theory. But this is a violation of Part 1. of the Projection Principle.

17. See Visser (Vol.1: 449) for a short discussion of *it* in such collocations as *take it easy, fight it out, how do you like it here?*, where he argues that the pronoun *it* is "used indefinitely, without referring to anything previously mentioned."

Whether all, or any, of the elements that have been characterized as pleonastic actually are completely semantically empty is debateable. See Footnote 26 for a discussion of "weather" *it*. The *it* of SUBJECT and OBJECT extraposition, *It was known that John liked Lucy*, *I regret it that John likes Lucy*, intuitively seems to act as a referential pronoun, referring to the clause *that John liked Lucy*. Even the classic example of expletive *it* in SUBJECT-raising, *It seems that John is sick*, can be thought of as a statement about the present state of affairs: the present state of affairs is such that one is led to believe that John is sick.

(23) *It* was upsetting to watch the possum die. SUBJECT: extraposed clause

(24) a. I hate *it* that he shoots possums. OBJECT: extraposed clause
b. I regret *it* that he wears a possum fur hat.

(25) a. The Queen of Sheba lorded *it* over Solomon. OBJECT:idioms
I'm going to brown-bag *it* today.
He beat *it* out of there before the cops came. (K. Hale, p.c.)

(26) Cool *it*/Blast *it*!/Damn *it*!/Bugger *it*! OBJECT: expletives

The contrast between the semantic role of the normal OBJECT of *beat* and the *it* in expletives provides the humour in the following quotation from the series *The hitch-hiker's guide to the galaxy*:

(27) 'I'm the guy that's telling you: 'Beat it! Before it gets beaten for you.'"

The linking of OBJECT 2 is less clear. The fact that in French it can, arguably, be linked with the indirect object in a ditransitive, while in English and Yinjibarndi it can be linked to the direct object of a ditransitive, suggests that it, too, is semantically unrestricted. But there is no evidence from pleonastic elements for the OBJECT 2 being semantically unrestricted. For example, the verb *give* can have a pleonastic OBJECT and an $OBLIQUE_{goal}$, as in (28), but its counterpart with a pleonastic OBJECT 2 and an OBJECT is unacceptable, as in (29).

(28) You really gave it to him straight.

(29) *You really gave him it straight.

However, (29) may be ill-formed for an independent reason, since there are restrictions on the appearance of pronominals in OBJECT 2 position in English anyway:[18]

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18. In British English, where constructions such as *Give it me* are acceptable, and the *it* is presumably the OBJECT, pleonastic elements can also appear in OBJECT position:

But have you ever noticed a rummy thing about life? I mean the way something always comes along to give it you in the neck at the very moment.... P.G Wodehouse The Inimitable Jeeves. p.27

(30) ??I gave him it to read.
??I gave the man it to read.

Not all semantic roles are paired with SUBJECT, OBJECT and OBJECT 2 grammatical functions. Some are represented by named OBLIQUE functions, which correspond to more narrowly defined *classes* of semantic roles. For instance, the LOCATIVE 'on John' in the sentence *Lucy dotes on John* can be represented as an OBLIQUE LOCATIVE: OBL_{loc}. Similarly, 'to Lucy' in (29) is an OBLIQUE GOAL: OBL_{go}.[19] The OBLIQUEs are semantically restricted, by virtue of the fact that they represent particular semantic roles.[20]

I will now turn to the requirements which argument-taking predicates place on the grammatical functions that represent their arguments. First, I will look at three general constraints on the assignment of functions to arguments, and then I will look at particular requirements.

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19. There is no one-to-one mapping between an oblique grammatical function and a single semantic argument type, because a function such as $OBL_{direction}$ is a syntactic entity which can be mapped onto a number of similar DIRECTION-type semantic relations. For instance, there seems no need to distinguish syntactically in English between direction upwards, downwards or sideways.

20. This leads us to expect that OBLIQUES should not appear with pleonastic elements, and in general they do not. However, there are some counter examples for which I have no explanation:

i. *Jump/hop to it!*
Come off it!
Get on with it!

Perhaps the *it* represents a figurative direction, rather than a pleonastic element, in which case i. is not a counterexample. But if it is not, there is no principled way of separating the *it* in these examples from the *it* in *lord it over*, unless we assume that Verb-Preposition Incorporation (see 1.3.2) incorporates the preposition into the verb, so that the *it* is really the OBJECT of the Verb. But there is no independent evidence for the Verb-Preposition Incorporation rule operating in i. If the *it* could passivize, then this would suggest that *it* really is the OBJECT of an incorporated verb *jump to*, on the assumption that only OBJECTs passivize. However, it cannot passivize: **It was hopped to.*

1.3.1.1 Constraints

The first important constraint on the expression of the predicate-argument relation is the *Principle of selection for function*. Most argument-taking predicates require that some argument be linked to an NP or S in the SUBJECT function. Many also require OBJECTs (linked to NP, S or PP). A much smaller number require OBJECT 2s or OBLIQUE arguments (linked to NP or PP). If a lexically-realized argument-taking predicate *requires* some element with particular function for its meaning to be complete, I will call that *selection*, or *subcategorization*. Thus the verb *discuss* obligatorily selects a NP SUBJECT and an NP OBJECT:

(31) We discussed the case.

(32) a. ??We discussed for three hours.
b. ??We discussed and came to a conclusion.

The question is, do argument-taking predicates select a particular category, or do they select a particular function, or do they select both? In both GB and LFG, it is assumed that selecting both is redundant, because, in English at least, phrase structure rules provide overlapping categorial and functional information. Grimshaw (1982) provides arguments in favour of simplifying the grammar by subcategorization for function rather than category.[21]

Principle 1: Selection for function

Argument-taking predicates are subcategorized for grammatical functions, not for categories.

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21. Stowell (1981) provides a different solution to the redundancy problem within the GB framework, which hinges on a principle of case-assignment by *adjacency*, essentially an elegant rule for expressing the relation between phrase structure position and grammatical function, which captures the fact that in SVO and SOV languages, verbs, prepositions, adjectives and nominals are, for the most part, immediately adjacent to their complements. He does not discuss VSO languages, which raise difficulties for the generality of his proposal.

The lexical entry for a verb such as *see* in English states that the *see-er* argument is linked to a SUBJECT, not to an element with the category N. This principle is crucial for an account of Warlpiri in terms of the LFG framework, because Warlpiri allows selected grammatical functions to be represented by either an overt NP, or a null pronominal. If verbs were subcategorized for categories, null pronominals would be impossible to explain without recourse to empty NPs, which are forbidden by other principles of LFG. *Selection for function* is a strong principle which requires that certain cases of apparent subcategorization for category rather than function be explained by independent principles. I will discuss some such cases in 1.3.1.2.1.

A second constraint on the mapping of 'arguments' (where 'arguments' includes semantically complex arguments) onto grammatical functions is the *Functional uniqueness principle* (see Kaplan and Bresnan, 1980).

Principle 2: Functional Uniqueness

Every grammatical function must have a unique value.

(This condition will be subsumed in 2.2.6.1 under a general *consistency* convention.)

What this means, is that no sentence consisting of a single lexically-realized argument-taking predicate can have more than one SUBJECT, more than one OBJECT

etc.[22] A sentence can have any number of OBLIQUES, so long as they all represent different allowable Obliques in the language concerned: OBL_{LOC}, OBL_{GOAL} etc.[23]

A third constraint on the expression of the relations between argument-taking predicates and their arguments is the *Function-argument bi-uniqueness principle*. (See Bresnan 1980a for a more formal definition).[24]

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22. The claim, made in several current theories of syntax, for the uniqueness of grammatical functions, can be traced to several sources, in particular, Chomsky (1965, Ch. 2, Footnote 7), who tentatively suggested that [NP of S] and [NP of VP] are unique, and Fillmore (1968), who proposes that deep Cases are unique: a sentence can have no more than one Instrumental, for instance. In Relational Grammar, this uniqueness is formalized as the Stratal Uniqueness Law. The suggestion in Marantz (1981) and Schein (1982b) that argument-taking predicates assign at most one thematic role has much the same effect within GB as the LFG and RG principles. All three principles either rule out, or treat as highly marked, the occurrence of two realized OBJECTs at a given level.

Gary and Keenan (1977) use data from Kinyarwanda to argue against the Stratal Uniqueness Law. It is true that, from Kimenyi's (1980) detailed study of Kinyarwanda, it is very hard to find syntactic evidence to distinguish between the OBJECTs of a ditransitive — processes such as Passive, Reflexivization, Causativization and Agreement do not distinguish between them. To assign both arguments the GF OBJECT violates *Functional Uniqueness*. Languages such as Kinyarwanda are rare. See Dryer (forthcoming), Zaenen (1981) and Marantz (1981) for a discussion of these problems within RG, LFG, and a version of GB, respectively.

23. However, sequences of OBLIQUES in which each further specifies the next are allowable:

I sent it to Paris to John.

I put the guinea-pigs on the treadmill in the cage on the table.

24. *Bi-uniqueness* does much the same work as the GB θ Criterion (which says that every argument has a θ role and every θ role is assigned to an argument).

Bi-uniqueness refers specifically to arguments within the lexical entry of a verb, and to grammatical functions, not to semantic roles. An argument position can be associated with several semantic roles, as Jackendoff (1972: 32) argues. Therefore a grammatical function such as SUBJECT can be associated with several semantic roles. But an argument position can only be associated with one grammatical function at a time, although, as Passive shows, the one argument position may be associated with different grammatical functions in different lexical entries of the same verb.

Principle 3: Bi-uniqueness

Each argument must be assigned a unique grammatical function, and no grammatical function can be assigned to more than one argument.

The insight represented by this principle is straightforward: if a verb has two arguments, those arguments must be represented by different grammatical functions. Consider the dyadic verb *see*: the *see-er* argument cannot be represented by both the SUBJECT and the OBJECT of a sentence. Similarly, a SUBJECT cannot express both the *see-er* and the *thing seen* semantic roles (unless a lexical rule of reflexivization has taken place, as Grimshaw (1980) shows).[25]

A lexical item will have a different lexical entry for each different sense, and for each different subcategorization frame. For instance the Warlpiri nominal *pakarli* has two lexical entries, one meaning 'paper-bark tree', and one meaning 'bucket-shaped ceremonial head-dress'. Similarly, the Warlpiri verb *nyanyi* has two lexical entries, one in which it selects an ERGATIVE SUBJECT and an ABSOLUTIVE OBJECT, and means 'see, look at', and another in which it selects an ERGATIVE SUBJECT and a DATIVE OBJECT, and means 'look for'.

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25. *Bi-uniqueness* does not preclude grammatical functions from being expressed by semantically empty elements. Nor does it force predicate arguments to be realized. Predicate arguments can fail to be lexically realized by virtue of being linked to the null grammatical function Ø. This function is found in Passive – the old SUBJECT can be represented either by a *by*-OBJECT or by the null grammatical function Ø. Grammatical functions can be expressed by empty elements through FORM equations. These state that the FORM of the SUBJECT or OBJECT is *it, there* etc. For instance the verb *lord it* (*over X*) has the lexical entry:

lord	<(SUBJ)	(OBLIQUE$_{over}$)>OBJ
	Agent	Patient
	(↑OBJ FORM) = it	

This lexical entry states that *lord* is semantically a dyadic predicate; the Agent is linked to the SUBJECT, and the Patient to an OBLIQUE argument. However, *lord* has a semantically empty element acting as its OBJECT, which is realized phonetically as *it*.

Almost all argument-taking predicates require that some argument of the argument-taking predicate they represent be mapped onto the SUBJECT function.[26] It is sometimes claimed that every argument-taking predicate must have a argument linked to the SUBJECT position. Nothing within the LFG framework requires this, and the evidence from weather verbs and impersonal constructions in other languages leads me to think that it is not a desirable constraint. A given language may require an element present in SUBJECT position, but that will be a language particular requirement.

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26. In English, it appears as if every argument-taking predicate requires a SUBJECT, because every English sentence must have some element in SUBJECT position. Sometimes this element can be a sequence of prepositional phrases:

From London to Tonbridge is a long way.

Weather verbs have to have *it* in SUBJECT position. Chomsky (1981) and Bresnan (1982) claim that *weather* 'it' in English is not semantically empty. Some evidence for this is provided by the fact that a weather *it* can act as the antecedent for a participle:

While snowing it never rains.

However, languages such as Russian do not require surface SUBJECTS, and allow impersonal sentences such as *Nužno* 'It is necessary', *Možno* 'it is possible'. Some weather verbs in Russian are also impersonal: *Temnelo* 'It grew dark'. *Xolodno* 'It's cold'. I do not see any reason to say that these argument-taking predicates have null pronominal SUBJECTS, especially as they cannot control participles:

**Temneja,*	*stalo*	*ochen'*	*xolodno.*
darken-participle,	become-PAST-NEUT	very	cold-NEUT

When getting dark, it got cold.

Contrast this with the personal use of the verb *temnet'*, when referring to an object getting dark.

Bystro	*temneja,*	*tucha*	*pokryla*	*vse nebo.*
quickly	darken-participle	cloud-NOM	cover-PAST-FEM	all sky

As it quickly darkened, the cloud covered the whole sky.

Contrast it also with a non control situation, where there are two finite clauses:

Kogda	*stemnelo,*	*stalo*	*ochen'*	*xolodno.*
when	darken-PAST-NEUT	become-PAST-NEUT	very	cold-NEUT

When it got dark, it got very cold.

(Boris Katz and Beth Levin provided this data).

It is possible that weather verbs have some vague state of affairs as a semantic argument. But in Russian at least, this argument can remain unlinked to a SUBJECT position.

To summarize, an argument maps onto one of a small set of grammatical functions. Which grammatical function it maps onto is determined by the lexical realization of the argument-taking predicate, and by several constraints on the expressions of arguments by grammatical functions.

Let us now return to the examination of grammatical functions. A SUBJECT, OBJECT, OBJECT 2 or OBLIQUE can correspond either to a semantically simple argument, or to a semantically complex argument (a argument-taking predicate which in turn takes arguments). The following sentences show grammatical functions represented by demonstrative pronouns denoting propositions:

(33) White's ward-bosses are corrupt.

That doesn't surprise me.
SUBJECT

I don't believe *that*.
OBJECT

Try telling him *that*.
OBJECT 2

By *that*, do you mean he's crooked?
OBLIQUE

In Warlpiri, the demonstrative *ngula* is used to stand for propositions, as in the following example, in which *ngula* stands for the event denoted by the first clause.

(34) Wardilyka-ku -lpa-lu-rla wurru-ka-ngu karli-parnta,
turkey-DAT -PAST-3pl-DAT sneak.up.on-PAST boomerang-PROP-ABS
ngula-jangka -lpa-lu luwa-rnu mantamanta-pardi-nja-*kurra*
that-SOURCE -PAST-3pl shoot-PAST take.off-INF-OCOMP
They would sneak up on the turkey armed with a boomerang and after that hit it as it took off in flight. [mantamanta]

However, complex arguments do not have to be expressed as NPs; they can be represented by $\bar{S}$s, i.e. by a syntactic category which can express an argument-taking predicate and all of its arguments (as well as modifiers of the argument-taking predicate and its arguments). In English, for example, a SUBJECT may be expressed as a clause:

(35) *That John left so suddenly* upset Lucy.

It is probably universally true that grammatical functions such as SUBJECT, OBJECT etc can represent complex *semantic* propositions consisting of an argument-taking predicate and its arguments and modifiers. Languages may differ as to whether a particular grammatical function may be expressed *categorially* as C, (where C is the normal means of expressing complex propositions categorially: for instance, S and $\bar{S}$ in English). Principle 1, *selection for function* rather than *form*, means that the inability of $\bar{S}$ to appear as OBJECT 2 in some language cannot be stipulated in the selection frame of the matrix verb.[27] We have to find some other principled way of excluding it. Often what rules out the appearance of $\bar{S}$ is semantic incongruity. For instance, the SUBJECT of *read* in English cannot ever be a proposition: it must be something that one can imagine being able to read. Therefore (36) a. and b. are unacceptable, whereas (37) is acceptable.

(36) a. **That they are good students* reads complex articles easily.
b. **The fact that they are good students* reads books easily.

(37) The machine will read 2 pages at a time.

Since the SUBJECT of *read* cannot be a proposition, as (36) shows, it cannot be represented by an $\bar{S}$, because $\bar{S}$s only represent propositions.

There are two other functions which only represent complex semantic types (argument-taking predicates and their arguments). These functions are the 'Complement' function and the 'Adjunct' function.

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27. This of course can be stipulated by a phrase structure rule which does not contain a function annotation of the right form; that is, does not include:

$$\begin{array}{lll} VP \rightarrow & \ldots\ldots & \bar{S}\ldots\ldots \\ & & (\uparrow OBJ\ 2) = \downarrow \end{array}$$

1.3.1.2 Complements and Adjuncts

Complements act as arguments of argument-taking predicates. *Adjuncts* are argument-taking predicates which modify either propositions, or argument-taking predicates, or arguments. They are the only instance of non-selected grammatical functions. Verbs select complements, and so, for such a verb, the absence of the complement either renders the sentence ungrammatical, or else forces another interpretation of the verb. In this, complements contrast with *adjuncts*. The absence of an adjunct has no direct effect on the interpretation of the verb. For instance, (38), which has a VP complement means something different from (39), in which the VP complement is omitted. However, the presence or absence of the SUBJECT-controlled adjunct has no effect on the interpretation of the verb.

(38) a. She made John leave. (*leave* is an XCOMP).
b. She made John.

(39) a. In a rage, she made John leave. (*In a rage* is an ADJUNCT)
b. She made John leave.

The *open* and *closed* distinction cross-cuts complements and adjuncts, producing four types of grammatical function: COMPs, XCOMPs, ADJUNCTs, XADJUNCTS. The difference between *open* complements (XCOMPs) and adjuncts (XADJUNCTS), on the one hand, and *closed* complements (COMPS or SCOMPS) and adjuncts (ADJUNCTS), on the other, is that the SUBJECT of the *open* XCOMP or XADJUNCT has to be identical to some particular function of the matrix predicate selecting the XCOMP, whereas COMPs and ADJUNCTs contain their own phrasal SUBJECT. However, the SUBJECT of an ADJUNCT or COMP could be a null pronominal. An XCOMP or XADJUNCT is considered *open*, because its f-structure is incomplete unless supplied with a SUBJECT from among the arguments of the matrix predicate. A COMP or ADJUNCT is considered *closed*, because no additional information is needed for a complete f-structure; it provides its own SUBJECT (which may be a null pronominal).

The relation between the SUBJECT of an open function such as an XCOMP, and its controller, is called *functional control*. The relation between a null pronominal SUBJECT of a closed function, and the argument with which that null pronominal SUBJECT is coreferential is called *anaphoric control*.[28] The following sentences contrast a COMP with an XCOMP:

(40)	a. He told me *to leave*.	XCOMP
	b. He told me *that I should leave*.	COMP
	c. He signalled *to leave*.	COMP
	d. He signalled *for us to leave*.	COMP

(40)a. shows an XCOMP which is obligatorily controlled by the matrix OBJECT *me*. (40)b. shows its counterpart with a finite clause, (a COMP). (40) c. and d. show COMPs which are non-finite clauses; in d. the COMP has an overt nominal SUBJECT, while in c. it has a null pronominal SUBJECT which has an arbitrary interpretation.

There are two types of XCOMP, the idiosyncratically selected, and those introduced by lexical rule. The idiosyncratic are those XCOMPs selected by a given verb, such as *make*, or *become*, or *persuade*. But some XCOMPs can be added to the lexical entries of verbs by lexical rules. These include the directional complements to verbs of motion, such as *in Gibraltar* in the sentence *I arrived in Gibraltar*. Bresnan (1979) argues that these are XCOMPs. See 3.4.1. A second type of XCOMP introduced by lexical rule comprises the *resultative attributes* and *depictive attributes*,[29] as illustrated below.

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28. Since SUBJECT, OBJECT, OBJECT 2 and OBLIQUEs do not need any additional information for completion of their f-structures, they are also *closed* functions.

29. For a general discussion, see Halliday (1967), Bolinger (1967), Nichols (1978), Bresnan (1979), Williams (1980), Schein (1982b), Simpson (1982). For resultatives in particular, see Green (1970, 1973), Bolinger (1971) Fraser (1976), Levin & Simpson (1981), Riviere (1982), and Randall (1981). For depictives in particular, see Bresnan (1982a), Neidle (1982), Pesetsky (1982), Stump (1981), Travis (1980).

(41) a. She dyed the cloth *a delicate blue*. RESULTATIVE
b. She cried her eyes *blind*.
c. She drank herself *to death*.
d. Little Willy was burned *to ashes*.
e. She froze *solid*.

(42) a. He ate the meat *nude*. DEPICTIVE
b. He ate the meat *raw*.
c. He arrived *sober*.
d. He died *a hero*.

Bresnan (1982a) argues that the depictive attributes in (42) are XCOMPs.[30] In Simpson (1982b and to appear), I argue that both the resultatives and the depictives are added to the argument-structures of certain verb-classes, and assigned the function XCOMP, by general lexical rules. I will examine them further in Chapter 5.

Because the distinctions between ADJUNCTs and XCOMPs, and between *functional* and *anaphoric* control play an important role in Chapters 3, 4, 5 and 6, I will outline the major differences here.

ADJUNCTs differ from XCOMPs in three main respects.[31] First, by definition, XCOMPs are selected, whereas ADJUNCTs are not. Second, a sentence can have more than one ADJUNCT, whereas it can only have one XCOMP. The complementary distribution of XCOMP type argument-taking predicates is observed in Halliday (1967),

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30. See Travis, 1980, for arguments that they must be ADJUNCTs.

31. Aside from the three principal differences between ADJUNCTs and XCOMP to be described, Bresnan (1979) proposes a test involving the ability of COMPs but not ADJUNCTs to be questioned. In ii. the OBJECT of the XCOMP *to avoid the snakes* can be questioned, while in iv. the OBJECT of the ADJUNCT result clause *only to lose her to a snake charmer* cannot be questioned.

i. *Jones tried to avoid the snakes.*
ii. *What did Jones try to avoid ?*
iii. *Jones tried hard, only to lose her to a Tibetan snake charmer.*
iv. **Who did Jones try hard, only to lose to a snake charmer?*

Bowers (1973) and Nichols (1978).[32] Bresnan (1979) represents the XCOMP in English as an annotation on the phrase structure rule expanding VP.

VP →	V	(NP)	(NP)	(XP)
	↑ = ↓	(↑OBJ) = ↓	(↑OBJ 2) = ↓	↑XCOMP = ↓

Principle 2, *Functional Uniqueness*, prevents a sentence from having more than one XCOMP, because XCOMP is a *function*, which, like the SUBJECT and OBJECT functions, is assigned by *identity*. In contrast the function ADJUNCT is assigned by *inclusion* in a set of ADJUNCTs, and so a sentence can have many ADJUNCTs. (The formalism for representing this will be given in Chapter 2).

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32. XCOMPs correspond to the PREDICATE node proposed in Bowers (1973).

" [the Predicate node]... allows us to expand the category Predicate into any of the four major phrase-node categories NP, VP, AP, PP. Finally, such a system explains automatically why these four types of predicate-phrase are mutually exclusive. In other words, it explains the fact that Predicate-AP's, Predicate-NP's, Predicate-PP's, and Predicate-VP's may not co-occur in the same VP. I propose, therefore, to set up the following phrase-structure rules for the expansion of the node VP:

(206) *1.* $VP \rightarrow V \quad (NP) \quad (NP_2) \quad (Pred) \quad (PP)^* \quad (S)$

2. $Pred \rightarrow \begin{Bmatrix} NP \\ AP \\ PP \\ VP \end{Bmatrix}$

[Bowers, 1973:366]

Assigning to a categorial node a label such as Pred which expresses the function of the element under that node, is arguably a confusion of semantic and syntactic information, a violation of the autonomy of syntax, so Jackendoff (1977) claims:

"I believe, however, that postulating this node [Predicate node, JS] is as much a mistake as postulating a node Agent. Rather, Predicate, like Agent, is a semantic relation which may be assigned by the projection rule for the NP/AP position in the VP." [Jackendoff, 1977: 67]

Third, ADJUNCTs are anaphorically controlled, whereas XCOMPs are functionally controlled. I will now examine these distinctions more closely.

1.3.1.2.1 Selectional restrictions on XCOMPs

Since XCOMPs are *selected*, verbs can place semantic selectional restrictions on the type of argument-taking predicate that can be an XCOMP. For instance, *persuade* restricts its XCOMP to *volitional* argument-taking predicates, hence the unacceptability of *??I persuaded John to look a lot like his father.* Similarly, the lexical rules introducing resultative attributes have semantic selectional restrictions – resultatives can only be attached to verbs which have some effect on their object: *She shot John dead; ??She touched John wet.* ADJUNCTs, however, have no such restrictions, as (43) and (44) show.

(43) *Looking a lot like his father*, John persuaded me to vote for him.
(44) She touched his cheek, *still wet with remorseful tears.*

Verbs also appear to place *categorial* restrictions on the XCOMPs they select,

whereas ADJUNCTS, as (45) through (48) show, can be of any category,[33] and do not depend on the verb.

(45) PP: *In a rage*, I left the house.
(46) AP: *Angry at myself*, I left the house.
(47) NP: *A picture of rage*, I left the house.
(48) a. VP: *Cursing the world*, I left the house.
b. VP: *Angered by her attitude*, I left the house.

XCOMPs can also be of any category. *Keep* is a clear case of a verb which selects for a function, XCOMP, rather than for a particular category (NP, VP, A, PP) representing that function. However, in fact many verbs only allow a particular category to represent XCOMP.[34] For example, verbs of *naming* only allow NPs as XCOMPS. This is not

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33. English *absolute* constructions (secondary predicates with overt SUBJECTs), however, show a strong preference for certain categories, and these constructions are presumably ADJUNCTS with lexical SUBJECTS. The acceptability of categories as argument-taking predicates in ABSOLUTE constructions forms a hierarchy. Absolutes are uncommon, although not impossible, with nominals as argument-taking predicates.
i. *Her face a picture of woe, Mary rushed out of the house.*
ii. **John the best man, Bill was married yesterday.*
They are slightly more common with adjectives.
iii. *Her dog dead, Mary rushed out of the house.*
iv. *??A man dead, Mary rushed out of the house.*
They are relatively common with prepositional phrases and participles.
v. *Returning to Diabolo on the Cascadian, my coatcollar turned up against the chill, I talked to R.J. Stretch...* The New Yorker 17/5/82.
vi. *His pride injured, his finances in disarray, Arnold persuaded himself that he could be a different sort of hero....* New York Times Book Review 22/11/81
vii. *And on that bed there lies a knight, his wounds bleeding both day and night.* [Corpus Christi song]
I suspect that this restriction is semantically motivated, perhaps by the *individual-level/state-level* predicate distinction referred to later.

34. Originally, Bresnan (1979) proposed that verbs were subcategorized for functions whose names incorporated categorial information: NCOMP, PCOMP, ACOMP, or VCOMP. However, Peterson (1981a) and Grimshaw (1982) pointed out that this was a confusion of *function* (complement) with *category* (N, V, A, P). In line with Principle 2 (*functional uniqueness*), the single function XCOMP has been adopted in recent work in LFG (Bresnan (1982a), Neidle (1982a)).

surprising since the XCOMP represents the 'name' argument of the verb, and only NPs in general can act as names.

(49) They named/christened/baptized her *Lucy/*happy/*into a good name.

Some verbs demand volitional complements, and these can only be represented by VPs.

(50) a. I tried *to go/*happy/on the ski-course/the ski-course.* VP
AP is not possible, and NP and PP are only possible with a different sense of the verb.

b. I promised John *to go/*happy/*into the house/the rose.* VP
AP and PP are not possible, and NP is only possible with a different sense of the verb.

c. I persuaded John *to go/*happy/*President/?into the car/of it/* VP
AP and NP are not possible. A directional PP is marginally acceptable, while the PP *of it* probably reflects a different subcategorization frame.

Looking now at XCOMPs introduced by lexical rule, we find categorial restrictions. Resultative XCOMPs can only be APs or PPs, and not VPs or NPs, with a few exceptions. See Green (1972).

(51) I cooked the meat *black/to a cinder/*a cinder/*blackened/*burning.*

(52) I shot him *dead/to death/*a corpse/*dying/*killed.*

The exceptions are quasi-adjectival nominals such as *a pale shade of X*, *the right length*:

(53) I painted the car *green/ a pale shade of green.*
(54) I cut the stick *too short/ the right length.*

The existence of these exceptions suggest that the restriction is not on category, but rather on the kind of semantic predicate a category can represent. Nominals in general cannot represent a resultant state.

Some support for this is provided in work by Carlson (1977) and Stump (1981). They show that predicate nominals are much more restricted in their interpretation than APs or PPs; Carlson argues for a distinction between *individual-level* predicates and *stage-level* predicates: *individual-level* has to do with *kinds* or *objects*, while *stage-level* has to do with "*the spatio-temporal slices of an individual that show up as part of some event or state of affairs.* {Stump, 1981: 80]. This distinction corresponds roughly to the *inherent/temporary* property classification often used when talking about adjectives. (Bolinger, 1967; James, 1979). They provide a number of examples suggesting that nominals are almost always used as *individual-level predicates*. If resultative XCOMPs represent *stage-level* predicates, (which is plausible, since a resultant state such as 'black' is NOT an inherent property of an object such as 'meat'), then there is a natural explanation for why resultatives cannot in general be NPs. *A pale shade of pink* etc will be rare uses of NPs as *stage-level* predicates.[35] The participles are perhaps blocked by a conflict of aspect. A present participle specifies a continuing action, whereas a resultative describes a state that is achieved by the action of the verb, a completed state. A past participle describes a completed state also, but it implies that the state was completed before some time-reference-point. When a past participle is added to a verb as a resultative, it gives a strange time-travel impression: the action of the verb results in the OBJECT already being in some particular state. Thus **I shot him killed.* suggests that, as a result of my shooting him, he was killed at some earlier time.

To maintain the claim that verbs select functions, not categories, (that is, *persuade* selects an XCOMP, rather than a VP, and *name* selects an XCOMP, not an NP), it is necessary to find an independent, well-motivated, theory of lexical semantics that explains why Adjectives, Prepositional Phrases and argument-taking predicate Nominals cannot represent volitional arguments of the sort required by the verb *persuade*, and why only Nominals can be *names*, and why Nominals are *individual-level* argument-taking predicates, not *stage-level argument-taking predicates.* Work is being done in this area

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35. More work needs to be done on this topic, because not all nominals and adjectives behave exactly the same way with respect to *stage-level* and *individual-level* tests. Some behave as *stage-level* for one test, but as *individual-level* for other tests.

(Maling 1981), but a coherent theory is still awaited.

1.3.1.2.2 **Complementary distribution of XCOMPS**

The second difference between ADJUNCTs and XCOMPs is their distribution. A sentence can have many ADJUNCTS, but only one XCOMP. Since a sentence can have only one XCOMP, *resultative attributes* and *depictive attributes* cannot co-occur, and nor can they co-occur with idiosyncratically selected XCOMPs, as the following examples show. The first set show adjectival XCOMPs.

(55) *The doctor made John *well happy*.
'The doctor made John well as a result of which he was happy.'
(resultative XCOMP *happy* and idiosyncratic XCOMP *well*).

(56) *The doctor made the tea *strong weak*.
'The doctor made the tea strong when it was weak'
(depictive XCOMP *weak* and idiosyncratic XCOMP *strong*).

(57) *They believed the mouse *unconscious dead*.
'When the mouse was in fact dead they believed it unconscious'
(depictive XCOMP *dead* and idiosyncratic XCOMP *unconscious*)

(58) *They shot John *dead drunk*.
'They shot John dead when he was drunk'
(depictive XCOMP *drunk* and resultative XCOMP *dead*; marginally possible with *drunk* as an ADJUNCT separated by a heavy intonation break)

(59) *They boiled the lobster *alive red*.
'They boiled the lobster alive, and they boiled it to the stage where it became red'
(depictive XCOMP *alive* and resultative XCOMP *red*)

This complementary distribution does not only hold of adjectival XCOMPs.[36] Consider the following examples with SUBJECT-controlled verbal XCOMPs.

(60) *I promised John *drunk/happy* to go to the zoo.

(60) is ungrammatical, no matter whether the depictive and resultative are predicated of the SUBJECT or of the OBJECT. Neither a depictive attribute (*he/I was drunk when I made my promise*) nor a resultative attribute (*he/I was happy as a result of my making the promise*) can co-occur with a SUBJECT-controlled complement. The following examples

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36. There are two classes of possible counter-examples to this complementary distribution claim. The first I owe to David Dowty.

i. *She dished the food out into the bowls.*

Following a suggestion in Bolinger (1971), I assume that intransitive prepositions such as *out* can (but need not) be resultative attributes. I also assume that directional PPs such as *into the bowls* can (but need not be) resultative attributes. If in i. the particle *out* and the PP *into the dishes* are distinct resultative attributes with the XCOMP function, then *functional uniqueness* is violated. There are several possible explanations for these examples. The first is to assume that one or other of the intransitive P and the PP is not an XCOMP, for which independent evidence would be desirable. The second is to assume that *out into the dishes* is a complex resultative predicate, rather than two separate resultatives. I incline towards the first alternative, taking *dish out* as a complex verb, rather than a verb with an XCOMP. While particles used as XCOMPs act like XCOMPs in not appearing in participle constructions, complex verbs formed of verb + particle can appear in such constructions, and so can the verb *dish out*.

The King is counting out his money. Complex verb
John counted the strike-breakers out. V + XCOMP
The King's counting out of his money lasted five hours.
??John's counting out of the strike-breakers distressed their families.
Mary's dishing out of the food lasted ten minutes.

Janet Wager pointed out a second class of counter-examples to me. If the directional argument of verbs such as *arrive* and *bring* is taken to be an XCOMP, then sentences such as the following should be unacceptable:

He arrived home drunk.
They brought him home drunk.

In order to maintain the claim that depictives are XCOMPs, we must either say that *drunk* in this example is not a depictive, but an ADJUNCT, or that *home* is not an XCOMP, but an OBLIQUE argument. I have no evidence for either alternative.

show that it is not the presence of an OBJECT which prevents the appearance of two XCOMPs. Verbs like *hope* and *try* have no OBJECTs, and take SUBJECT-controlled XCOMPs, but cannot have *resultative* or *depictive* XCOMPs, even with the help of a 'fake reflexive' like the one in *She drank herself to death*.

(61) a. *I tried *drunk/exhausted* to please John.
b. *I tried myself *exhausted* to go there.

(62) a. *I hoped *drunk/into a terrible state* to go there.
(Acceptable when the depictive is contained within the non-finite clause, as a complement: *I hoped to go there drunk*).

b. *I hoped myself *into a terrible state* to go there.

Similarly, a verb with an OBJECT-controlled XCOMP like *persuade*, or *ask* cannot take a resultative or depictive XCOMP.

(63) *I persuaded John *drunk/convinced* to go there alone.
(64) *I asked John *drunk/upset* to go there alone.

The prediction then is that, if a secondary argument-taking predicate is not an XCOMP, but an ADJUNCT, it should be able to co-occur with an XCOMP. This is borne out by the examples below, in which an ADJUNCT co-occurs with a variety of XCOMPs.

(65) a. Drunk, I promised John *to go to the zoo*
b. Drunk, I tried *to please John*.
c. Drunk, I hoped *to go there*.
d. I promised *to go there*, besotted by him

(66) a. Secretly amused, I persuaded John *to go to the zoo*.
b. I persuaded John *to go to the zoo*, secretly amused at his reluctance.

(67) a. Sober, he could never have shot the cow *dead*.
b. Sober, he would never have eaten the meat *raw*.
c. He would never have eaten the meat *raw*, sober.

Non-functionally controlled purpose clauses are also ADJUNCTs, and they can co-occur with resultative (68) or depictive XCOMPs (69), as well as with idiosyncratically selected

XCOMPs (70).

(68) She knocked the patient *unconscious, to operate on him.*
(69) I gave him the meat *raw, to feed to the dogs.*
(70) John kept Paul *amused to please Lucy.*

Since ADJUNCTS are not restricted by *Functional Uniqueness*, a sentence can have multiple ADJUNCTS, as in (71) (due to Halliday (1967)).

(71) They keep *warm naked young.*

1.3.1.2.3 **Anaphoric and functional control**

The third difference between XCOMPs and ADJUNCTS is that the former are *functionally* controlled, whereas the latter are *anaphorically* controlled. In *functional control*, what is important for determining the controller of a clause is the *function* of that controller. For English XCOMPs, the identification of the SUBJECT with an argument of the matrix is done in the lexicon. The lexical entry for a verb such as *try* has a *control equation* stating:

(↑SUBJ) = (↑XCOMP SUBJ)

The SUBJECT of the sentence is identified with the SUBJECT of the XCOMP. *Control* equations can only refer to grammatical functions, and therefore it has to be *function* which identifies the controller, rather than other properties, such as *Case*. Another important property of functionally controlled clauses is that all of the controller's features, such as CASE, NUMBER, PERSON and GENDER, must be identical to the features of the XCOMP's SUBJECT.

In *anaphoric control*, a null pronominal 'PRO' is introduced as the SUBJECT. The PRO can be referentially identical to some other argument of the sentence. What determines the controller of an anaphorically controlled complement varies from language to language, and sometimes from structure to structure. Sometimes an obviation principle operates (cf. Bresnan, 1982a), sometimes *function* is used, and

sometimes control depends on real world knowledge. For many languages. including Warlpiri,[37] case-concord determines the controller.

Crucially, the anaphorically controlled PRO and its antecedent do not have to have identical features. In particular, whereas the SUBJECT of a functionally controlled clause must have the same CASE feature as its controller, the PRO SUBJECT of an anaphorically controlled clause normally has the same case that a lexical SUBJECT of the same verb would have. Andrews (1982c, 1982d.) and Neidle (1982a, 1982b.) exploit this distinction to explain the differences between certain kinds of complements in Icelandic and Russian. In Chapter 6 I will use this test to argue that certain clauses in Warlpiri are anaphorically, rather than functionally, controlled, even though *function* is crucial in determining their controller.

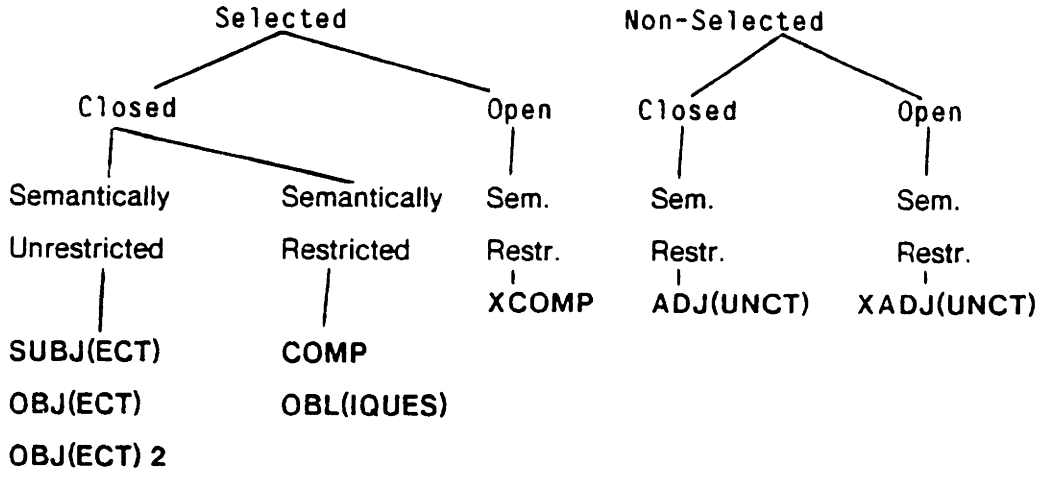
1.3.1.3 Summary of grammatical functions

The set of *grammatical functions* consists of XCOMPS, COMPS, XADJUNCTS, ADJUNCTS, SUBJECTS, OBJECTS, OBJECT 2s, and OBLIQUES. The diagram gives the information about types of functions provided so far. (The diagram is adapted from Bresnan (1982a).

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37. In Warlpiri, case-concord is not the only means of determining the controller of an anaphorically controlled clause. The complementizer suffix may determine the controller. See Chapter 6.

(72) **Grammatical functions**



I will now examine the properties of the lexicon and of morphological and word-order expression within the LFG framework.

1.3.2 The Lexicon

The grammatical functions are selected by lexical items. This selection is recorded in the *lexical entry* for a lexical item.

A lexical entry for a given lexical item contains categorial information, information about the syntactically relevant features of the lexical item (such as NUMBER), as well as a *lexical form*. A lexical form consists of the *predicate-argument structure* of the lexical item (the arguments of the argument-taking predicate) paired with the *grammatical functions* selected by that lexical item. The pairing is subject to Principles 2 and 3 (*functional uniqueness* and *function-argument bi-uniqueness*).

Only the *syntactically relevant* arguments of a argument-taking predicate are included in its lexical form. An example of an argument which is not *syntactically relevant* is the kind of incorporated object found in *He homered* (= *He hit a home-run.*) (Bresnan, 1980a), or the locative arguments in verbs such as *corral* or *tree* (Kiparsky, p.c.). This incorporated object cannot be referred to in syntax by processes such as anaphora:

(73) *The cat treed Fido. and it was a wattle-tree.

(In Chapter 3 I discuss incorporation of arguments which *can* be referred to in the syntax.)

Lexical rules can operate on lexical forms to alter the pairing of grammatical functions with arguments in the predicate argument structure. Such rules include Passive and Dative-movement in English.[38] Only lexical rules can change the assignment of a grammatical function to an argument, because there is a constraint placed on the expression of grammatical functions by word-order and morphological marking. This constraint is the principle of *Direct Syntactic Encoding*.

Principle 4: Direct Syntactic Encoding

Every non-lexical rule of grammar must preserve the assignment of grammatical functions. [Bresnan, 1980b: 5]

Essentially, the principle prevents the destruction or creation of argument-structure other than in the lexicon.[39] This principle prevents rules of syntax, say, movement transformations, from changing one grammatical function to another. In LFG, Passive cannot be a constituent-structure rule, because it changes the grammatical functions of the SUBJECT and the OBJECT. But it can be a lexical rule.

I will call rules relating the lexical entries of argument-taking predicates *diathetical* rules, because they operate on the diatheses of argument-taking predicates. I assume that there are two types of diathetical rules - those that involve alternations of grammatical function: *relation-changing* rules, and those that relate predicate argument structures: *semantic redundancy rules*.

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38. See Andrews (1982c and d) Baker (1981), Bresnan (1980b), Grimshaw (1980), Levin (1981), Levin (in prep.), Mohanan (1982c), Rappaport (1980) for discussions of lexical rules.

39. The Projection Principle of Government Binding (Footnote 1_6) captures part of this intuition, among its other properties. However, since GB assumes that grammatical function changing rules such as Passive are movement rules, it requires the use of null elements (*traces*) to preserve argument-structure under movement transformations.

Relation-changing rules describe a single predicate-argument structure with different assignments of grammatical functions. An example of a relation-changing rule is *Passive* in English, which I discussed earlier. In a typical active sentence, the semantic role of Actor/Perceiver/Experiencer/Emotion instigator etc. is assigned to the grammatical function SUBJECT, while the grammatical function OBJECT is associated with the semantic role of Patient/ Perceived/Object of Emotion. In the passive counterpart of such a sentence, the semantic role of Patient etc. is associated with the SUBJECT, while the role of Actor etc. is expressed by a prepositional phrase, or else is linked to a null grammatical function. There is no significant meaning difference between active and passive forms of the same verb, although their discourse functions may be different.[40] Whether relation-changing rules are directional and ordered is a question for

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40. For instance, consider the two sentences:

i. Lucy loves John.

ii. John is loved by Lucy.

i. focusses on Lucy's behaviour, ii. on a property of John's.

research (see L. Levin, in progress). Bresnan (1980a) assumes that they are not.[41]

Lexical entries which seem to be related, but which do not have precisely the same meaning, are related by *lexical redundancy rules*. Examples from English include the alternations *shoot at*, and *shoot*; *laugh at* and *laugh*. *Laugh* does not presuppose an object of merriment, as *laugh at* does, and *shoot* presupposes that the object is shot, while *shoot at* does not. A redundancy rule relates a one-place predicate *laugh* with a two-place predicate *laugh*. The second argument of the two-place predicate may be linked to either an OBJECT or an $OBLIQUE_{goal}$.[42] The relation between *shoot* and *shoot at* is a relation between two two-place predicates, one of which, *shoot*, has an affected object linked to an OBJECT, and the other of which, *shoot at*, has a goal or endpoint (the target), linked to either an OBJECT or an $OBLIQUE_{goal}$.

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41. A small piece of evidence for ordering lexical rules comes from DATIVE movement. The assumption that DATIVE movement changes OBJECTs into OBJECT 2, and $OBLIQUE_{goal}$s into OBJECT, and that DATIVE movement is ordered with respect to a rule adding XCOMPs, provides an explanation for the failure of DATIVE OBJECTs in ditransitives to be modified by depictive attributes. OBJECTs usually can have depictive attributes predicated of them, subject to certain semantic conditions.

I ate the meat raw.

The OBJECT 2 in a ditransitive, or the OBJECT in the ditransitive which has not undergone DATIVE shift, can have depictive attributes predicated of them:

I gave the meat raw to him.

I gave him the meat raw.

But the OBJECT in a DATIVE-shifted ditransitive cannot have a depictive attribute predicated of it:

**I sent him the grapes sick.*

Suppose that depictive attributes such as *sick* are XCOMPs, controlled by the OBJECT, and suppose that the diathetical rule adding such an XCOMP applies to the non-DATIVE shifted ditransitive only. Then, when DATIVE shift occurs, and the OBJECT *the meat* becomes an OBJECT 2, the controller of the XCOMP will also become an OBJECT 2, because the rule changing OBJECT to OBJECT 2 applies to *all* instances of OBJECT in the lexical entry of the verb. If the XCOMP adding rule has to precede DATIVE movement, the ill-formed sentence **I sent him the grapes sick* is underivable.

42. Exactly how the semantic relationship between the *at*-forms and the non-*at* forms should be expressed is an area that needs much more work, because there is as yet no agreed-upon way of expressing the lexical meanings of words.

The alternation between OBJECT and $OBLIQUE_{goal}$ in *laugh at* and *shoot at* is of course a relation-changing rule, since it is an alternation between two different grammatical functions assigned to one semantic relationship. Bresnan (1980b) provides evidence of this for the *laugh at* cases. She observes that the prepositional object behaves both like an OBJECT and like an OBLIQUE. It behaves like an OBJECT in that it undergoes Passive:

(74) a. They laughed at John.
b. John was laughed at.

Passive in English is defined as operating on OBJECTs. But the intransitive verb *laugh* has no OBJECT.

(75) a. *They laughed John.
*John was laughed.

Furthermore, the OBJECTs of prepositions usually do not undergo passive (**The garden was kissed in by John and Mary* > *John and Mary kissed in the garden.*). So the presence of the preposition *at* changes the transitivity of the verb *laugh*, allowing it to have an OBJECT. But, if the function assignment of a predicate is changed, an LFG account must use a lexical rule. Otherwise Principle 4 (*Direct Syntactic Encoding*) would be violated.

However, in other respects the prepositional objects behave like genuine prepositional phrases. The evidence for the prepositional OBJECT being part of an OBLIQUE prepositional phrase comes from *clefting*. The preposition and the NP can move together as a constituent.

(76) a. John was laughed at by the kids.
b. ?It's at John that they were laughing.

Bresnan (1980b) proposed that verbs with prepositional OBJECTs such as *laugh at* be derived by an optional rule of Verb Preposition Incorporation. When the rule does not apply, the prepositional phrase remains a prepositional phrase, and has an OBLIQUE grammatical function. When the rule applies, the preposition becomes part of a complex

verb, e.g. *laugh at*, and the OBLIQUE becomes the OBJECT. [43] Bresnan proposes the morphological change to a complex verb, because the verb and the transitive preposition seem to form a single constituent: for instance, the passive participle of an incorporated Verb-Preposition Verb can be used adjectivally: *a much talked-about event*.

Verb-Preposition Incorporation allows the lexical incorporation of a preposition and its OBJECT to form a new transitive verb, whose OBJECT is the prepsoitional object. A modified version of the rule in Bresnan (1980b) follows:

Verb-Preposition Incorporation

Operation on lexical form: $OBL_{prep.} \rightarrow OBJ$

Morphological change: $V \rightarrow [V\ P]_V$

The rule converting an OBLIQUE into an OBJECT is optional. When it applies, Passive is free to apply to its output. When it doesn't apply, the OBLIQUE is still a prepositional phrase, and has the same structural properties as other prepositional phrases.[44]

The boundary between relation-changing rules and semantic redundancy rules is not always clear. A debatable case concerns the so-called *indefinite-object deleting* verbs. For example, a verb like *eat* can appear with or without an OBJECT.

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43. The Verb-Preposition Incorporation rule is a formalization of Jespersen's insight:
"In 'everybody laughed at Jim' *'Jim' may be considered the object of the whole combination verb + preposition, and consequently may be made the subject of the passive:* 'Jim was laughed at by everybody'; *in set phrases modern English goes even further:* 'She will be taken good care of'."
Jespersen, "The System of Grammar" in *Selected writings of Otto Jespersen*, p.503.

44. Notice in this context an interesting piece of evidence pointed out by Bresnan (1980b). While adverbs cannot intervene between the verb and the *at* in the prepositional passive (because the verb plus *at* form a complex verb), they can intervene between the verb and the *at* in active sentences (because, optionally, the *at* is still part of the preposition phrase and not part of a complex verb.)
John was laughed at cruelly by the children.
**John was laughed cruelly at (by the children.)*
?Who is the man the children were laughing so cruelly at?

(77) I ate the apricot tart.
(78) I ate, and then felt better.

In (77), the argument-taking predicate which *eat* represents means something like *X uses X's mouth to cause Y to go down from X's mouth into X's stomach, where Y is something solid.* (See Wierzbicka, 1980 for a somewhat different definition). However, in (78) this argument is not overtly expressed in the sentence, although it is entailed. Observe that the two forms have different uses. First, unlike the use in which the *thing eaten* is overtly expressed, when the *thing eaten* is a constant, it must be something thought of as food. It would be inappropriate to say *The baby's eating*, when it is chewing up cigarette butts. (I am grateful to Richard Carter for pointing this out to me.) Second, there is an aspectual difference. Without an overt object, *eat* normally expresses duration of an action.

Suppose that there are two lexical entries for *eat*, with grammatical function assignments differing as follows.

eat 1	eater	thing eaten
	SUBJ	OBJ
eat 2	eater	thing eaten
	SUBJ	∅

In the second example, the argument representing the *thing eaten* is linked to a *null grammatical function*. The issue is, are the meanings of the two uses of the verb *eat* sufficiently similar for us to assume that the null grammatical function and the OBJECT function are just alternant assignments of grammatical functions to the one argument? Or should they be related instead by a semantic redundancy rule, like, say *shoot* and *shoot at*? Bresnan (1980a) takes the former route. But the matter remains open.

I have discussed the *eat* and *laugh at* alternations at such length, because in 2.3.1 I shall examine similar diathetical rules in Warlpiri.

1.3.3 Morphological Expression

In LFG, it is assumed that all inflection, including case-marking, is done in the lexicon before lexical insertion. There are no syntactic rules adding or deleting inflections. The inflections carry information about functions and function features which is available to the syntax. So, the success of LFG as a model of grammar requires a compatible theory of morphology. The theories of morphology presented in Lieber (1980) and Selkirk (1981, 1982), as well as the Lexical Phonology/Morphology theory (LPM) seem to be compatible with LFG.[45]

All these theories assume that inflectional affixation is the same type of process as derivational affixation, and that it should be done in the morphology. Affixation is assumed to be a sequential process, which creates branching trees of the form:

$$[[[[[X]_{root}\ Y]_L\ Z]_M\ A]_K$$

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45. Muysken, 1981 and 1982, has interesting ideas on the representation of information about grammatical functions provided by the morphology in Quechua. Marantz, 1981, contains a proposal for explaining the similarities between certain syntactic constructions and their morphological counterparts by means of *morphological merger*. Unfortunately, neither of these proposals fits well with the LFG and LPM theories simultaneously. Muysken makes use of empty abstract c-structure categories such as CASE, which are controlled by morphological elements, such as morphological case-markers. But, LFG forbids the use of null categories. LPM requires erasure of brackets prior to lexical insertion, so that it is not clear how a c-structure position could be controlled by a morphological case-marker, since that case-marker would not be an identifiable morpheme. (Allowing a case-*feature* to act as morphological controller is insufficient, because Muysken, 1981, crucially relies on the position of morphemes in double case-marking structures to determine which morpheme controls which abstract case position). Marantz's theory embodies the important insight that certain affixes can, and should be treated, as functionally equivalent to argument-taking predicates, an insight which informs the account of semantic case given here in Chapter 4. To distinguish different types of predicate-argument relation, Marantz relies on lexical insertion taking place at different levels of representation: logico-semantic structure, deep structure and s-structure. At present, LFG does not have the required distinctions between levels, and lexical insertion can only take place once, so that Marantz's analysis is not easily translateable. But see L. Levin, in prep.

Compounding is assumed to be a similar process:

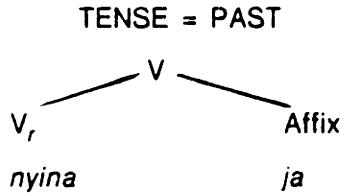
$$[[[[X]_{root}[Y]_{root}]_L Z]_M A]_K$$

Features from each part of the word percolate up to the top, giving priority to the features of the head, by means of feature percolation conventions. Lieber (1980), Selkirk (1982), and Williams (1981) accept that a category-changing affix, such as the derivational suffix *-ness*, is the head of the word. But they differ as to whether inflectional suffixes should be considered heads of words. They also differ as to how much priority in percolation is given to the features of the head. See Selkirk (1982) for some discussion.

Let us look at feature percolation in Warlpiri, first in a derivational suffix, and then in an inflected form. Consider the Warlpiri verb *nyinami* 'to sit'. The root is *nyina*. When the nominalizing suffix *ngu* is attached, a nominal is created: $[nyinangu]_N$. *Ngu* has a lexical entry stating that it attaches to verb roots (Vr) of the first conjugation class, to form nominals.

ngu: $]_{Vr\ +\ 1st\ conj.}$ ·····$]_N$

When the past tense suffix is attached to the verb root *nyina*, a verb is created: $[nyinaja]_V$. *Ja* has a lexical entry stating that it attaches to verb roots of the first conjugation class. Either the inflectional suffix provides its own category information, or else it is transparent, and the category of the verb takes priority. In any event, the resultant verb has the category V, provided by either the inflection or the verb, and the TENSE feature PAST, provided by the inflection:



None of these theories has much to say about what information is available to the syntax from morphology other than through feature percolation. In Chapter 3, I will argue that, although much information provided by the morphology can be captured in terms of features, not all of it can. Some functional information must also be provided. I will claim that the notion 'morphological head' of a word needs to be distinguished from a semantic, or *functional*, head of a word. The same morphological affix may function as the semantic head of a word or simply as an agreement marker, even though it is morphologically still in the same position. I will also argue that functional considerations may determine feature percolation, rather than a simple 'head first' account.

I have adopted the Lexical Phonology/Morphology theory in this thesis, because an important condition on the operation of syntactic rules can be readily derived in this theory. This condition is the *Lexical Integrity Hypothesis*.

Principle 5: Lexical Integrity Hypothesis

No constituent structure rule may order any element into or out of lexical categories such as N, A, V.

That is, constituent-structure rules are blind to the internal structure of lexical categories.

The *Lexical Integrity Hypothesis* is a constraint imposed on the interaction of morphology with syntax, which derives from the claim made in Chomsky (1970) that derivation is a process done in the lexicon, not in syntax. From this claim, the view arose that:

Syntactic rules cannot move elements into or out of lexical categories.

However, Chomsky (1970), also argued that productive morphological processes, such as inflection, should be done in the syntax. The *Lexical Integrity Hypothesis* thus would not block rules from moving inflectional morphemes around. Theories which accept the evidence for doing inflection in the morphology, rather than in syntax, (such as LPM, and LFG), have therefore a stronger interpretation of the *Lexical Integrity Hypothesis*: namely that no syntactic process can move inflectional morphemes around. In order for the inflectional information provided by a morpheme such as the plural suffix *s*

in English to be visible in the syntax, such theories rely on features and feature percolation.

A second area in which the interpretation of the *Lexical Integrity Hypothesis* differs is as to exactly which syntactic processes are prevented from applying to parts of a lexical category. Selkirk (1982) considers that the *Lexical Integrity Hypothesis* blocks movement rules from applying to parts of a word, but explicitly allows anaphoric processes to look inside words. But LPM makes a stronger claim, namely that:

Principle 5': Revised Lexical Integrity Hypothesis

Constituent-structure processes (which include annotation of functional information, and indexing of anaphoric information) are blind to the internal structure of words.

I will give three examples to show what the different interpretations of the *Lexical Integrity Hypothesis* block, before showing how it follows from Lexical Phonology/Morphology.

First, the *Lexical Integrity Hypothesis* prevents deletion processes, such as gapping,

from deleting parts of words.[46] Thus, whereas one can gap the verb under identity with a verb in the previous sentence, one cannot gap part of a verb:

(79) a. John paid the electricity bills, and Mary the gas bills.
b. *John liked the play, and Mary dis- it.

(80) a. John outran Bill, and Mary Patrick.
b. *John outran Bill and Mary -swam Patrick.

Similarly, an adjective or nominal cannot be gapped from its suffix:

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46. The prohibition against omitting parts of words under identity is not absolute. Conjunction of two categories allows gapping under certain semantic conditions. Consider *In both pre- and post-war Germany...*, pointed out to me by Maria Luisa Zubizarreta. If *pre* and *post* are lexically-attached prefixes, then these constructions violate the *Lexical Integrity Hypothesis*. In general Level 2 suffixes (see ahead for this term) are freer than Level 1 suffixes to violate the *Lexical Integrity Hypothesis*. Consider the sentence *John is father- and motherless*. However, there are severe restrictions on gapping of Level 2 suffixes. For instance, not all words with *less* allow gapping. In particular words formed by compounding *less* with an abstract noun do not: **John is hope- and careless*. Abstract nouns do not gap out of other structures either: **John is hope- and cheerful. *John's hopeful- and cheeriness kept us going.*

Giving up the *Lexical Integrity Hypothesis* for the sake of this restricted set of examples seems to me unwarranted, until an alternative explanation for why the vast majority of words are opaque to syntactic processes is found. I speculate that the acceptability of structures such as *pre- and post-World War 11* has to do with the fact that their argument structures are relatively transparent, and thus that they are easily interpretable. By this I mean that if an affix resembles an independent word with an argument structure, and if what it attaches to is easily interpreted as an argument, then it is possible to interpret the conjunction as a conjunction of two arguments of one predicate. For instance, the prefixes *pre-* and *post-* resemble semantically prepositions such as *before* and *after*: *before and after World War 2*. Similarly, *less* resembles the preposition *without*. Apparently, concreteness (*father* as opposed to *hope*) is important in interpreting something as an argument (whereas for independent prepositions it is irrelevant: *John is without hope and joy*).

As Ken Hale pointed out to me, a more difficult case is presented by the Spanish examples of adverbials consisting of conjoined adjectives followed by the adverbial suffix *mente*: [*clara y distinta-mente*] 'clearly and distinctly'. See Harris and Mohanan (in prep.).

(81) *John was hopeless, but Mary was -ful.
(82) *Lucy admired his open- and faithful-ness.

Second, on the assumption that words are opaque not only to movement and deletion processes, but to all other syntactic processes, the generalization noted by Postal (1969), that words are *anaphoric islands* is captured. In a sentence such as *John is fatherless now*,[47] it is impossible to refer to *father* by a pronoun, whereas in a paraphrase which uses a negative word, rather than a negative suffix, the word *father* can be referred to:

(83) ??John is fatherless now, and he misses him.
(84) John has no father now, and he misses him.

Third, on the assumption that inflectional elements such as TENSE and CASE and NUMBER markers are attached in the morphology, rather than in syntax, the *Lexical Integrity Hypothesis* prevents syntactic rules from changing, or moving, these markers. Thus, for instance, there is an alternation in Russian with respect to the case of OBJECT nominals. If the sentence is affirmative, a normal OBJECT will have ACCUSATIVE case,

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47. The generalization is more striking when the word is not derived:
*i. *John is an orphan now, and he misses them.*
ii. John has no parents now, and he misses them.
But it is debateable whether a decomposition involving *parents* is the right way to express the meaning of the word *orphan*, and therefore as to whether i. actually is an *anaphoric island* violation.

There are counterexamples to the anaphoric island claim. Corum (1973) sums up a number of them. They fall into two main classes: derived nominals, and words formed from proper names:

Lucy interviewed Hawke, and Bill had one with Fraser.
After painting the house I had enough left over for the dog-kennel.
Shakespearian imitators usually fail to capture his style.
I speak French fluently because I lived there.

(Examples given by Corum which do not fall into either classification include: *John became a guitarist because he thought it such a beautiful instrument.*)

Again, I have no real explanation, and can only speculate that factors such as the existence of definite referents (*France, Shakespeare*) make these sentences marginally acceptable.

while the same sentence, if negative, can have an OBJECT with GENITIVE Case. The *Lexical Integrity Hypothesis* prevents formulating a syntactic rule which changes an ACCUSATIVE case-marker to a GENITIVE case-marker in the presence of a NEGATIVE feature, because the ACCUSATIVE and GENITIVE case-suffixes are both morphemes, and no morpheme can be substituted for another morpheme in the syntax. Similarly, the *Lexical Integrity Hypothesis* rules out transformations such as Affix-hopping, because it disallows movement of parts of words, whether inflectional or derivational.

Pesetsky (1979), and Mohanan (1982d), derive the *Lexical Integrity Hypothesis* from a level-ordered theory of morphology, in fact from the *Bracket Erasure Convention*. I will briefly sketch out the basic assumptions of LPM.

Affixes attach to roots and stems at different levels in the morphology. Part of the lexical entry for an affix states at what level that affix can be attached. For instance, the suffix *in* can attach to adjectives at Level 1, and the suffix *ious* attaches to nouns at Level 1, while the suffixes *ness* and *non* attach to adjectives at Level 2.

(85) **Lexical Morphology**

Level 1	in + A	in + legible: illegible
	N + ious	grace + ious
Level 2	non + A	non + legible
	A + ness	gracious + ness
	.	
	.	
	.	
	.	

A word moves up through the levels until the level of lexical insertion into the syntax. It cannot loop back from one level to an earlier level. Thus, a Level 2 affix must be attached after a Level 1 affix. The assertion that *non* and *ness* are Level 2 affixes, is a claim that the Level 1 prefix *in* cannot precede *non*, and that the Level 1 suffix *ious* cannot follow *ness*. The following forms are unacceptable:

(86) * *in-non-legible*

* *happi-ness-ious*

In each level, phonological rules apply to the combination of stem + suffix. Phonological rules can be specific to a particular level. For instance, the assimilation of *n* to *l* preceding an *l*, in *illegible* is a Level 1 rule, not a Level 2 rule. *Nollegible* is unacceptable.

The internal categorial brackets of words which are created by affixation or compounding, are erased at the end of every level, thus making the boundaries invisible to rules operating at the next level. This operation is called *Bracket Erasure*. Erasure of internal brackets at the top level of the morphology renders all internal brackets of a lexical item invisible to post-lexical phonological rules, as well as to syntactic rules. The fact that the word *fatherless* consists of the morphemes [*father*] and [*less*] will not be apparent in syntax, and therefore these brackets cannot be referred to in a syntactic rule moving elements around. But not only can these brackets not be referred to, they are non-existent, and so it is impossible to annotate with a function name, or provide an anaphoric index to, a part of a word. Thus, from Bracket Erasure is derived the strongest form of the *Lexical Integrity Hypothesis*.

The *Lexical Integrity Hypothesis* together with *Direct Syntactic Encoding* restrict greatly the interaction of morphology and syntax. In 2.5.2 I will briefly sketch out a problem for the *Lexical Integrity Hypothesis* resulting from discontinuous expressions which seem to act as single lexical words. In Chapter 3 I will discuss the problem of single lexical items which seem to violate the *Lexical Integrity Hypothesis* in that they carry information about several grammatical functions. I propose a solution which requires annotating morphemes with functional information as part of the affixation process.

1.3.4 **Constituent-structure expression**

Constituent-structure rules are expressed as *context-free rewriting rules* which represent *precedence* and *dominance* relations. These rules take as their input and output the *categories* of the language. Most LFG literature has assumed that these rules conform more or less to the $\bar{X}$ account of categorial structure given in Chomsky (1970), Bresnan (1976) and Jackendoff (1977).

There are two types of category, *major* and *minor*. Minor categories are specified by their labels - *Particle, Comp, Det* etc. Major categories consist of a *type* and a *distinctive feature matrix of categorial features*. The *type* of a major category denotes the *level* of projection from the basic lexical category. Major categories in many languages consist not only of *lexical categories* N, A, V, P, but also of *projections* of these categories. The highest projection is called the *maximal projection*. The level of projection of a particular category is called the *type* of that category. So, a lexical category has type *0*: X^0; the first projection has type *1*: $\bar{X}$; the second projection has type *2*: $\bar{\bar{X}}$, etc.

1.3.4.1 **Categorial Features**

The category of an item is relevant both in the lexicon and in the syntax.[48] In the lexicon, an item's category determines what affixes it can take; verbs in English and Warlpiri have tense affixes, while nominals in English and Warlpiri cannot take tense affixes. In the syntax, the category of an item determines where it can appear in the phrase structure, and what grammatical functions can be assigned to it. Thus, in English and Warlpiri a V cannot be the SUBJECT of a sentence.

For morphological rules, the categories need to be distinct, because morphological rules apply to particular categories. For instance, the *Past tense* markers in English and Warlpiri attach only to elements of the category V. So, if the categories are to be represented in terms of features, these features must uniquely identify them for the purposes of morphological rules. The simplest proposal is that there is a one-to-one correspondence between syntactic and morphological categories, and this is the claim of

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48. I am particularly grateful to Paul Kiparsky for discussion of this section.

$\bar{X}$ theory. Therefore, if the categories are to be defined in terms of categorial features, these features should uniquely identify categories both in the morphology and in syntax.

Ideally, the categorial features should be universal. Jackendoff (1977: 31) and Bresnan (1982) suggest using functional (in Jackendoff's terms 'phrase structure') properties of categories to define the categories. Since grammatical functions are, by hypothesis, universal, features defined solely in terms of functions should also be universal. Unfortunately, the definitions of categorial features given by both Jackendoff and Bresnan on the basis of English do not carry over naturally to Warlpiri. Warlpiri has only two major categories, and both Jackendoff's and Bresnan's categorial features render these categories *non-distinct*.[49]

Morphologically, N and V in Warlpiri are clearly distinguished - tense suffixes attach to the one, and case suffixes to the other. They also have different phonological properties. For instance, there are rules of regressive vowel assimilation and reduplication that apply only to verb roots. See Nash (1980).

Syntactically and semantically, however, Nominals form a continuum, as Hale (to appear) shows. At one end, the nominals act as argument-taking predicates, which can correspond to verbs in other languages (for instance, experiencer nominals like *lani* 'afraid'), or to adpositions and adverbs representing locational and directional predicates (for instance *kankarlarni* 'up above'). At the other end, nominals such as Pronouns are used almost exclusively as arguments. In between is a whole range: from nominals denoting entities, which are translated by Nouns in English, such as *wati* 'man', to nominals denoting attributes, which translate as Adjectives in English, such as *wiri* 'big'.

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49. Jackendoff uses the features [$\pm$ OBJECT] and [$\pm$ SUBJECT]. Since nominals and verbs in Warlpiri can both act as matrix argument-taking predicates, and can both select OBJECTS, nominals and verbs are not distinct. Bresnan (1982a) uses the features [transitive] and [predicative], and allows an unmarked value for these features, as well as + and -. Both N and V are [+ transitive] under her account. It is not clear what values N and V should have for the feature [predicative], because the definition as stated does not apply directly to Warlpiri. However, since [predicative] covers much the same area as Jackendoff's [$\pm$ SUBJECT], it is difficult to formulate the definition so that N and V are distinct.

The uses of these are not fixed: a nominal such as *wiri* can denote an attribute, or it can denote an entity, translatable by a locution such as *a big one* in English.

The crucial syntactic difference between categories in Warlpiri seems to be between categories which can act as arguments, and categories which can only act as argument-taking predicates.[50] Nouns can act as arguments or as argument-taking predicates, while Verbs can only act as argument-taking predicates (unless of course they are nominalized, in which case they can act as arguments.)

So, functional definitions in terms of SUBJECT and OBJECT cannot be formulated in Warlpiri. The features [±N] and [±V] which Chomsky (1970) proposed are also unenlightening, unless we assume that N really stands for the property of being an argument, while V stands for the property of being a argument-taking predicate.[51] The generalizations about the functions of categories in Warlpiri can be expressed in a feature matrix. However this feature matrix is not readily extendable to languages with more than two major categories. Therefore this feature matrix should be treated simply as a summary of the Warlpiri categorial generalizations.

	Argument	Predicate
N	+	+
V	-	+
S	-	-

Sentences are neither argument-taking predicates nor arguments (there are no finite sentential arguments in Warlpiri), although they contain both argument-taking predicates and arguments. Therefore they are negatively specified for both values.

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50. Warlpiri has other minor categories, such as Particles.

51. The distinction between *argument* and *argument-taking predicate* is approximately equivalent to the distinction between *terms* and *contentives* adopted by Emmon Bach (1975) when arguing for a simplification of the categories of English at an abstract level.

1.3.4.2 Phrase-structure rules

Projections of lexical categories are related to each other by means of the $\bar{X}$ schema, a context-free rewriting rule. This schema covers endocentric structures, but not exocentric structures, such as Sentences.

$X^{(n)} \rightarrow \alpha_a \ldots X^{(n-1)} \ldots \alpha_k$

where α_i is a minor category, or a maximal projection, and n is the number of projections of the lexical category X^0. X^{n-1} is called the *head*.

The $\bar{X}$ schema includes both *dominance* relations (the relation of X^n to X^{n-1}, and to the minor categories in the rewrite rule), and *precedence* relations (this is represented by the linear order of the categories in the rewriting rule).

The $\bar{X}$ rule can be used to construct a tree, which is called a *constituent Structure tree*, or c-structure tree. Lexical items are inserted under the preterminal nodes of this tree. Bresnan (1982a) proposes that lexical insertion is subject to one very important constraint:

Principle 6: The Null Element Constraint

A non-terminal category cannot exhaustively dominate the empty string *e*, except in the case of constituent control, where constituent control is the long-distance dependency characterizing wh-movement and similar constructions.

This constraint prevents, for instance, the appearance of null pronominals in constituent

structure.[52] (But see Neidle, 1982 for an argument for constituent structure null pronominals). In 2.3.4.1 I shall argue that the Null Element Constraint must be weakened to accommodate paradigmatic gap information from pronominal clitics.

Warlpiri has phrase structure rules expanding S, $\overline{N}$ and $\overline{V}$. The phrase structure rule expanding S is of course exocentric. The phrase structure rule expanding $\overline{N}$ does not conform to the $\overline{X}$ schema, in that, aside from the head, it contains non-maximal projections of N. I will discuss these at greater length in Chapters 2 and 4.

This concludes the overview of the role of grammatical functions in LFG, and the kind of lexicon, constituent-structure and morphology available. A summary of the principles constraining the mapping from one component to another is given in 2.2.7.

1.4 Outline

In Chapter 2, I present some basic properties of verb-headed and nominal-headed finite clauses in Warlpiri, concentrating on representing properties of particular relevance to the predicate-argument relation. These fall into several types. First, what grammatical functions does Warlpiri employ? Second, how are grammatical functions assigned? I discuss evidence for SUBJECTs and OBJECTs, and also the somewhat inconclusive status of arguments with DATIVE case. The expression of grammatical functions is done by a syntactic rule and a lexical rule. An annotation on the phrase structure rule assigns grammatical functions freely to the daughters of S. A lexical rule allows any argument-taking predicate to introduce a null pronominal for any grammatical function it selects. The assignment of grammatical functions is constrained in two ways. First, a

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52. The constraint represents one of the principal differences between LFG and GB. GB *requires* empty categories because of two principles, the Projection Principle (see Footnote 16), and the θ Criterion (which says that every argument has a θ role and every θ role is assigned to an argument). These principles demand the appearance of empty categories to represent constituents that have undergone the movement rule *Move* α. *Move* α includes NP-movement (Passive, and an OBJECT $\rightarrow$ SUBJECT rule for Unaccusative verbs), and WH-movement. LFG allows empty categories for WH-movement, but not for NP-movement.

given grammatical function has to have the right case-marking. I claim that information about *case-marking* is stored in the lexical entries of argument-taking predicates. Second, certain grammatical functions must agree with pronominal clitics in the AUXILIARY. I discuss the representation of these clitics.

In chapters 3, 4, 5, and 6, I discuss the case when an argument-taking predicate does not head a finite clause, but rather is *dependent* on some other finite clause. The concept of a *dependent argument-taking predicate* covers a number of situations, in particular:

[1] Modification of an event by setting it in a time or place: (ADJUNCT)
Lucy kissed John in the garden on Saturday.

[2] Secondary predication: attributing a property to an argument independently of the argument-taking predicate: (ADJUNCT)
Lucy walked away, homesick for Aberdeen.

[3] Secondary predication: attributing a property to an argument, where the attribute is also an argument of the same argument-taking predicate: (XCOMP)
Lucy wanted John happy.

[4] Attributing a property to an argument, where the attribute is expressed by a verb: (ADJUNCT and XCOMP)
John wanted to leave.
Lucy gave John a book to read.

The discussion is organized according to the category of the dependent argument-taking predicate. The categories include the lexical category of Nominal, (including nominalized verbs), and the affixal categories of Case, and Complementizer suffixes. I show that the same kinds of rule can be used to represent dependent argument-taking predicates, irrespective of their categorial status. Furthermore, most of these rules are independently needed for the representation of argument-taking predicates which head finite clauses.

Case is discussed in Chapter 3. I show that case-suffixes in Warlpiri can have three uses. They can simply indicate that a nominal has a particular grammatical function, such as SUBJECT. They can indicate that a nominal attributes a property to an argument with the same case. I claim that these two uses behave alike syntactically, and call them the *agreement* (*AGR*) use of case-suffixes. The third use of case-suffixes is as argument-taking predicates analogous to English prepositions (the *ATP* use of case-suffixes). I argue that the agreement use and the argument-taking predicate use can be represented as the difference between case-suffixes which have no syntactically relevant meaning, and case-suffixes which do have a syntactically relevant meaning. This last use requires the assignment of grammatical functions within the morphology, as part of the word-building process. However, I argue that a morphological distinction between *grammatical* and *semantic* case-suffixes is still required to account for the unusual phenomenon of double case-marking.

The use of nominals as dependent argument-taking predicates is discussed in Chapters 4 and 5. In Chapter 4 I show that discontinuous nominal expressions bearing the same case-suffix can be treated as nominals used as argument-taking predicates, and bearing the grammatical function of ADJUNCT. I show that the existence of these discontinuous nominal expressions follows from the rules assigning functions within S and $\overline{N}$, together with the rule introducing null pronominals, and a convention, tentatively proposed as a universal rule, that ADJUNCTS must not disagree in case with their controllers.

In Chapter 5, I examine the uses of nominals as dependent argument-taking predicates in Warlpiri, arguing that they are not normally selected arguments. I show how semantic structures expressed in English by *complements* (selected arguments which are semantically complex), are paraphrased by other structures in Warlpiri. A striking illustration of this is provided by the great freedom which resultative attributes have in Warlpiri, compared with their English counterparts. This freedom can, I claim, be attributed to the English resultatives being XCOMPS (that is, arguments of an argument-taking predicate), and the Warlpiri resultatives being simply ADJUNCTS (attributes).

The use of nominalized verbs and complementizer suffixes as dependent argument-taking predicates is the topic of Chapter 6. I show that the assumption that, like case-suffixes, complementizer suffixes optionally have meanings, (depending on whether they act as agreement markers, or as argument-taking predicates), accounts for the behaviour of complementizer suffixes with nominals, nominalized verbs, and a special class of action nominals.

2. Simple sentences

2.1 Introduction

Certain properties of simple sentences in Warlpiri are relevant to expressing the predicate argument relation, but have no obvious counterpart in the syntax of more familiar languages. These include:

[1] The fact that the argument-taking predicate of a finite clause may be a verb or a nominal.

[2] The determination of grammatical function by a complex ERGATIVE-ABSOLUTIVE case-marking system, rather than by constituent order.

[3] The agreement of pronominal clitics with certain subcategorizing grammatical functions, whether represented by an overt lexical item or by a null pronominal.

[4] The use of null pronominals to represent subcategorizing grammatical functions.

All these properties will be crucial for the account of secondary predicates (dependent argument-taking predicates) and control structures developed in later chapters. It is therefore incumbent on me to show how these properties are represented in the fragment of Warlpiri grammar which I am developing. Besides, the attempt to write a relatively explicit account of simple, uncontroversial, sentences is useful in itself, as a way of finding out the virtues and shortcomings of a linguistic theory.

The first property, that a verb or a nominal may act as an argument-taking predicate, has implications for the general theories of categories, which I examined briefly in 1.3.4.1. I will look more closely at nominal-headed sentences in 2.4.

The second property, the use of case-marking rather than configurational structure to determine grammatical functions, is the topic of Sections 2.2 and 2.3. Because LFG divorces configurational structure from grammatical function, it can account for *free constituent order*, that is, the fact that order does not determine grammatical functions.

Instead, grammatical functions are determined by the *ERGATIVE-ABSOLUTIVE case-marking system*, which allows the SUBJECT to be either ERGATIVE or ABSOLUTIVE, depending largely on the meaning of the verb. I propose that the case of grammatical functions is determined in the lexicon as part of the lexical entries of argument-taking predicates such as verbs. In LFG, the SUBJECT function is selected by the verb, and appears as part of a verb's lexical entry. Hence, lexical rules can determine the case of the SUBJECT of a given verb. Unlike nominals, however, the pronominal clitics in Warlpiri do not show ERGATIVE-ABSOLUTIVE case-marking. Following Hale (1973a), I will claim that the Warlpiri pronominal clitics represent SUBJECT, OBJECT and Adjunct DATIVE, rather than NOMINATIVE and ACCUSATIVE case. This will lead to an account of the third property.

The fourth property, that subcategorizing grammatical functions may be expressed by null anaphors, rather than by overt lexical items, can be represented within LFG, by assuming that, under certain circumstances, an argument-taking predicate can introduce a null pronominal to express a grammatical function selected by that predicate. Clitic doubling is also easily expressed by extending the account of clitic pronominals developed in Grimshaw (1980)

The format of the present chapter is as follows. 2.2 contains a discussion of a typical intransitive sentence. I show how constituent structure, lexical and morphological information is gathered together to build a functional structure, and I discuss constraints on the building of a functional structure. The general rule for function assignment in Warlpiri: *Assign grammatical functions freely* is presented. This rule of function assignment makes Warlpiri a non-configurational language in contrast to configurational languages such as English, in which grammatical functions are associated with nodes of the phrase structure. An introduction to the AUXILIARY and to null pronominals in Warlpiri is given.

Section 2.3 deals with transitive sentences, including possible case-frames for two-place predicates, and the agreement of arguments with the AUXILIARY. I present evidence for choice of grammatical function assignment in Warlpiri. The analysis of grammatical functions is extended to include ditransitive sentences, and adjunct

DATIVEs. I argue for the existence of two diathetical rules affecting both case selection and grammatical function selection in Warlpiri. Finally, I gather together information about the AUXILIARY pronominal clitics, including a short discussion of reflexives and reciprocals. I show that agreement with the AUXILIARY can be simplified if gramatical functions are represented in terms of features, and suggest that the antecedent features of reflexives and anaphoric control structures can be expressed in terms of these grammatical function features.

Section 2.4 introduces sentences headed by nominals. These have many properties in common with verb-headed sentences, with the exception of the obligatoriness of the AUX. Section 2.5 discusses phrase structure rules for N and V in Warlpiri. I show that the *functional head* of an $\overline{N}$ does not necessarily correspond to its *phrase structure head.* I show that certain complex verb structures, while lexical words, can nevertheless be discontinuous in the syntax, thus presenting a paradox for the principle of *Direct Syntactic Encoding* and the *Lexical Integrity Hypothesis.*

2.2 An intransitive sentence

Consider a simple Warlpiri sentence with an intransitive verb.

(1) Ngaju ka-rna parnka-mi.
I-ABS PRES-1sg run-NPST
I am running.

This sentence can be re-ordered:

(2) Parnka-mi ka-rna ngaju.

But *ka-rna*, which is the AUXILIARY (AUX), must appear in second position.[1]

(3) a. *Ngaju parnka-mi ka-rna.
b. *Parnka-mi ngaju ka-rna.
c. *Ka-rna ngaju parnka-mi.
d. *Ka-rna parnka-mi ngaju.

This general freedom of word-order, together with the initial or second position of the AUX, are the most striking features of Warlpiri word-order. The freedom of word-order can readily be expressed in an X* phrase structure rule (Hale, 1979; Nash, 1980). Such a rule simply concatenates different categories to create an expression.[2]

---

1. This is true when the first element of the AUX is an enclitic, as *ka-rna* is. However AUXs with non-enclitic first elements can appear initially, as in the following example.

Kala	*-lu*	*mangi*	*rdarri-marda-rnu*	*kurdiji-rla + lku.*
USIT	-3pl	boy-ABS	catch-PAST	initiation-LOC + THEN

Then they caught the youths at initiation time. [mangi]

Furthermore, *preposing* of conjunctions and propositional particles creates the illusion of the AUX appearing later than second position in the sentence, as in the following sentence in which the conjunction *kala* is preposed.

Kala	*jalangujalangu-rlu + ju*	*ka-rlipa-jana*	*maliki + ji*	*punku*
But	now-ERG	PRES-1plin-3pl	dog-ABS + EUPH	bad-ABS

marda-rni *kuyu-pungu-wangu.*
have-NPST meat-killer-PRIV-ABS
But nowadays we have bad dogs who don't kill meat [*Maliki*:20]
[conjunction, time-adverbial, AUX]

Left-dislocated Ns or Vs also cause the AUX to appear later in the sentence.

Malkarri,	*ngulaju*	*ka-rnalu*	*kurdiji + jala*	*ngarri-rni.*
+ shield design, that		PRES-1plex	shield-ABS + CLEARLY	call-NPST

Malkarri is what we call the shield. [malkarri]

I assume that preposed and left-dislocated elements are generated outside the S. Therefore in the examples given, the AUX is still in first or second position within the S.

2. The Kleene star X* allows there to be as many Xs as desired, including none. If an X is required, I will express this as X X*. Alternatively, one can use X+ to stand for "at least one X, and perhaps more." I have chosen to use the Kleene star instead, because of its use in the literature on non-configurational languages.

The optional second position of the AUX will be expressed by placing it in sentence-initial position, and moving it into second position by a stylistic movement rule, as Hale (1979) suggests.

(4) **Phrase Structure Rule 1** $S \rightarrow$ (AUX) α α^*

Stylistic movement rule AUX α α^* $\rightarrow$ α AUX α^*

(I have made the AUX optional because the AUX is optional in nominal-headed sentences.) Equally, the AUX could follow the first constituent, and then move into initial position by a stylistic movement rule.[3]

LFG at the moment does not provide for stylistic movement rules. However, there is a fact which is very hard to handle without stylistic movement. This is the position of the AUX with respect to preverbs and verbs. (Loosely, a preverb is an adverbial element that attaches to the Verb). In a nutshell, the problem is that the preverb and verb form a single lexical unit, but the AUX can intervene between the preverb and the verb. If it is assumed that the preverb and verb have to be inserted together because they form a single lexical item, then the only way that the AUX can intervene between the preverb and the verb is for it to move there. I will present the evidence in 2.5.2.

The phrase structure rule defines a *constituent structure tree*, a *c-structure* for a sentence.

2.2.1 Categorial information

The categorial information that *ngaju* is an N, and that *parnkami* is a V is provided by the *lexical entries* for *ngaju* and *parnkami*. The categorial specification of a lexical entry determines what are the *preterminal nodes* of a constituent structure tree, under which the lexical item can be inserted. The lexical item itself is the *terminal node* of the c-structure tree.

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3. A phonological constraint on certain AUX elements, such as *ka*, that they are clitics, ensures that they cannot appear initially, although non-clitic AUXILIARIES can do so.

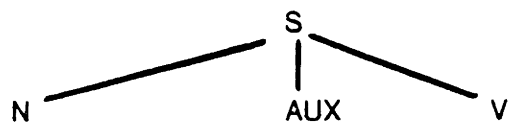
The major categories in Warlpiri are N, V and S. The minor categories are the AUX, and various PARTICLES, CONJUNCTIONS and CLITICS (the latter may perhaps be subsumed under PARTICLES, since the chief difference between the two is phonological — whether or not they cliticize to a host). The phrase structure rule must contain an annotation to the effect that α can be N. V, or PARTICLE.

(5) **Phrase Structure Rule 1'**

$$S \rightarrow (AUX) \quad \alpha \quad \alpha^* \qquad \alpha = \overline{N}, \overline{V}, \text{Particle}$$

In 2.5.3, I will justify using $\overline{V}$ and $\overline{N}$ in the phrase structure rule, rather than N and V.

The phrase structure rule, togetner with the categorial information from the lexical entries of the lexical items inserted, creates a c-structure tree for (-3), which is given below.



Ngaju **ka-rna** **parnka-mi**

This c-structure tree contains no information about the representation of grammatical functions — how and where is the fact that the SUBJECT of the sentence is first person singular represented? The word-order tells us nothing about the relations between argument-taking predicates and arguments, or of argument-taking predicates with each other. The categorial information, however, does tell us something. As the categorial feature matrix I proposed in 1.3.4.1 indicates, Warlpiri verbs are always argument-taking predicates.[4] They can never act as arguments. Warlpiri nominals can

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4. In the lexicon, a verb-root can become nominalized through the addition of an agentive suffix. However, in this case, the category of the whole item is an N and not a V.

be either arguments or argument-taking predicates.

Linguists conventionally assume that a sentence normally consists of at least[5] one argument-taking predicate. All other elements in the sentence are interpreted with respect to this argument-taking predicate. They can be arguments of that argument-taking predicate (for instance, SUBJECT, OBJECT, XCOMP etc.), attributes of arguments (adjectival or prepositional ADJUNCTs), attributes of argument-taking predicates (adverbial ADJUNCTs), or attributes of the proposition (sentential adverbs, negative particles, etc.).

Suppose the element with respect to which all other elements are interpreted, is called the *head*. The head of a sentence in English will be the Verb.[6] The head of a sentence in Warlpiri will be N or V; the head of a sentence in Russian (assuming that there is no null copula), can be an adjective, a prepositional phrase, a nominal or a verb. If we also assume, as LFG does, that there is a category Sentence, then, since the Head of the Sentence is not of the category Sentence, Sentences are exocentric structures.[7]

In building a functional structure which expresses relations between argument-taking predicates, arguments and attributes, it is important to know which element is the Head; that is, which element is the argument-taking predicate to which all other elements are related. To express the idea that information about the Head of a

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5. The reason for the *at least* qualification is that a sentence may contain other argument-taking predicates which are used as *secondary predicates*, such as *raw* in: *I ate the meat raw*.

Actually, this statement is too strong: exclamations and vocatives are sentences without argument-taking predicates. They have no propositional force, but they are speech-acts, and will be interpreted by whatever rules of semantic interpretation are required for non-declarative utterances.

6. If participles are considered nominals, participial clauses are headed by nominals.

7. Jackendoff (1977) argues that sentences in English are projections of V, making the sentence category an endocentric category. But there are numerous difficulties with this, and, since I wish to claim that in Warlpiri finite sentences may be headed by N or by V, I will not adopt Jackendoff's approach.

category is in a sense information about the whole category.[8] LFG adopts a formalism making use of *functional equations* involving the meta-variables ↑ and ↓. These functional equations represent information which is used to build a functional structure. The ↑ arrow stands for the immediately dominating node (which is called 'mother' or 'up' in the LFG literature), and the ↓ arrow stands for the node to which the equation is attached (this node is called 'ego', 'self' or 'down'). The equation ↑ = ↓ is read as:

Information about mother is information about self.

Information refers to other equations representing *syntactically* relevant features and functions. It does not, for instance, include *categorial* information.

In English, the information that the VP is the Head of S is expressed by adding the equation ↑ = ↓ to the VP in the phrase structure rule expanding S:

(6)

$$\begin{array}{lcll} S & \rightarrow & NP & VP \\ & & & \uparrow = \downarrow \end{array}$$

Annotating the VP with this equation does not indicate that the S is an $\overline{X}$ projection of V; it simply means that information about V (excluding categorial information) is information about the sentence.

VP, however, is an endocentric category. In the phrase structure rule expanding it, V will be annotated with the equation ↑ = ↓.

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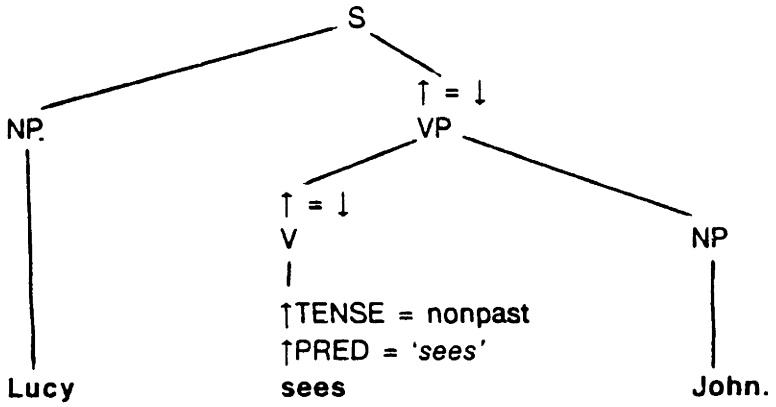
8. This is another important difference between LFG and GB. In LFG, the argument-taking predicate has to be the Head of the sentence. Otherwise no complete and coherent functional structure could be built from a sentence. In GB, the V does not have to be the Head of the sentence: an element, INFL, which need not be phonetically realized, can be the Head of the sentence; S and $\overline{S}$ can be viewed as projections of INFL. Being headed by V or by INFL may be a parameter distinguishing languages, and also may be associated with non-configurationality. (See Huang, 1982, and Whitman, 1982, for discussion of this.)

(7)

$$VP \rightarrow V\ (NP...) \quad (\uparrow = \downarrow)$$

An annotated c-structure for the sentence *Lucy sees John* created by the S and VP phrase structure rules is given below.

(8)



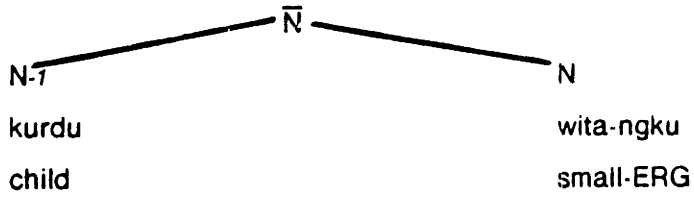
V is the head of VP, and the VP is the head of the sentence. Since the Head relation is transitive, V is the Head of the sentence. V has the feature *tense*, represented by an equation ↑TENSE = (tense-name), and it has a meaning, represented by an equation with the PRED feature (these equations will be discussed later.). We can interpret the sequence of ↑ = ↓ equations as follows:

Information about the V , including the information that the TENSE is nonpast, and that its meaning is *run*, is information about the VP. Information about the VP, including the information that its TENSE is nonpast, and that its meaning is *run* is information about the sentence. Therefore, the sentence has non-past tense, and its argument-taking predicate (the value of the PRED feature) is *run*.

Let us now look at endocentric structures, such as VP. $\bar{X}$ theory embodies the claim that major lexical categories expand into projections. A feature percolation convention is adopted by which features of the head of a projection percolate up, ultimately to become features of the maximal projection. On such an account, the percolation of features such as TENSE from the V to VP is automatic, because the V *must* be the head of the VP. I will call the $\bar{X}$ head, the *phrase-structure* head, in contrast to the node assigned ↑ = ↓ which I

will call the *functional* head. In the case of VP. the phrase structure head and the functional head are identical. But this is not essential. LFG claims that the two notions need to be kept distinct, first , to allow for exocentric constructions, such as sentences, which have functional heads, but no phrase structure heads; second, to allow for possible differences between phrase-structure heads and functional heads, and third, to allow easy representation of syntactically relevant features and function information carried by more than one element within a maximal projection. I have already discussed the exocentric constructions. I will briefly illustrate the second and third points.

The unmarked convention in configurational encoding is for phrase structure heads always to be functional heads. However, consider an example such as the $\overline{N}$ in Warlpiri. The rightmost nominal is marked with Case. Nominals to its left may or may not be marked with Case. But, although the rightmost nominal determines the Case of the whole $\overline{N}$, (and, arguably, the Category of the NP) and is the only obligatory element within an $\overline{N}$ (an $\overline{N}$ must consist of at least one case-marked nominal), it is not necessarily the functional head of the $\overline{N}$, as there is no particular position in the expansion of $\overline{N}$ which is assigned the equation $\uparrow = \downarrow$.



the small child

(See 2.5.1 for the use of N-1).

In this example, *kurdu* is semantically the head, (and in LFG would be assigned the equation $\uparrow = \downarrow$), while *wita-ngku* is an attribute of that head. However, it is the nominal *wita-ngku* which determines the CASE of the whole NP. In other words, the

phrase-structure head, *wita-ngku*, is distinct from the functional head, *kurdu*.[9]

Let us look now at the conveying of information about a maximal projection by several elements within that maximal projection. The equation ↑ = ↓ is not only attached to *major* categories. Bresnan (1982a) assumes that minor categories such as determiners are annotated with the equation ↑ = ↓. This means that their features also can be treated as features of the immediately dominating node. This can be illustrated with a simplified version of the NP expansion rule:

(9)

$$\text{NP} \rightarrow \left(\begin{array}{c}\text{Det}\\ \uparrow = \downarrow\end{array}\right) \left(\text{Adj}\right) \begin{array}{c}\text{N}\\ \uparrow = \downarrow\end{array}$$

The N is both the phrase structure head of the NP and also the functional head, providing the category for the NP, and the meaning. But the NP has a *definiteness* feature from the DET. So, the NP does not obtain *all* its features from the N.

Multiple annotations of the equation ↑ = ↓ do not result in multiple heads of a structure. Recall that a head provides an argument-taking predicate, or more generally a *meaning*. Thus a verb provides an argument-taking predicate for a VP, and a noun provides something equivalent for an NP. (Just as nominals in the VP are interpreted as arguments or attributes of the V, so other elements in the NP are interpreted as attributes (or as arguments) of the N.) An independent principle, *Consistency*, to be discussed in 2.2.6.1.1, prevents an element such as a VP from having more than one argument-taking predicate acting as functional head. We can thus revise the definition of *functional head* to be:

an element labelled with the equation ↑ = ↓ which also has a meaning.

A determiner does not have a meaning in this sense: it is neither an argument-taking predicate nor a referential object; it consists of features such as [definite]. Therefore,

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9. In Chapter 3, I will claim that the distinction between phrase structure head and functional head is paralleled by a difference between morphological head and functional head.

although both the N and the DET are labelled with the equation ↑ = ↓, only the N is the *functional head* of the $\overline{N}$.

Let us now turn to the expression of *functional head of a Sentence* in Warlpiri. In English, this was expressed by labelling with the equation ↑ = ↓ a VP position in the phrase structure rule expanding the Sentence. But the Warlpiri phrase structure rule given above does not explicitly mention V. And, in fact, a sentence can have a nominal predicate instead of a V. An example is *lani* in (10).

(10) Ngaju lani.
I-ABS frightened.
I am frightened.

(This sentence has no AUX because nominal-headed sentences do not have to have AUXs. See 2.4.2). Furthermore there is no particular place in the sentence dedicated to the argument-taking predicate which is its *functional head*, as there is in English. I propose instead a general annotation on the phrase structure rule.

(11) **Phrase Structure Rule 1''**

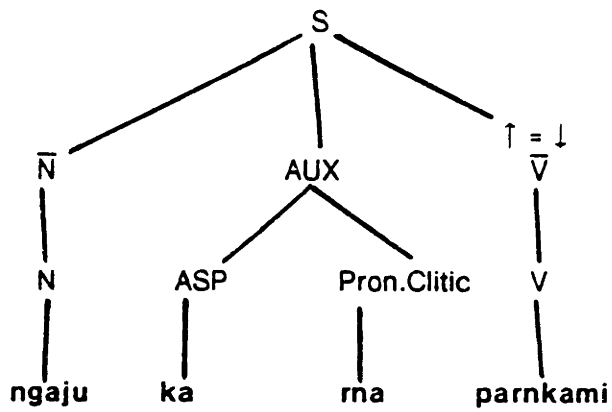
S → (AUX) α α^* (where α = $\overline{N}$, $\overline{V}$, Particle)

Assign ↑ = ↓ freely

Independent conditions on the interpretation of f-structures prevent the assignment of ↑ = ↓ to more than one argument-taking predicate in a sentence, as I will show in 2.2.6. Thus, ↑ = ↓ cannot be assigned to a nominal if there is a V present, because verbs must always be argument-taking predicates. I will assume the correct assignment of ↑ = ↓ to the $\overline{V}$. The effect of the revised phrase-structure rule is illustrated in the c-structure tree given below for (12).

(12) Ngaju ka-rna parnka-mi.
I-ABS PRES-1sg run-NPST
I am running.

(13) **C-structure 1 for (1).**



This tree includes an expansion of the AUXILIARY into an ASPECT marker followed by a pronominal clitic. Pronominal clitics representing the SUBJECT have a particular position in the AUX, which I will call the Clitic 1 position. 2.3.4 contains a more detailed discussion of the positions of the pronominal clitics.

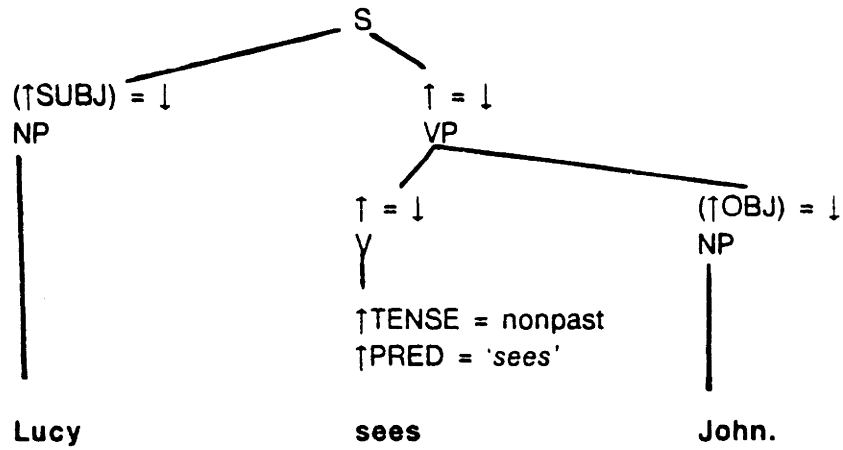
Now that we have seen how assignment of *functional heads* operates, let us look at other functions. Consider the expansion of the English sentence rule given in (6). To express the fact that the NP acts as the SUBJECT of the sentence, the NP is labelled with the equation (↑SUBJ) = ↓, which is read as: *Information about the Sentence's SUBJECT is information provided by self.*

(14)

S	→	NP	VP
		(↑SUBJ) = ↓	↑ = ↓

Similar equations can be provided for the NP in the VP, labelling it as an OBJECT, in the VP expansion rule given in (7). The c-structure tree for the sentence *Lucy sees John* annotated with the SUBJECT and OBJECT equations is given below:

(15)



Bresnan (1982a) sums up the assignment of ↑ = ↓ to functional heads and minor categories, and the assignment of functions, with respect to the $\bar{X}$ theory, as follows:

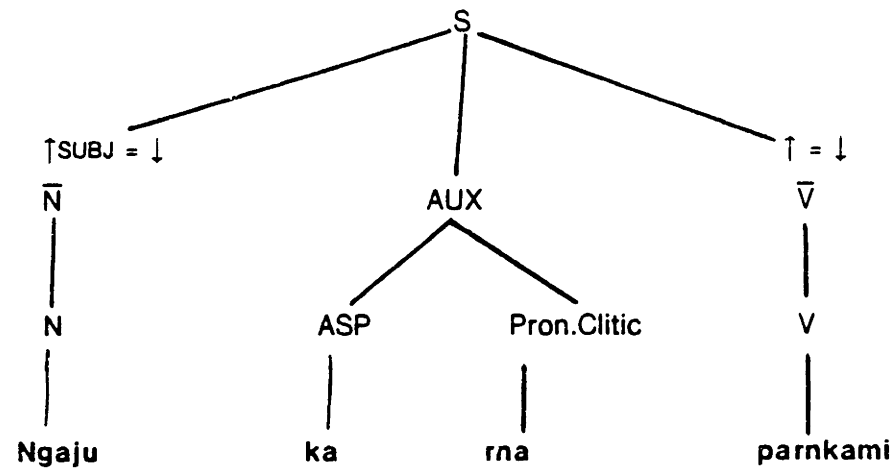
> *In configurational encoding a basic form of c-structure rule is, for any categorial feature matrix X,* $X^{n+1} \rightarrow C_1 \ldots X_n \ldots C_m$, *where* $n > 0$, *and* C_i *is either a minor category or a maximal projection. ... For this rule form, the basic principle of configurational encoding is to associate a function-assigning equation* (↑G) = ↓ *with each* C_i *if and only if* C_i *is a maximal projection, and to associate the equation* ↑ = ↓ *elsewhere.* (1982b: 296)

Let us now look at Warlpiri. Where in the sentence *Ngaju ka-rna parnkami* is the information that *ngaju* is the SUBJECT of the sentence expressed? *Ngaju* can be thought of as a maximal projection, and so eligible for being the SUBJECT. But what tells us that it is the SUBJECT? Jumping ahead a little, I will assume that we have the information for the nominal *ngaju* that its Case is ABSOLUTIVE. The lexical entry of the verb *parnkami* also provides information about the SUBJECT's CASE.

Suppose assignment of the SUBJECT equation is done by a general rule – if an element has ABSOLUTIVE case, assign it the equation (↑SUBJ) = ↓. This rule is too strong, since not all SUBJECTs are ABSOLUTIVE, and not all ABSOLUTIVE nominals are SUBJECTs. A disjunction would be required: *Assign an element with ABSOLUTIVE case the function SUBJECT if the verb does not select an ERGATIVE-case-marked SUBJECT.* Such a disjunction would have to be a constraint on the well-formedness of f-structures, and might be hard to implement. There is a simpler solution at hand.

Just as ↑ = ↓ can be assigned freely, the equations (↑SUBJ) = ↓, (↑OBJ) = ↓, (↑OBJ2) = ↓, (↑OBL.GO) = ↓ etc. can also be assigned freely. The c-structure for the sentence *Ngaju karna parnkami*, annotated with ↑SUBJ = ↓, is as follows.

(16) **C-structure 2 for (1)**



In 2.2.6, I will show that *consistency*, together with the assumption that verbs specify the case of nominals expressing arguments which they select, ensures that the SUBJECT of *parnkami* has ABSOLUTIVE case.

The assignment of grammatical functions in Warlpiri can be collapsed into a single annotation on the phrase structure rule.

(17) **Phrase Structure Rule 1'''**

S → (AUX) α α* (where α = N̄, V̄, Particle)

Assign ↑ = ↓ freely to daughters of S

Of course, free assignment overgenerates. However, the conditions on the well-formedness of functional structures given in 2.2.6, together with a convention on agreement discussed in Chapter 3 filter out most ungrammatical structures. This free assignment of grammatical functions is part of what makes Warlpiri a non-configurational

language.[10] With a couple of additional assumptions, free assignment can also extend to cover the existence of *discontinuous nominal expressions*, as I will show in Chapter 4.

2.2.2 Morphological information

Categorial and constituent-structure information about grammatical functions in simple sentences was discussed in the previous section. This section examines other kinds of information provided by the lexicon. When lexical items are inserted under the preterminal nodes of a c-structure tree, they bring with them *morphological information*, and *semantic information*. Aside from *categorial information*, which has already been discussed, the morphological information consists of *features* such as CASE, TENSE, NUMBER etc,[11] and also of *functional* information. This information may be derived from the *root* (for example, *people* has the feature PLURAL), or from an *affix* (the information that *books* is PLURAL comes from the plural affix *s*, and, similarly, the information that the SUBJECT's NUMBER is SINGULAR, and its PERSON THIRD, comes from the affix *s* attached to verbs, as in *gives*). A fundamental hypothesis of both LFG and LPM is that all inflection is done prior to lexical insertion. Therefore the plural morpheme is attached to

---

10. My approach differs from that given in Bresnan (1982a). Bresnan adopts syntactic grammatical function assignment rules which link *case-marking* to grammatical functions. In order to account for grammatical functions expressed by null pronominals rather than by overt case-marked nominals, I have adopted the general rule of free assignment of grammatical function.

Free assignment of grammatical function is essentially what underlies Chomsky's (1981) account of Japanese, where he proposes a rule *Asssume grammatical function* to express grammatical function changing rules, where grammatical functions are not defined configurationally. See Hale (to appear) for an adaptation of Chomsky's proposal to Warlpiri.

11. These features are *syntactically relevant* features, and they do not always coincide with the corresponding semantic descriptions. For instance the English word *crowd* is semantically a plurality, but it can be syntactically singular, as number agreement shows: *The crowd has gathered. ?The crowd have gathered.*

It is NOT a tenet of LFG theory that the meaning of the word *'I'* consists in a feature matrix with such 'Markerese' features as semantic primitives. The importance of these features lies in their usefulness for capturing syntactic generalizations.

book in the morphology, and, upon lexical insertion, the word *books* already has the feature [plural].

Syntactically relevant features such as [plural] are called *functional features*, and the set of such features is assumed to form a restricted universal set. It is further assumed (Kaplan and Bresnan, 1980: 12) that these functional feature equations are associated with the categorial label of a lexical item in the morphology. By convention, functional features are attached in c-structure to the node immediately dominating that lexical item. That is, if a lexical item has the category N in the lexicon, it is inserted under a node N in the c-structure, and equations such as (↑CASE) = ABSOLUTIVE are attached to that node N.

In (18), I give the features for the words in the sentence *Ngaju karna parnkami* which are provided by their lexical entries. The values that I have assigned to the features CASE etc. are probably further analysable into distinctive features.[12] Similarly, the PERSON feature of 1st person is decomposable into something like [+ Speaker − Hearer], and the NUMBER feature is perhaps decomposable into [− pl +sg] or else [− pl −du]. Instead of saying (↑NUM) = sg, one could say (↑NUM) = [− pl + sg]. That these features are syntactically relevant is shown in Hale (1972). Hale discusses coordination of nominals of different persons and numbers, and shows that the AUX agrees with a *consistent intersection* of the features of the conjoined nominals, where these features include the equivalents of Speaker and Hearer.

(18) **Lexical Entries for the sentence:** *Ngaju karna parnkami*

Ngaju has the features:	(↑CASE) = **ABS** (read as *mother's case is ABS*)
	(↑PERS) = **1** (*mother's person = 1*)
	(↑NUM) = **sg** (*mother's number = sg*)

For the N *ngaju*, the 'mother' node is the $\overline{N}$ which dominates it.

---

12. Neidle (1982) uses Jakobson's decomposition of the Russian case system into case features to make some interesting generalizations about the syntax of case in Russian.

Parnkami has the features: (↑TENSE) = non-past (*mother's tense is non-past*)
(↑FINITE) = + (*mother is* [+ *FINITE*])

For the V *parnkami*, the 'mother' node is the $\bar{V}$ which dominates it.

Ka has the feature: ↑ASP = **present imperfect**
(*mother's aspect is present imperfect*)

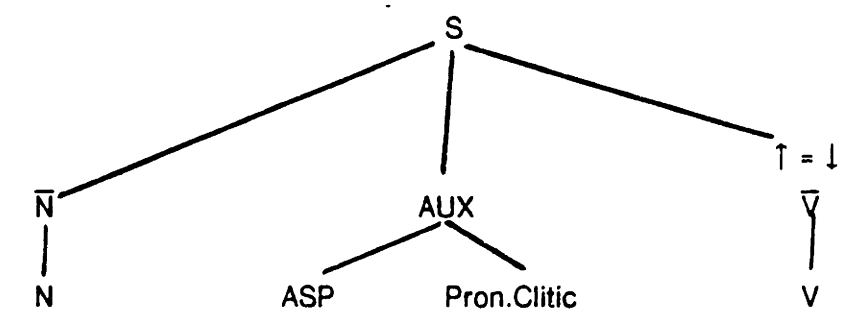
rna has the features: (↑SUBJ PERS) = 1 (*mother's SUBJECT's person = 1*)
(↑SUBJ NUM) = **sg** (*mother's SUBJECT's number = sg*)

The 'mother' node for both *rna* and *ka* is the AUX node.

Observe that I have included information about the SUBJECT as part of the lexical entry of the pronominal clitic *rna*. That is, I am claiming that part of the meaning of the pronominal clitic *rna* is that it has to represent a SUBJECT. In 2.3.4, I will elaborate on this incorporation of functional information into lexical entries.

In (19), I give an abbreviated annotated c-structure tree for the sentence *Ngaju ka-rna parnkami* 'I am running.'

(19) **C-structure 3 for (1)**



2.2.3 Semantic information

The lexical entry for a word provides not only *morphological information* but also *lexical semantic information*. Semantic information includes information about whether an element is an argument, an argument-taking predicate, or a sentence operator.[13] It also includes information about the type of arguments an argument-taking predicate takes. In this section I will show how semantic information is represented in LFG.

Information about arguments and argument-taking predicates (in particular, their argument-structure and the grammatical functions assigned to the arguments) is provided by the *lexical form* of the lexical entry. Each lexical entry is represented as an equation giving a value (the lexical form) to a functional feature, the predicate functional feature (PRED). The PRED functional feature is technically the same kind of entity as the CASE, TENSE, NUMBER etc. functional features. The difference is that, while the values of CASE, TENSE, NUMBER etc are *symbols*, the value of PRED is a *lexical form*.

The PRED feature equations for *ngaju* and *parnkami* follow:

ngaju: (↑PRED) = 'I'[14]

parnkami: (↑PRED) = 'parnkami' < (SUBJ) >

runner

13. Sentence operators include elements such as quantifiers. I will not be discussing sentence operators in this thesis.

14. One could also claim that the PRED feature for a pronoun such as *ngaju* is just 'PRO', where 'PRO' stands for the property of being dependent on context for reference, apart from the features of person, number, and perhaps animacy. The referent of a definite noun-phrase such as *the possum* is dependent on context, but also contributes the information that the referent is a possum. However, if Wierzbicka (1980) is correct, the meaning of words such as *I* and *you* is not decomposable even into such features as Speaker and Hearer. Therefore it seems advisable not to reduce the semantic form of an overt pronominal such as *ngaju* to the bare statement that its referent is dependent on context. anaphor.

The entry for *parnkami* given here indicates that it is a one-place predicate, whose single argument *runner* has the grammatical function SUBJECT. The semantic form (meaning) is given in quotations to indicate that it stands for some definition or decomposition. Within the lexicon, there are principles for relating the meanings of argument-taking predicates to their arguments.

For instance, consider the dictionary entry for one meaning of *parnkami* 'run' (adapted from an entry given in *The Warlpiri Dictionary* (June 1982 version)):

X *moves rapidly along a* **path** *beginning at one* **place** *and ending at another* **place.**

Variables in the definition represent arguments of the verb. Since the definition has only one variable, this meaning of *parnkami* is a one-place predicate. *Constants* in the definition (e.g. *path, place*) represent general arguments common to a particular class of verbs. (It is implicit in the meaning of a verb of motion such as *run* that one moves from one place to another, and that one follows a path in doing so.)[15]

The lexical entry pairs the argument **X** with the grammatical function SUBJECT. The constants may be expressed by ADJUNCTs. The exact representation of the relation between dictionary entries, and subcategorization frames, is debateable, especially where optional arguments are involved. In this thesis I will not spell out dictionary entries in lexical forms. I will simply use *parnkami*, or *run* instead, and I will assume that principles can be found associating meanings (as represented by the dictionary entry) and subcategorization frames.

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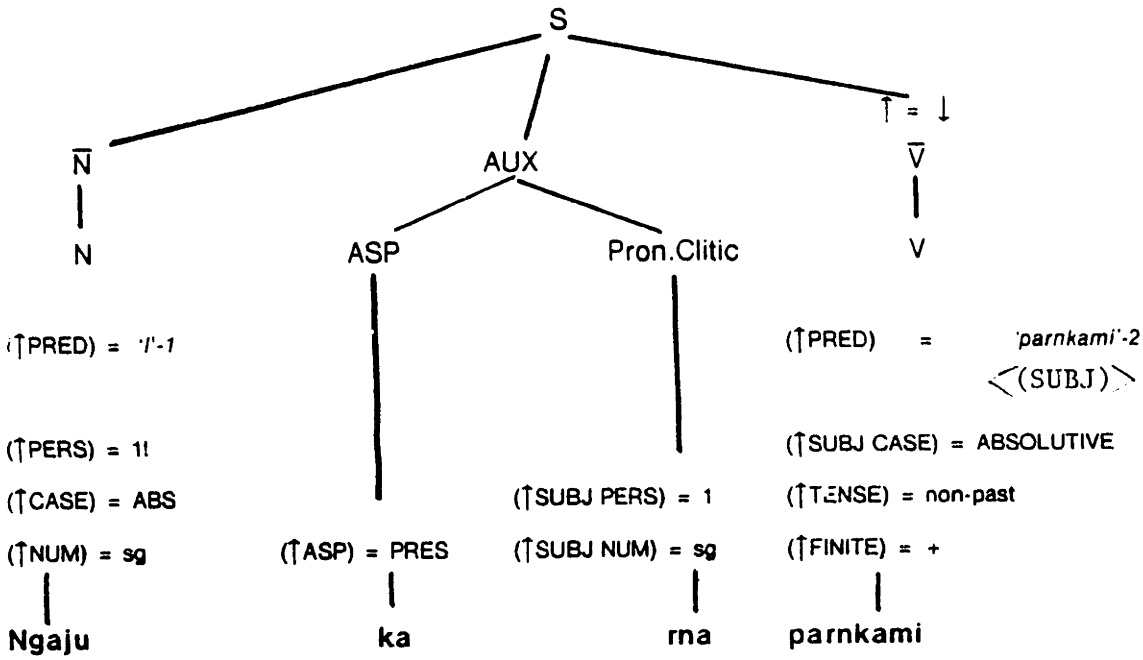
15. *Run* differs from verbs such as *arrive* and *come*. *Run* focusses on the manner of motion, and so the source and end-point are constants. *Arrive* and *come* focus on the end-point, which is, I assume an argument of the verb. See 3.4.1.

Equations with the PRED feature are treated like equations with the CASE or NUMBER feature, and will be inserted in the c-structure tree accordingly. However they differ from features such as NUMBER and CASE in one important respect. Each instance of a PRED feature equation is unique and must be differentiated, whereas instances of a NUMBER symbol do not have to be distinguished. This amounts to saying that a lexical entry is a unique item, while the value for a feature such as CASE is not. The value for a feature can be given in many places. For instance, in English, information about the SUBJECT's NUMBER is provided both on the SUBJECT and on the VERB: *The man loves possums*. But the dictionary entry for the PRED feature can only be given in one place: **The man loves possums, the men.*[16] This difference between PRED feature equations and CASE feature equations is marked by *indexing* each instance of a PRED feature equation in a c-structure tree. Values for features such as CASE and NUMBER are not indexed.

Annotated with both the indexed PRED functional feature equations and the CASE, TENSE, NUMBER, ASPECT, PERSON, FINITE functional features, the tree is as follows:

16. I ignore appositional uses here.

(20) C-structure 4 for (1)



(In future I will only label PRED features with indices where essential).

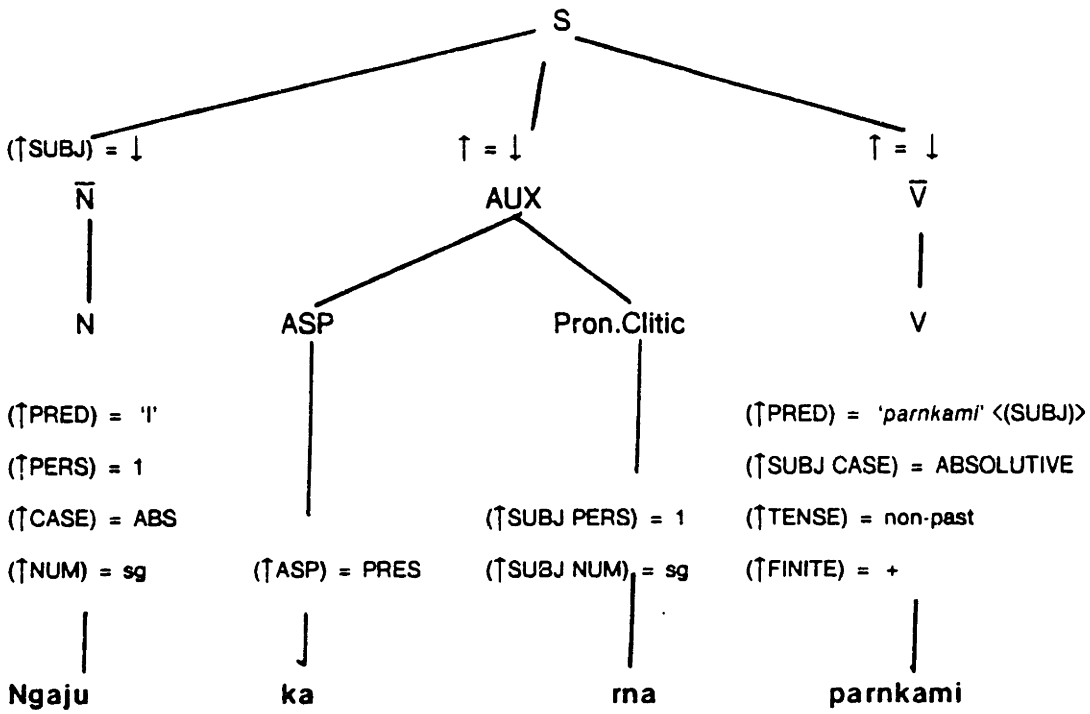
2.2.4 Assigning other functions

The only information lacking in the annotated c-structure tree concerns the function of the AUX. The AUX provides information about the ASPECT of the sentence, and about its SUBJECT. The AUX can also provide information about other arguments of the predicate, as well as about the sentence's modality (negation, hypotheticality, counter-factual etc), as in (21).

(21) Wati *kula*-ka wangka-mi.
man-ABS not-PRES speak-NPST
The man is not speaking.

In other words, information about the AUX is information about the sentence. For it to be represented as such, the AUX must also have the equation ↑ = ↓. The rule freely assigning ↑ = ↓ will assign the AUX ↑ = ↓. The conditions on the well-formedness of f-structures to be described in 2.2.6 preclude the assignment of any other function to the AUX. The fully annotated c-structure tree for the sentence *Ngaju ka-rna parnkami* follows.

(22) **C-structure 5 for (1)**



Observe the importance of distinguishing between saying that a node *is* the SUBJECT, and that a node *carries information about* the SUBJECT. The N̄ dominating *ngaju* has the equation (↑SUBJ) = ↓ attached, while the pronominal clitic *rna* has referring to the SUBJECT's person and number. But this does not mean that the sentence has two SUBJECTs. Instead, it means that information about the SUBJECT of the sentence comes from two places, the pronominal clitic and the nominal. This distinction will be crucial in the account of case-suffixes in Chapter 3, where I will argue that a single

word can contain information about two different functions.

Using equations such as (↑SUBJ) = ↓ rather than simply labelling a node SUBJECT helps to keep this distinction clear . However, as Grimshaw (1980) points out, using ↑ and ↓ arrows is largely redundant:

i. Only ↑ arrows appear in lexical entries, because information about a word is always passed up.
ii. Equations referring to grammatical functions state that 'ego' provides information about a particular grammatical function with respect to 'mother', and so always have the form ↑G (FEATURE) = ↓.

I will show in Chapter 3 that convention i. is not completely tenable; occasionally it is necessary to block feature percolation. However, I accept her general point. I will assume that readers are now aware that labelling a node SUBJECT simply means that the node carries information about the SUBJECT. In future I will only use ↑ and ↓ arrows where necessary, as in general they detract from readability.

2.2.5 **Building an f-structure**

We now have all the information necessary for interpreting the sentence, and for working out the relation between the argument-taking predicate and its arguments. However, the information is scattered among the nodes of the trees. It has to be collected and organized, so as to create a form which semantic interpretation rules can take as input. This form is the *functional structure* (f-structure) of the sentence. The f-structure expresses meaningful grammatical relations and acts as input for semantic interpretation.

The functional structure is derived formally from the annotated constituent structure by means of an algorithm for solving the equations on the annotated c-structure tree. This algorithm is given in Kaplan and Bresnan (1980). I will not give it here, but will instead build functional structures informally.

A functional structure is represented as a set of ordered pairs, each of which consists of the *name* of a grammatical function or function feature (such as PRED, SUBJ, CASE...) paired with a *value* for that grammatical function or function feature. Values are of four types:

(23) **Value-types of functions and functional features**

		function/ feature	**value**
1.	*symbols*:	CASE =	**ABSOLUTIVE**
2.	*lexical forms*:	PRED =	*'PRO'*
3.	*subsidiary f-structures* These allow recursive embedding.	SUBJ	[CASE = **ABS** NUM = **sg** PERS = **3** PRED = *'PRO'*]
4.	*sets of symbols. or f-structures* The internal f-structures are abbreviated.	ADJ	{ [PRED = *'yesterday'*] [PRED = *'with'* <(OBJECT)> OBJECT *'pleasure'*] [PRED = *'in'* <(OBJECT)> OBJECT *'the garden'*] }

This f-structure represents the set of ADJUNCTs in the English sentence *Yesterday, Lucy kissed John with pleasure in the garden*. Since the function ADJUNCT can be evaluated by a *set* of f-structures, rather than a unique f-structure, formally, an ADJUNCT argument should not be assigned an *equality* equation (↑ADJ) = ↓, but rather an *inclusion* equation which expresses this set relation: ↓ ∈ (↑ADJUNCTS).

I will now show how to build an f-structure from the annotated c-structure tree (22). Let us start from the top left of the tree, for convenience. The equation (↑SUBJ) = ↓ attached to $\overline{N}$ gives the information that the sentence has a SUBJECT, and that this SUBJECT is the $\overline{N}$. The equations attached to N give more information about that SUBJECT. This is expressed in the f-structure as follows:

$$\begin{bmatrix} \text{SUBJ} \begin{bmatrix} \text{CASE} = \textbf{ABS} \\ \text{PERS} = 1 \\ \text{NUM} = \textbf{sg} \\ \text{PRED} = \text{'}I\text{'} \end{bmatrix} \end{bmatrix}$$

The next element in the tree is the AUX. It has been assigned the equation ↑ = ↓. So, features of the AUX are features of the whole sentence. Thus, the ASPECT is interpreted as the ASPECT of the sentence. The pronominal clitic *rna* provides PERSON and NUMBER information about the SUBJECT of the AUX. By virtue of the equation ↑ = ↓ assigned to the AUX, the SUBJECT of the AUX is the SUBJECT of the sentence. The PERSON and NUMBER information given by *rna* agrees with the PERSON and NUMBER information provided by the nominal *ngaju*. With the addition of the AUX information, the f-structure is as follows:

$$\begin{bmatrix} \text{ASP} = \textbf{present imperfect} \\ \text{SUBJ} \begin{bmatrix} \text{CASE} = \textbf{ABS} \\ \text{PERS} = 1 \\ \text{NUM} = \textbf{sg} \\ \text{PRED} = \text{'}I\text{'} \end{bmatrix} \end{bmatrix}$$

The SUBJECT function is represented by a subsidiary f-structure (in square brackets), whereas the ASPECT feature is represented by a symbol (in bold-face) **present imperfect.**

The next element in the tree is $\bar{V}$. Like the AUX, $\bar{V}$ has been assigned the equation $\uparrow = \downarrow$. So, all the features and properties of $\bar{V}$ are features and properties of S. $\bar{V}$'s PRED, FINITE and TENSE are the PRED, TENSE and FINITE features of the sentence. The $\bar{V}$ provides the information about the CASE of the SUBJECT that it is ABSOLUTIVE. This agrees with the information already provided by *ngaju*. The information given by the annotations on $\bar{V}$, completes the functional structure for the sentence.

(24) **Functional structure for (1)**

$$\begin{bmatrix} \text{PRED} = & \textit{run} \langle(\text{SUBJ})\rangle \\ \text{TENSE} = & \textbf{non-past} \\ \text{FINITE} = & + \\ \text{ASP} = & \textbf{present imperfect} \\ \text{SUBJ} & \begin{bmatrix} \text{CASE} = \textbf{ABS} \\ \text{PERS} = \textbf{1} \\ \text{NUM} = \textbf{sg} \\ \text{PRED} = \textit{'I'} \end{bmatrix} \end{bmatrix}$$

2.2.6 Constraints on f-structures

The system described above of building c-structure trees, annotating them with functional equations, and then building functional structures, could, unconstrained, result in a large number of ungrammatical sentences. For example, free assignment of equations such as $\uparrow = \downarrow$ and $(\uparrow\text{OBJ}) = \downarrow$ could result in assigning *ngaju* the equation $(\uparrow\text{OBJ}) = \downarrow$ in the sentence:

(25) Ngaju ka-rna parnka-mi.
I PRES-1sg run-NPST
I am running.

However, the PRED of the sentence, *parnkami*, selects only a SUBJECT. Under this assignment of functions, (25) has an extraneous OBJECT which has no PRED form. Additional constraints are needed to rule out such impossible interpretations.

There are two types of constraint: general constraints and particular constraints.

2.2.6.1 General constraints on f-structures

The general constraints on f-structures are basically a matter of common sense. There are three principal constraints, *consistency, completeness* and *coherence*. *Consistency* prevents an f-structure from containing conflicting information; *completeness* ensures that everything which has to be present is present; *coherence* ensures that nothing is present which cannot be interpreted.

2.2.6.1.1 Consistency

Consistency is a generalization of the *Functional Uniqueness Hypothesis* introduced in 1.3.1.1.

Principle 7: Consistency

Every grammatical function and every functional feature must have a unique value.

For grammatical functions, this means that there cannot be, say two SUBJECTs in a sentence, or more controversially (see Chapter 1, Footnote 2?) two OBJECTs. This rules out sentences such as (26).

(26) *Wati ka parnka-mi karnta.
Man-ABS PRES run-NPST woman-ABS
*The man runs the woman.

Two nominals are competing for SUBJECT function.[17]

For functional features such as CASE, TENSE, PERSON, *consistency* prevents the same feature, say the SUBJECT's PERSON feature, from being assigned two different values. This rules out (27), in which the AUX provides the information that the SUBJECT is first person, while the overt nominal is a second person pronoun.

(27) *Nyuntu ka-rna parnka-mi.
You-ABS PRES-1sg run-NPST
You I run.

For the functional feature PRED, *consistency* precludes the assignment of more than one lexical form to the same function. That is, although the information about the SUBJECT's Person can come from several different sources, information about the SUBJECT's PRED can be given only once.

Consider the following sentence:

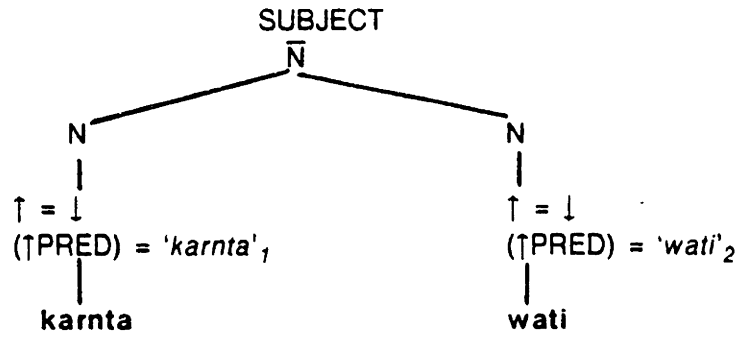
(28) *Karnta wati ka parnka-mi.
Woman-ABS man-ABS PRES run-NPST
Woman man runs.

Assume later, that *karnta wati* has to be an $\overline{N}$ (see 2.5.1), and that this $\overline{N}$ is assigned the function SUBJECT. Assume also that both *karnta* and *wati* are assigned the equation $\uparrow = \downarrow$ within $\overline{N}$, and that both have PRED features. The constituent structure for the $\overline{N}$ is as follows:

---

17. *Karnta* might act as a predicate modifying *wati* under rather strange circumstances: *Wati ka parnkami karnta + lku*, 'The man runs now a woman'. (*lku* is a clitic meaning 'now, then'.) But in this case the function SUBJECT does not have two conflicting PREDS, because one PRED represents the lexical form of the SUBJECT, and the other represents the lexical form of an ADJUNCT attributing a property to the SUBJECT.

(29)



The corresponding functional structure has two competing PREDs, and so is inconsistent. The f-structures for (26) and (28) are identical, because the information about a grammatical function such as SUBJECT, say, is gathered together in one subsidiary f-structure. The inconsistent f-structure is given in (30).

(30) *

$$\begin{bmatrix} \text{ASP} = \text{PRES} \\ \text{TENSE} = \textbf{non-past} \\ \text{PRED} = \textit{'parnkami'} \langle(\text{SUBJ})\rangle \\ \text{SUBJ} \begin{bmatrix} \text{PRED} = \textit{'karnta'} \\ \text{PRED} = \textit{'wati'} \\ \text{NUM} = \textbf{sg} \\ \text{PERS} = \textbf{3} \\ \text{CASE} = \textbf{ABS} \end{bmatrix} \end{bmatrix}$$

One further comment on the application of *consistency* to the PRED feature is necessary. If two different sources provide the same lexical form for the PRED, the f-structure is still ill-formed. (31) illlustrates this.

(31) *Karnta karnta ka parnka-mi.
woman-ABS woman-ABS PRES run-NPST
*Woman woman runs.

Since every lexical form receives a unique index each time it occurs in the annotated c-structure tree (as I mentioned in 2.2.3), the two instances of *karnta* in (31) will each

receive a different index. Therefore, the function SUBJECT in (31) will have two different PREDs, and the f-structure will violate *consistency*. Features such as CASE and NUMBER whose values are *symbols* can agree. The PRED feature has a lexical form as its value, and cannot agree.

Consistency acts as a filter on free assignment of grammatical functions in Warlpiri. If ↑ = ↓ is assigned to two items, each of which has its own own PRED feature, *consistency* is violated, because then the f-structure containing both items to which ↑ = ↓ has been assigned will have two PREDs. Thus, if both a V and an N are assigned the equation ↑ = ↓ the sentence will have two matrix predicates.[18] However, since the AUX does not have a PRED feature of its own, the AUX can be assigned the equation ↑ = ↓. *Consistency* ensures that the equation ↑ = ↓ can only be assigned to one element with a lexical form, while it can be assigned to other elements without lexical forms, such as the AUX.

2.2.6.1.2 Completeness

Completeness is a condition which ensures that every grammatical function selected by some PRED (every grammatical function paired with an argument of some argument-taking predicate) is actually realized in the f-structure.

Principle 8: Completeness

If a grammatical function is obligatorily selected by the argument-taking predicate of an f-structure, it must appear in that f-structure.[19]

---

18. Of course *coordination* structures have to be accounted for also, since two coordinated finite verbs both have PREDs, but do not violate *consistency*. Coordination represents a problem well beyond the scope of this thesis. See Andrews (1981) and Peterson (1981b) for attempts to describe it within LFG.

19. For a more formal definition, see Kaplan & Bresnan (1980: 36)

The role of *completeness* is readily apparent in English. Consider the sentence: **Ran.* This has no overt SUBJECT, and yet the verb *run* selects a SUBJECT. The f-structure of this sentence is incomplete. The role of *completeness* is not so apparent in Warlpiri, because Warlpiri allows subcategorized grammatical functions to be expressed by null pronominals. For instance, a SUBJECT need not be overtly expressed by a nominal. So the Warlpiri equivalent, *Parnka-ja* 'run-PAST', is acceptable, because it can have a null pronominal SUBJECT. Nevertheless, there are violations of *completeness* in Warlpiri, as (32) through (34) illustrate.

(32) Rdanpa-rni ka-rna-rla ngaju wati-ki
Accompanv-NPST PRES-1sg-DAT I-ABS man-DAT
I accompany the man.

(33) Rdanpa-rni ka-rna-rla ngaju
accompany-NPST PRES-1sg-DAT -ABS
I accompany him.

(34) *Rdanpa-rni ka-rna ngaju
accompany-NPST PRES-1sg I-ABS
I accompany.

The verb *rdanparni* requires a DATIVE OBJECT. (32) is acceptable because the DATIVE OBJECT is overtly expressed. (33) is acceptable because, although the DATIVE OBJECT is not overtly expressed, it is registered in the AUXILIARY. (34) is ruled out by *completeness* because there is no overt DATIVE OBJECT and no registration of a DATIVE OBJECT in the AUX.

2.2.6.1.3 **Coherence**

A functional structure is *coherent* if it contains no extraneous grammatical functions.

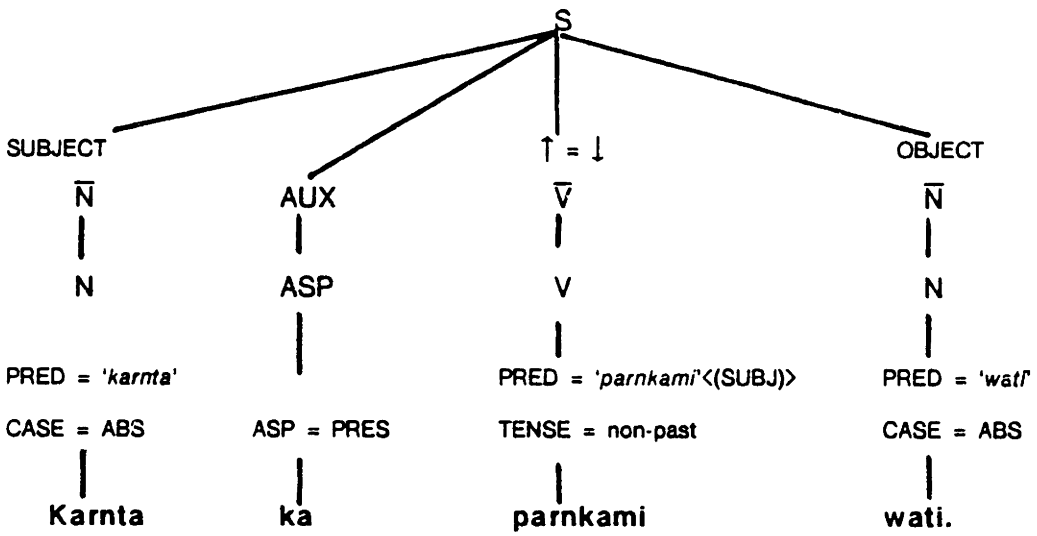
Principle 9: Coherence

If a subcategorizing grammatical function appears as an attribute of a member of an f-structure, the PRED of the f-structure must be subcategorized for that

grammatical function.

Consider the simplified tree given in (35). An ABSOLUTIVE case-marked nominal appears, and is assigned the function (↑OBJ) = ↓, but the verb *parnkami* 'run' is not subcategorized for an OBJECT.

(35)



The woman ran the man

Because there is an OBJECT present, and the PRED of the f-structure built from this tree does not contain an OBJECT, the f-structure violates *coherence*, and is ruled out, as in (36).

(36)

*

$$\begin{bmatrix} \text{ASP} = \textbf{PRES} \\ \\ \text{TENSE} = \textbf{non-past} \\ \\ \text{PRED} = \textit{'parnkami'}\langle(\text{SUBJ})\rangle \\ \\ \text{SUBJ}\begin{bmatrix} \text{PRED} = \textit{'karnta'} \\ \text{NUM} = \textbf{sg} \\ \text{PERS} = 3 \\ \text{CASE} = \text{ABS} \end{bmatrix} \\ \\ \text{OBJ} \quad \text{PRED} = \textit{'wati'} \end{bmatrix}$$

To sum up the effects of the three general conditions on f-structures: *Completeness* ensures that every obligatorily selected grammatical function is expressed. *Coherence* ensures that there are no extraneous grammatical functions. *Consistency* ensures that grammatical functions and features do not have conflicting values. As Hale (to appear) points out, these conditions act as filters reducing the overgeneration resulting from free assignment of grammatical functions within Warlpiri.

There is one final general constraint to be discussed. This is not a constraint on functional structures as such, but rather on the form of functional equations, **Functional locality.**

Principle 10: Functional locality

For human languages, designators in functional equations may specify no more than two function-applications. (Kaplan & Bresnan (1982: p.278))

This principle limits the context over which functional properties may be explicitly referred to. For instance, a functional equation may state ↑*XCOMP SUBJ* = ↑*SUBJ*, because there are no more than two functional applications on either side of the equation. But it may not state ↑*XCOMP SUBJ ADJ SUBJ* = ↑ *SUBJ*, because there are more than two functions or features named on the left side of the equation. *Functional locality* is intended to capture the intuition that languages do not have long-distance dependencies that extend down more than one clause-nucleus deep (with the exception of *unbounded* long-distance dependencies, as in WH-movement).

2.2.6.2 **Particular constraints on f-structures**

As well as the general constraints on f-structures, there are language-particular constraints. These are represented as *constraint equations*, which, like functional equations such as (↑CASE) = ABS, attach either to particular morphemes, or to positions in the phrase structure expansion, or can generalize over the whole phrase structure rule. These constraint equations are used to ensure the presence of particular morphemes in sentences, to determine agreement processes, and numerous other language-particular constraints on the grammaticality of a sentence.

For instance, in Warlpiri the Aspect marker *ka* can only appear if the verb has non-past tense. (37) shows a well-formed sentence, and (38) an ill-formed sentence.

(37) Ngaju ka-rna parnka-mi.
I-ABS PRES-1sg run-NPST
I am running.

(38) *Ngaju ka-rna parnka-ja.
I-ABS PRES-1sg run-PAST
I was ran.

This constraint equation can be attached to the lexical entry of the morpheme *ka*:

ka
ASPECT = Present imperfect
TENSE $=_c$ Non-past

The first equation is a *defining* functional equation; the second equation is a *constraint* equation. The defining equation introduces a value. The constraint equation does not introduce a value, but demands that something else in the sentence introduce a particular value. By convention, a constraint equation with an equality symbol requires, not only that the value of the feature be whatever it is said to be (*non-past* in this example), but also that the feature be present. Thus if *ka* is present, the matrix predicate must have the right tense marker. The constraint equation is not satisfied if there is no tense marker. Therefore *ka* cannot appear in non-finite clauses or nominal-headed clauses in which there is no tense marker. A sentence such as (39) which has a nominal head *ngurrpa* 'ignorant' is ruled out.

(39) *Ngaju ka-rna ngurrpa.
I-ABS PRES-1sg ignorant
I am ignorant.

See 2.4.2 for more discussion of the dependency. Another example of constraint equations is given in 2.3.1.2. in the disucssion of the *Conative* lexical rule.

Another type of constraint equation is an *existential* constraint equation. An existential constraint equation does not involve the value of a particular feature or function; it is simply concerned with whether or not a given feature exists. For example, in English, a matrix clause has the annotation (↑ TENSE). This means that a matrix sentence must have a tense-marker. It does not matter what the value of the TENSE is, so long as there is a tense-marker.

I have now shown how to build a constituent structure tree and a functional structure for a simple intransitive sentence. In doing so, I have given an account of how the information from the phrase structure and the lexicon is expressed in the c-structure tree. I have also described some of the constraints on building an f-structure from an annotated c-structure tree. In the next few sections, I will discuss more complex sentences, gradually introducing new aspects of the LFG system, as well as showing areas that need further research. Before doing so, however, I will summarize the principles and constraints that I have introduced so far.

2.2.7 Summary of principles and constraints

First. there are two important constraints on the relation of predicate-argument structures and grammatical functions, introduced in 1.3.1.1.

Principle 1: Selection for function

Argument-taking predicates are subcategorized for grammatical functions, not for categories.

Principle 3: Bi-uniqueness

Each argument of an argument-taking predicate must be assigned a unique grammatical function, and no grammatical function can be assigned to more than one argument.

Second, there are constraints on constituent-structures, one on the interaction of morphology and syntax, introduced in 1.3.3, one preventing c-structure processes from changing grammatical functions, introduced in 1.3.2, and one on admissible terminal elements, introduced in 1.3.4.2.

Principle 4: The Principle of Direct Syntactic Encoding

Every non-lexical rule of grammar must preserve the assignment of grammatical functions. [Bresnan, 1980b: 5]

Principle 5: Lexical Integrity Hypothesis

Constituent-structure processes (which include annotation of functional information, and indexing of anaphoric information) are blind to the internal structure of words.

Principle 6: The Null-Element Constraint

A non-terminal category cannot exhaustively dominate the empty string *e*, except in the case of constituent control, where constituent control is the long-distance dependency characterizing wh-movement and similar

constructions.

Principle 6 will be revised in 2.3.4.1.3.

Third, there are three general constraints on the well-formedness of functional structures, introduced in 2.2.6.1.1, 2.2.6.1.2, and 2.2.6.1.3 respectively.

Principle 7: Consistency

Every grammatical function and every functional feature must have a unique value.

Principle 8: Completeness

If a grammatical function is obligatorily selected by the argument-taking predicate of an f-structure, it must appear in that f-structure.

Principle 9: Coherence

If a subcategorizing grammatical function appears as an attribute of a member of an f-structure, the PRED of the f-structure must be subcategorized for that grammatical function.

Fourth, there is a constraint on the form of functional equations.

Principle 10: Functional locality

For human languages, designators in functional equations may specify no more than two function-applications. (Kaplan & Bresnan (1982: p.278))

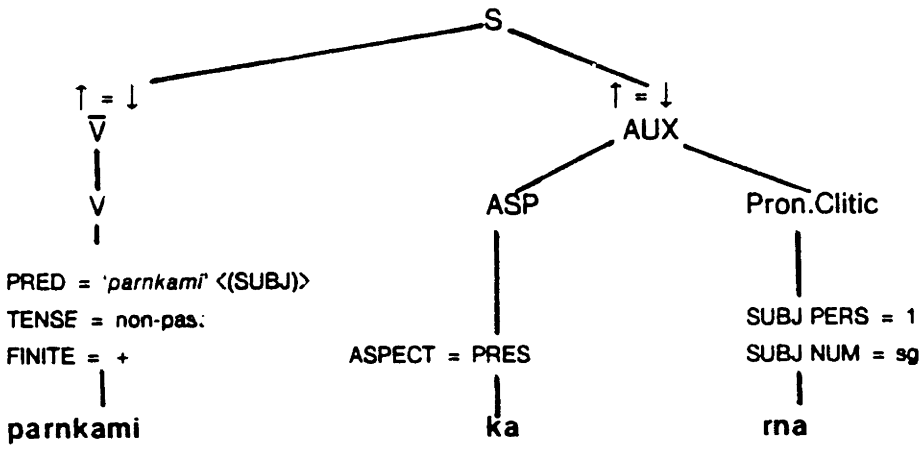
2.2.8 Introduction of PRO

Consider the following intransitive sentence:

(40) Parnka-rni ka-rna.
Run-NPST PRES-1sg
I run.

(40) differs from the sentence discussed in the last section (*Ngaju ka-rna parnkami*) only in the absence of the pronoun *ngaju*. The annotated c-structure tree follows in (41).

(41) **C-structure for (40).**



As it stands, any f-structure built from this tree is incomplete, because there is no lexical form for the SUBJECT, while the verb demands a SUBJECT, and the AUX provides information about the SUBJECT's PERSON and NUMBER. The equivalent sentence is of course ungrammatical in English. But in Warlpiri, it is a perfectly acceptable sentence. The SUBJECT is understood to be a null pronominal referring to the speaker. Therefore there must be some way of introducing a null pronominal for the SUBJECT in such sentences, that is, of introducing a PRED feature for the SUBJECT.

There are at least two ways of introducing this null pronominal. The first is to follow the Grimshaw (1980)/Montalbetti (1981) account of Romance clitics, and say that the pronominal clitics in the AUX are meaningful. The pronominal clitic provides information about the SUBJECT's person and number. Suppose it also has a PRED feature which introduces a lexical form for the SUBJECT. The lexical form will be a pronoun '*PRO*'. The other choice is to adopt the account of the IMPERATIVE given in Kaplan and Bresnan

(1980), whereby a null SUBJECT pronominal is introduced by IMPERATIVE verbs.[20] That is, generally in Warlpiri the lexical entry for the verb will carry optional equations (↑SUBJ PRED) = '*PRO*', (↑OBJ PRED) = '*PRO*' etc.

The difference is between treating the pronominal clitic *rna* as a pronominal clitic like the French pronominal clitics which have their own lexical forms, and treating *rna* as an agreement marker, such as the person-number marking on verbs in Russian. I claim that in Warlpiri the verb introduces (↑G PRED) = '*PRO*' for the grammatical functions it selects (it obviously cannot introduce these equations for non-selected grammatical functions, because these do not appear in the lexical entry for the verb). I will extend this later to all argument-taking predicates, and this will provide the basis for my analysis of control and predication in Warlpiri.

The first argument for having the verb introduce the (↑PRED) = '*PRO*' equations is that need not be an overt pronominal clitic in the AUX; the absence of a clitic is interpreted as a third person singular definite pronoun. The second argument is that it simplifies the account of null pronominals in non-finite clauses. In non-finite clauses, selected grammatical functions can be represented by null pronominals, just as they can be in finite clauses. But there are no AUXs in non-finite clauses. If the AUX pronominal clitics introduced the null pronominals for finite clauses, a different mechanism would be needed to introduce the null pronominals in non-finite clauses. It appears simpler to have the (↑G PRED) = '*PRO*' equations introduced by the same mechanism, namely the verb, for both finite and non-finite clauses.

---

20. Kaplan and Bresnan (1980) allowed the attachment of the equation (↑SUBJ PRED) = 'YOU' to the verb as an alternative expansion of S for imperatives:

$$
\begin{array}{lll}
S & \rightarrow & VP \\
 & & \uparrow = \downarrow \\
 & & (\uparrow INF) =_c + \\
 & & (\uparrow SUBJ\ PRED) = \text{'}PRO\text{'} \\
 & & (\uparrow SUBJ\ PERS) = 2
\end{array}
$$

However, in recent work (Halvorsen (to appear), Bresnan (1982)) it is assumed that lexical forms must be introduced lexically. So the (↑SUBJ PRED) = 'YOU' equation must be introduced together with the IMPERATIVE inflection.

Below, I illustrate this ability for null pronominals to appear in non-finite clauses in some detail, because the status and properties of null pronominals are an issue of concern not only for LFG, but also for Government-Binding theory.

First, consider the sentence in (42).

(42) Japanangka karlarra-jarri-ja *Jupurrula* *nya-nja-ku.*
Japanangka-ABS west-INCH-PAST Jupurrula see-INF-DAT
Japanangka went west.. [Nash, p.c.]

This sentence has a non-finite clause *nyanjaku* "to see". David Nash informs me that a linguistically sophisticated speaker, when confronted with this sentence, considered that the following interpretations are possible.

i. Japanangka went west [to see Jupurrula]

ii. Japanangka$_i$ went west [for Jupurrula$_j$ to see PRO = himself$_j$]

iii. Japanangka$_i$ went west [for Jupurrula$_j$ to see PRO = him$_i$]

iv. Japanangka$_i$ went west [for Jupurrula$_j$ to see PRO = him$_k$]

Reading i. can be blocked by giving 'Jupurrula' ERGATIVE case, thus forcing it to be construed as the SUBJECT of the non-finite clause [21] Further examples of null pronominals in non-finite clauses follow.

(43) Wangka-ja -rna-rla kuyu-ku yi-nja-ku.
speak-PAST -1sg-DAT meat-DAT give-INF-DAT
I$_i$ asked him$_k$ for meat$_j$ PRO$_k$ to give PRO$_i$ PRO$_j$. [wangkami]
= I asked him to give me meat.

(44) Japanangka-rlu ka-rla karli-ki jaala-nya-nyi
Japanangka-ERG PRES-DAT boomerang-DAT back.and.forth-see-NPST

---

21. The fact that the SUBJECT of a non-finite verb need not have ERGATIVE case, as in the examples given, is a problem for my account of null pronominals. See Chapter 6.

kuja kiji-rninja-rla waja-wajama-nu.
REL throw-INF-SEQ lose-PAST
Japanangka$_i$ is going back and forth looking for the boomerang$_j$, that after throwing PRO$_j$, PRO$_i$ lost PRO$_j$.' [jaala-nyanyi]
= ..that after throwing he lost.

(45) Ngurlu lukarrara yurrpa-rninja-rla kala-lu yapa-ngku
seed lukarrara-ABS grind-INF-SEQ USIT-3pl person-ERG
purra-ja pirdijirri – – *nga-rninja-ku + ju.*
cook-PAST seed.cake-ABS eat-INF-DAT + EUPH
After grinding up the "lukarrara" seeds people$_i$ would cook them into cakes$_j$ to eat PRO$_j$. [lukarrara]

In (45), the OBJECT of the non-finite clause *nga-rninja-ku + ju* is left unexpressed, but it is clearly the seed-cakes.

(46) Ngaka kala-lu-nganpa *karli-puka* *jarnti-rninja-rla*
then USIT-3pl-1plex boomerang-EVER-ABS trim-INF-SEQ
yu-ngu jarlu-patu-rlu.
give-PAST old.man-PL-ERG
Kurlarda kala-lu-nganpa *maja-rninja-rla* yu-ngu.
spear-ABS USIT-3pl-1plex straighten-INF-SEQ give-PAST
Having carved boomerangs the old men would give them to us. They would give us spears$_i$ after straightening PRO$_i$. [jarntirni]

In the first clause of this example the nominal *karli-puka* could either be construed as an OBJECT 'thing trimmed' of the non-finite clause *jarntirninjarla* (in which case the matrix verb *yungu* has a null pronominal as OBJECT 2). Or it could be construed as the OBJECT 2 'thing given' of the matrix verb, in which case the non-finite clause has a null pronominal as OBJECT. In the second clause, the nominal *kurlarda* is separated from the non-finite clause *majarninjarla* by the AUX. I assume that it must be the OBJECT 2 of the matrix, and therefore that the non-finite clause has a null pronominal OBJECT.

(47) *Yinarlingi-ki* ka-rnalu-rla jiri jarnti-rni;
echidna-DAT PRES-1plex-DAT quill-ABS trim-NPST
kirlka-ma-ni ka-rnalu *jarnti-rninja-rlu.*
clean-CAUS-NPST PRES-1plex trim-INF-ERG
We scrape the echidna$_i$ clean of quills. We clean PRO$_i$ by scraping PRO$_i$. [jarntirni]

In this example the first clause has an overt OBJECT and an overt DATIVE argument. The DATIVE argument *yinarlingiki* 'echidna' is the antecedent for the null pronominal OBJECT of the finite verb *kirlka-mani* 'clean' next clause, and also the null pronominal OBJECT of the non-finite clause *jarntirninjarlu*.

Normally, a null pronominal in non-finite clauses has an understood third person antecedent. This contrasts with matrix sentences, in which a null pronominal can have any person or number, because the pronominal's features are provided by the AUX. So the information is recoverable. But, even in non-finite clauses, it is possible to have null pronominals with non-third person referents, provided this information is recoverable from the context. Thus, in (48) there is a second person SUBJECT *nyuntu + ju* in the first finite clause. This acts as an antecedent for the null pronominal OBJECT of the non-finite clause *yulkanjaku* 'to love'. The SUBJECT of *yulkanjaku* is an understood third person pronominal '*he*', which may or may not be coreferential with the expressed SUBJECT of the final clause, *waninja-warnu-rlu* "lover". The OBJECT is second person, and is coreferential with the matrix SUBJECT.

(48) Milkarra-ku ka-npa nyuntu + ju wapa-mi warrikirdikirdi
show.off-DAT PRES-2sg you-ABS + EUPH go-NPST around
yulka-nja-ku nganta, yungu-ngku nyuntu-nyangu-rlu
love-INF-DAT QUOT REAS-2sg 2sg-poss-ERG
waninja-warnu-rlu nya-nyi.
love-ASSOC-ERG see-NPST
You$_i$ walk around all over the place showing-off thinking for PRO$_{i/k}$ (him) to love PRO$_i$ (you), so that your lover$_j$ might see PRO$_i$ (you). [milkarra]

Again, it is important to emphasise that we really do not know what constraints are to be placed on null anaphora in Warlpiri. I have assumed a very liberal account, which is consonant with the data found so far. But no systematic study has yet been undertaken, on the order of the illuminating study of Chinese null anaphora to be found in Huang (1983). See Hale (to appear) for a start on this difficult project.

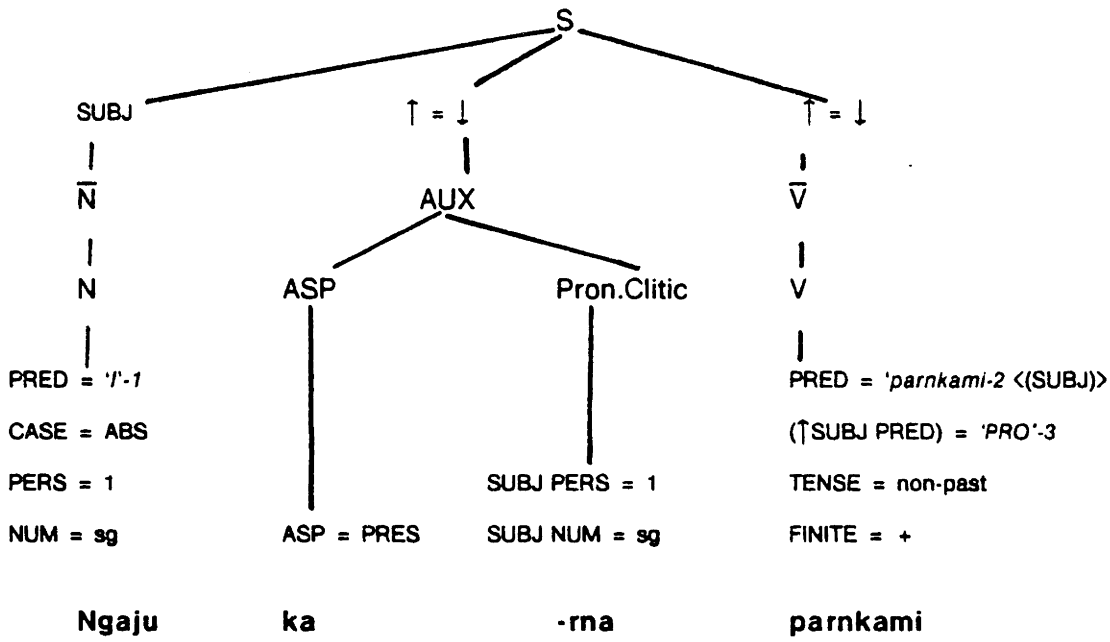
To conclude: in both finite and non-finite clauses, null pronominals are introduced by the argument-taking predicate. In finite clauses the features of the null pronominal are determined by the features of the pronominal clitics in the AUX, while in nonfinite clauses the features of null pronominals are determined either by discourse antecedency (as in (48)), or by control (see Chapters 3, 4, 5 and 6), or by some default equation attached to the verb, making the PRO third person singular.

The revised lexical entry for the verb *parnkami* (excluding tense information) is as follows:

parnkami:	(↑PRED) =	'parnkami'	<(SUBJ)>
			(↑SUBJ PRED) = '*PRO*'
			((↑SUBJ PERS) = 3)
			((↑SUBJ NUM) = **sg**)

The optional person and number equations are to allow the null pronominal in non-finite clauses to be third person singular if there is no discourse antecedent. The (↑SUBJ PRED) = '*PRO*' equation has to be optional, in order to prevent a violation of *consistency* in a sentence such as *Ngaju ka-rna parnkami*. If *ngaju* has a lexical form, and the verb introduces a null pronominal by means of the PRED feature '*PRO*', then *consistency* is violated because the one function SUBJECT has two PREDs. As I mentioned earlier, all PRED features in the c-structure tree are indexed, and so the lexical form introduced by *ngaju* has a different index from the null pronominal introduced by the verb. A simplified c-structure tree is given in (49).

(49)



I am running.

Since there are two lexical forms for the one function SUBJECT, the f-structure corresponding to this c-structure will be *inconsistent.*

The existence of null anaphora lends support to Principle 1, *selection for function.* For instance, it is not possible to say that a verb such as *parnkami* 'run' is subcategorized for an NP, because no overt NP need appear in the sentence. But it is subcategorized for a SUBJECT, which may be represented either by an NP or by a null pronominal.

Let us look now at another intransitive sentence.

(50) Kurdu ka parnka-mi.
Child-ABS PRES run-NPST
The child is running.

The major differences between (50) and the sentence *Ngaju ka-rna parnkami* are first, that the SUBJECT is third person. and second that there is no overt information on the AUX giving the SUBJECT's Number and Person. Like *ngaju*, *kurdu* is singular and has ABSOLUTIVE case. (51) is ungrammatical (except in an appositive reading: *'I, a child..'*) because the person and number features given by the AUX clash with those given by the overt nominal *kurdu*, and thus violate consistency.

(51) *Kurdu ka-rna parnka-mi.
Child-ABS PRES-1sg run-NPST
The child is running.

In this connection, observe that (52) is grammatical ONLY with the interpretation that the SUBJECT is 3rd person singular.

(52) Parnka-mi ka.
run-NPST PRES
He/she/it is running.

These two examples suggest that the *absence* of an overt pronominal clitic is treated as a *paradigmatic gap*, and is assigned the interpretation that the SUBJECT's number is singular and its person third. Further evidence for the absence of an overt pronominal clitic being meaningful is the fact that a non-third person SUBJECT cannot occur unregistered, as in (53).

(53) *Ngaju ka parnka-mi.
I-ABS PRES run-NPST.
I am running.

If the absence of registration is interpreted as indicating that the SUBJECT of the sentence is third person, then (53) would be ruled out by *Consistency* – the AUX provides the information that the SUBJECT is third person singular, while *ngaju* , which also has to be a SUBJECT, is first person singular.

The representation of paradigmatic gap information of this kind is not easy. In 2.3.4. I will briefly discuss the problem. For the moment, observe that, if the verb introduces the equation (↑SUBJ PRED) = '*PRO*', the f-structure corresponding to (52) then contains a SUBJECT, and so is complete. Because *parnkami* in (52) selects a SUBJECT, it can introduce an equation (↑SUBJ PRED) = '*PRO*'. *Parnkami* does not select an OBJECT, and so cannot introduce an equation (↑OBJ PRED) = '*PRO*'. Since the verb is the head of the sentence, properties of the verb are properties of the sentence. Therefore, if the PRED of the SUBJECT of the Verb is '*PRO*', the PRED of the SUBJECT of the sentence must also be '*PRO*'.

The equations (↑PRED) = '*PRO*' will be introduced in the lexicon. Instead of each verb being specified separately for an equation (↑SUBJ PRED) = '*PRO*', (↑OBJ PRED) = '*PRO*' etc, I assume that a general lexical rule introduces the (↑PRED) = '*PRO*' equations. The rule is given in (54).

(54) **Rule of PRO-introduction**

> **If an argument-taking predicate selects a grammatical function G, it may optionally introduce a null pronominal to represent that function, by introducing a PRED feature equation: (↑G PRED) = 'PRO'.**

The fact that no selected function has to be overtly realized is one of the major differences between Warlpiri, on the one hand, and Germanic and Romance languages on the other. The information about who is doing what to who is recoverable in most finite clauses in Warlpiri, because agreement with all selected functions is marked in the AUX (whether overtly or by means of a paradigmatic gap), and the AUX is obligatory in verb-headed sentences. However, this information is not syntactically recoverable in non-finite clauses.

Agreement with pronominal clitics is a phenomenon observable in many languages. In the next section I present a general account of pronominal clitics in Warlpiri, looking at clitics in sentence-types that I have not yet discussed, as well as comparing the behaviour of pronominal clitics in Warlpiri with pronominal clitics in Romance.

2.2.8.1 Clitic-doubling

The pronominal clitics express information about the selected arguments of the verbs and about major grammatical functions. They mark the person and number of the SUBJECT, OBJECT or Adjunct DATIVE of a sentence. (They do NOT mark OBJECT 2s, as I will show later). They also mark the Case of the OBJECT or Adjunct DATIVE if DATIVE and third person.

At first glance, the AUX pronominal clitics seem to resemble the pronominal clitics found in languages such as French and Spanish. Most of them are historically derived from pronouns, like the Romance clitics. There are similar constraints on co-occurrence of particular clitics - thus, like French,[22] a first or second person direct object cannot co-occur with a first or second person indirect object :

(55) a. *Il me te donne.

b. *Wati-ngki ka-*ju-ngku* punta-rni.
Man-ERG PRES-1sg-2sg take away-NPST
*He is taking you/me away from you/me.

The pronominal clitics in French and Warlpiri represent much the same kinds of grammatical functions: SUBJECTs, OBJECTs, Adjunct DATIVEs. They also represent reflexives. In (56) there are pronominal clitics referring to the SUBJECT (*npa*) and the REFLEXIVE OBJECT (*nyanu*).[23]

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22. I am grateful to Carol Neidle for this observation.

23. This sentence has the added complexity that an ABSOLUTIVE nominal *jangarnka* beard is in a body-part predication relation to the reflexive object: *Did you shave yourself beard-wise?* might be a more literal rendition.

(56) Jangarnka *-npa-nyanu* jarntu-rnu?
Beard-ABS -2sg-refl shave-PAST
Did you shave your beard off? [H59Notes]

In (57) there are pronominal clitics referring to the SUBJECT (*lu*) and the REFLEXIVE Adjunct DATIVE (*nyanu*). The OBJECT *ngurrju jukurrpa* 'good laws' is not represented by an overt clitic.

(57) Yangka yapa-patu-rlangu-rlu kalaka-*lu*-*nyanu* ngurrju jukurrpa
YOU.KNOW man-PL-E.G.-ERG ADMON-3pl-refl good-ABS law-ABS
kardu-ma-ni.
make-NPST
They (councils) can make good laws for themselves. [MKJ:2]

There are two major differences between Warlpiri pronominal clitics and Romance pronominal clitics. First, unlike the Romance clitics, the *absence* of an overt clitic is meaningful; so, for example, if there is no overt SUBJECT clitic, then the SUBJECT is understood to be third person. Usually, if the SUBJECT is animate, it is understood to be singular. Thus, in (58), the SUBJECT is understood to be third person. Because the verb *ngarni* 'eat' requires an animate SUBJECT, the normal interpretation is that just one person ate something.

(58) Nga-rnu
Eat-PAST
He/she/it ate it.

Second, a nominal with any selected function (except OBJECT 2: the ABSOLUTIVE OBJECT in ditransitives) can co-occur with an agreeing clitic, that is, Warlpiri permits *clitic doubling* freely.[24] In (59), an overt SUBJECT *ngaju* 'I' appears with a SUBJECT

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24. Not much is known about the discourse function of doubling. It is quite possible that pragmatic 'Avoid Pronoun Strategies' make clitic doubling of pronouns, especially of OBJECT pronouns, less common than their undoubled counterparts. Suffice it to say that no syntactic considerations have been found blocking or demanding clitic doubling in Warlpiri, with the exception of *reflexives* and *reciprocals* – see 2.3.3.

pronominal clitic, *rna*. In (60) an overt Adjunct DATIVE, *ngajuku*, is cross-referenced by an OBLIQUE clitic, *ju*, and in (61) an overt OBJECT, *wawirri*, is cross-referenced by an OBJECT clitic, *jana*. (In (61) the SUBJECT is represented only by the SUBJECT pronominal clitic.)

(59) *Ngaju -rna* wangka-ja.
I-ABS -1sg speak-PAST
I spoke. [H59Notes]
[SUBJECT and clitic]

(60) *Ngaju-ku* ka-*ju* karli jarnti-rni.
1sg-DAT PRES-1sg boomerang-ABS trim-NPST
He's making me a boomerang. [H59Notes]
[Benefactive OBJECT and clitic]

(61) Kapi-*rli-jarra-jana* *panu* *wawirri* panti-rni.
FUT-1duin-3pl many-ABS kangaroo-ABS spear-NPST
We two are going to spear many kangaroos. [H59Notes]
[Direct OBJECT and clitic]

In literary French, either a clitic is present or a nominal is present (except in the case of inchoative *se* constructions, see Grimshaw (1980)). In River Plate Spanish (see Montalbetti (1981)), either a clitic is present, or a nominal is present, or both are present, subject to restrictions on animacy and grammatical functions. In Warlpiri, nominal clauses behave like River Plate Spanish in allowing a clitic, a nominal or both. But verbal clauses have only two possibilities: the clitic MUST be present, and the nominal may optionally be absent. That is, clitic doubling is *obligatory* if a nominal is present (*pace* the paradigmatic gap of third person singular).

Much valuable work has been done within the Government-Binding framework on the behaviour of clitic-doubling constructions in Romance languages and some other languages, such as Modern Hebrew (Borer (1980)). Study of these languages has in general borne out an observation attributed to Richard Kayne that, in Romance, clitic-doubling can only occur if the NP which is doubled is preceded by a preposition. This has been described within the Government-Binding framework by saying that the clitic in some sense *absorbs* the Case assigned by the verb. Therefore the presence of an

overt nominal will violate the Case filter (which says that each referential nominal must have Case), unless there is some other mechanism for assigning case to that nominal. An overt preposition provides such a mechanism.

However, as Montalbetti (1981) shows, Kayne's generalization does not hold for a number of languages. Warlpiri is such a language.

In Warlpiri a nominal with almost any selected function can appear with an agreeing clitic. But, if in fact the clitic does absorb the case assigned by the matrix predicate, there is then no obvious alternative way for the nominal to get Case. Therefore, failing some ingenious alternative case-assignment mechanism, we would have to say that the Warlpiri pronominal clitics, although seemingly analogous to Romance clitics, are in fact rather different. Cross-linguistically, the Warlpiri pattern seems more common.[25] It is clear that a more general account of clitic-doubling is needed to show the similarities between Warlpiri pronominal clitics and Romance clitics.

Montalbetti (1981) has devised a way of accounting for clitic doubling in River Plate Spanish within the LFG framework, in the spirit of the analysis of French clitics given in Grimshaw (1980). The heart of this analysis is that pronominal clitics either have meanings like free pronominals, or else they act as agreement markers. This is expressed within the LFG framework by saying that, while a pronominal clitic always comes with features of person, number and case, it only *optionally* has a PRED feature equation.

In French, the pronominal clitics are *obligatorily* full pronouns (i.e. have a PRED feature equation), as Grimshaw (1980) argues, while in River Plate Spanish certain pronominal clitics will only *optionally* be full pronouns, depending on both the clitic and the features of the nominal being doubled (e.g. whether it refers to an animate being or a specific pronominal etc.). *Consistency* rules out a clitic which is a full pronominal from co-occurring with an overt nominal, as discussed above. Thus (62) is unacceptable in non-colloquial French.

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25. Many Australian Aboriginal, American Indian, and Caucasian languages show similar behaviour. See Harris (1981) for an illuminating description of agreement in Georgian, and Archangeli (1982) for a reanalysis within the LFG framework.

(62) *Je le vois Jean.

The pronominal clitic *le* has a pronominal lexical form '*PRO*', the overt nominal has its own lexical form 'Jean'. This violates consistency. Thus, in French clitic-doubling cannot occur, because the clitic is always a full pronominal.

In effect, Montalbetti provides a mechanism for dealing with clitic-doubling in general. [26] His account can easily be extended to pronominal clitics in languages such as Warlpiri and Georgian, in which Kayne's generalization does not hold, if we assume that pronominal clitics act as pronouns in having the equation (↑PRED) = '*PRO*'.

However, I am proposing that in Warlpiri it is not the pronominal clitics but rather the verb which introduces the equations (↑G PRED) = '*PRO*'. The optionality of this equation allows the appearance of overt nominals. This account permits a uniform account of the appearance of null pronominals in both finite and non-finite clauses. Under this analysis, the pronominal clitics serve simply as agreement markers. Nevertheless, the account of clitic doubling is based on the *optionality* of a PRED = '*PRO*' equation, which is the basis for the Montalbetti and Grimshaw accounts. Under either a Montalbetti-type account, or this account, the existence of clitic doubling in Warlpiri is easily represented.

2.3 Transitive sentences

Consider a typical transitive sentence such as (63).

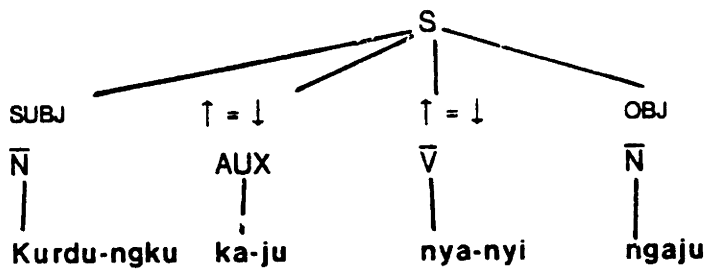
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26. As for Kayne's generalization, Montalbetti argues that it can be obtained in River Plate Spanish from independent considerations of animacy and specificity, together with conditions on the lexical entries of accusative and dative clitics. The conditions on the lexical entries make clitic doubling free for dative clitics, but constrain clitic doubling with animacy and specificity requirements for accusative clitics. These are language-particular requirements. Montalbetti (1981) looks at other Romance languages in an attempt to find similar explanations for the appearance of Kayne's generalization in those languages.

(63) Kurdu-ngku ka-ju nya-nyi ngaju.
child-ERG PRES-1sg see-NPST I-ABS
The child sees me.

Like an intransitive sentence, it has completely free word-order, except that the AUX *Ka-ju* must remain in second position. There are thus five other possible variants of this sentence. The phrase structure rule given in (17) will give the c-structure for this sentence.

(64) **C-structure 1 for (63)**



In discussing the phrase structure rule 17, I assumed that α could be N̄, V̄ or Particles. I did not discuss whether V̄ was a maximal projection analogous to VP in English. In English, a VP consists of V and its complements, including OBJECT.[27] Transitive sentences are pertinent to this question, because there is evidence against the existence of a VP constituent. Hale (1973a) proposed using the position of the AUXILIARY as a test for constituency. On the assumption that only one constituent can precede the AUX, then, if α in Warlpiri could be a maximal projection of V comparable to the English VP, the sequence V + NP (where NP is an OBJECT) should be able to precede the AUX. There should then be a variant of (64) in which *ngaju* and *nyanyi* precede the V together. But they cannot.[28]

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27. This can be shown by tests such as *Do-so* replacement: in the following sentence *do so* replaces the Verb, the OBJECT and the Location:
Lucy kissed Phil in the garden, and Mary did so too.

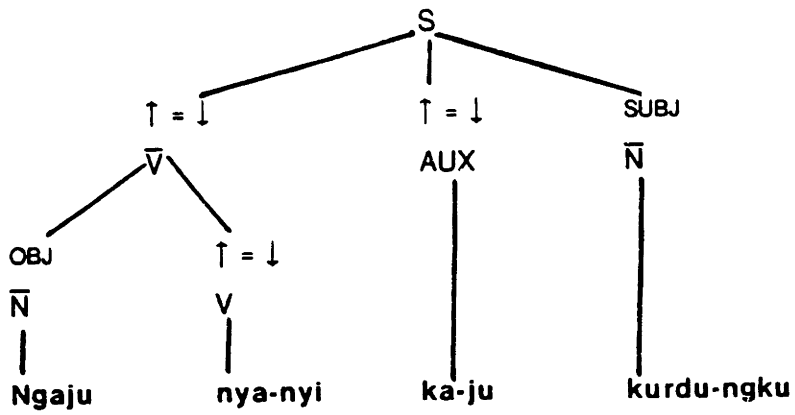
28. (65) a. is acceptable with an intonation break and a topicalized reading for the *ngaju*.

(65) a. *Ngaju nyanyi ka-ju kurdu-ngku.

b. *Nyanyi ngaju ka-ju kurdu-ngku.

(66)

*



If there is no syntactic VP in Warlpiri, then SUBJECT cannot be defined in terms of an actual configuration [NP of S], and OBJECT cannot be defined as [NP of VP].[29]

How then are SUBJECT and OBJECT expressed? Is it possible to define them in terms of case-marking? ABSOLUTIVE case marks the SUBJECT of an intransitive sentence, as I showed in the previous section. But in (65), the ABSOLUTIVE case-marked nominal does not correspond to the SUBJECT in the English translation. It corresponds to the OBJECT. The ERGATIVE case-marked nominal corresponds to the SUBJECT. So, it is not possible to say that ABSOLUTIVE case always expresses SUBJECT in Warlpiri, as,

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29. Of course one can always add a separate level of representation which contains abstract or *virtual* VPs in terms of which SUBJECT and OBJECT are defined. But, to be explanatory, such a level requires further justification than just the ability to define grammatical functions configurationally. See Zubizarreta, 1982, and Zubizarreta and Vergnaud, 1982.

say. NOMINATIVE case expresses SUBJECT in Latin.[30]

Evidence from the agreement markers in the AUX supports the claim that the ABSOLUTIVE nominal of intransitive sentences has the same grammatical function as the ERGATIVE nominal of the transitive sentence. rather than having the same grammatical function as the ABSOLUTIVE nominal in the transitive sentence. I showed in the previous section that an ABSOLUTIVE first person singular nominal in an intransitive sentence agreed with a Clitic 1 *rna* in the AUX. (63) shows an ABSOLUTIVE first person singular nominal in a transitive sentence agreeing with a clitic *ju*, rather than *rna*. (67) shows that the ABSOLUTIVE cannot agree with *rna* in a transitive sentence:

(67) *Ngaju ka-rna nya-nyi kurdu-ngku.
I-ABS PRES-1sg see-NPST child-ERG
The child sees me.

(68) and (69) show that an ERGATIVE first person singular SUBJECT agrees with *rna* in the AUX, and not with *ju*:

(68) Ngajulu-rlu ka-rna nya-nyi kurdu.
I-ERG PRES-1sg see-NPST child-ABS
I see the child.

(69) *Ngajulu-rlu ka-ju nya-nyi kurdu.
I-ERG PRES-1sg see-NPST child-ABS.
I see the child.

That is, the same agreement marker *rna* is used for the ABSOLUTIVE nominal of an intransitive sentence, and the ERGATIVE nominal in a transitive sentence, while a different agreement marker *ju* is used for the ABSOLUTIVE nominal in a transitive

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30. Unlike Dyirbal, Warlpiri is not a deep-ergative language in which the ABSOLUTIVE-marked nominal is always the SUBJECT.

Surface ERGATIVE case-marking is not the only instance of SUBJECTs bearing different cases. See Mohanan (1982a) for the existence of SUBJECTs with quirky case in Malayalam. See Andrews (1982c), Levin (1981) and Thráinsson (1979) for similar facts in Icelandic. See Neidle (1982) for arguments against postulating SUBJECTs with quirky case in Russian, and also Pesetsky (1982).

sentence. Furthermore. clitics such as *ju* always follow Clitic 1s such as *rna*, if both are present. I will call *ju* and the like Clitic 2s. Hale (1973a) suggested that the simplest account of the AUX agreement in Warlpiri is to say that *rna* and other Clitic 1s agree with the SUBJECT of the sentence, whereas *ju* and other Clitic 2s, agree with the OBJECT (and also the Adjunct DATIVE - see 2.3.2.1).

To conclude: SUBJECT and OBJECT are morphologically expressed by case markers. However, the same case - ABSOLUTIVE - can be used for both SUBJECT and OBJECT. Agreement of the pronominal clitics with the ERGATIVE and ABSOLUTIVE case-marked nominals in a sentence argues for the ERGATIVE nominal being the SUBJECT and the ABSOLUTIVE nominal being the OBJECT.[31]

I return now to the representation of the pronominal clitics. (70) lacks both an overt OBJECT and an overt SUBJECT.

(70) Nya-nyi ka-ju.
See-NPST PRES-1sg
He/she/it sees me.

If the OBJECT is third person singular, there is no overt pronominal clitic representing it in the AUX.

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31. In the literature on Australian languages, this split in marking is sometimes described as though the language has two systems of case-marking, NOMINATIVE-ACCUSATIVE (which corresponds to the SUBJECT-OBJECT marking of the AUX), and ERGATIVE-ABSOLUTIVE (which refers to the ERGATIVE case-marking, such as that of nominals in Warlpiri). There is no need to adopt this terminology in Warlpiri. Furthermore, it would be very difficult to express in LFG, because of *Consistency*. Suppose that an ERGATIVE-marked nominal is registered in the AUX by a NOMINATIVE clitic. The two will have different case-features and thus will violate consistency.

Goddard (1982) also argues against treating split-ERGATIVE systems as though there were two systems of case-marking. He gives an analysis of languages where the split cannot be treated, as in Warlpiri, by assuming that the elements without the ERGATIVE/ABSOLUTIVE case marking are caseless, and indicate grammatical functions.

(71) Wati-ngki ka nya-nyi kurdu.
Man-ERG PRES see-NPST child-ABS
The man sees the child.

Just as a non-third person SUBJECT has to be registered, so a non-third person OBJECT has to be registered in the AUX. (72) is ungrammatical because the first person OBJECT is not registered:

(72) *Nya-nyi ka ngaju kurdu-ngku.
See-NPST PRES I-ABS child-ERG.
The child sees me.

If the absence of an OBJECT is interpreted as a paradigmatic gap, understood as third person singular, (72) is ruled out by *Consistency*.

A third person singular OBJECT need not be represented by an overt OBJECT.

(73) Wati-ngki ka nya-nyi.
Man-ERG PRES see-NPST
The man sees him/her/it.

For the f-structure corresponding to this sentence to be complete, a null pronominal OBJECT must be provided. Since the OBJECT is a selected grammatical function, the verb carries the optional equation (↑OBJ PRED) = '*PRO*', just as it carries the optional equation (↑SUBJ PRED) = '*PRO*'.

To sum up this discussion of transitive sentences: transitive sentences behave like intransitive sentences with respect to their freedom of word-order, and the second position of the AUX. There is no evidence for a syntactic VP constituent. Therefore the grammatical functions cannot be defined in terms of a surface-structure VP. Transitive verbs can introduce null pronominals for their OBJECTs, just as verbs can introduce null pronominal SUBJECTs.

I will now present the evidence for saying that a given argument is an OBJECT, rather than an OBLIQUE. Unfortunately I have found only one test (explored in Carrier

(1976)), and it is not wholly reliable.[32] This test involves the ability of an argument to control a particular type of non-finite clause marked with the complementizer suffix *kurra*. The simplest statement about the controller of a *kurra* clause appears to be that it is an OBJECT.[33]

(74) shows a sentence with a *kurra* complementizer:

(74) Kurdu-ngku ka karnta nya-nyi, [*ngurlu yurrpa-rninja-kurra*]
child-ERG PRES woman-ABS see-NPST seed-ABS grind-INF-OCOMP
The child sees the woman grinding mulga seed.

('OCOMP' stands for 'OBJECT-controlled complementizer')

Karnta 'woman' is the OBJECT of the verb *nyanyi* 'to see'. It is the controller of the clause headed by *yurrparninjakurra*. *Kurdu-ngku*, 'the child', could not possibly be the controller of the clause.[34]

That ABSOLUTIVE case is not what determines control is shown in the following example:

(75) *Ngarrka ka-rla yuraka-nyi, marlu-ku [*kuyu*
Man-ABS PRES-DAT sneak.up.on-NPST kangaroo-DAT meat-ABS
nga-rninja-kurra]
eat-INF-OCOMP
While eating meat, the man is sneaking up on the kangaroo. [adapted from example in Survey]

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32. From some preliminary work I did in 1982, it appears that some speakers allow *kurra* complements to modify more than just OBJECTS.

33. This proposal was made by Hale in a mimeo "Walbiri IV: Obviation", and elaborated on by him in Hale (1982b), as well as in Carrier (1976). See also Simpson and Bresnan (1982). Hale writes: "*The controller of a kurra-clause must, it seems, be an OBJECT which is an integral part of the lexical argument structure of the main-clause verb.*" [EFW: 108]

34. There is a use of *kurra* as a complementizer on a SUBJECT-controlled clause – however, in this case the tense reference of the clause is not 'simultaneous action', as in (75), but rather 'future action, purposive'. See Chapter 6.

In (75) the ABSOLUTIVE marked nominal is the SUBJECT, and it cannot control the *kurra* clause. (76) shows that a LOCATIVE argument cannot control a *kurra* clause.

(76) *Japanangka ka nyina-mi pirli-ngka *pata-karri-nja-kurra*.
Japanangka-ABS PRES sit-NPST stone-LOC fall-INF-OCOMP
Japanangka is sitting on the stone that is falling. [Carrier: 1976]

In 2.3.1.3 and 2.3.2. I will show that DATIVE arguments which are not OBJECTs, and ABSOLUTIVE OBJECT 2s apparently cannot control *kurra* clauses. Chapter 6 presents in greater detail the obviation system of which the *kurra* clause is a representative.

The next question is how to express in LFG the fact that the SUBJECT of an intransitive verb such as *parnkami* 'run' has ABSOLUTIVE case, while the SUBJECT of a transitive verb such as *nyanyi* 'see' has ERGATIVE case. The key problem is that *it is not possible to assign case in isolation.* The fact that a verb is subcategorized for an OBJECT is relevant to determining the case of the SUBJECT.

The information that a sentence has an OBJECT is expressed in two places – in the lexical entry of the matrix predicate, and in the annotated c-structure tree (and hence in the functional structure of the sentence). Case assignment can therefore be represented either as a filter on f-structures (ruling out f-structures in which the SUBJECT's CASE is ABSOLUTIVE when the OBJECT's CASE is ABSOLUTIVE), or it can be expressed as a redundancy rule in the lexicon, since the lexical entry of a predicate gives information on both the semantic role and the grammatical function associated with each argument.

Andrews (1982) explores the possibility that case-assignment is a filter on f-structures. I take the opposite approach, and say that the information about the case of grammatical functions selected by a predicate is expressed as part of the lexical entry for that predicate. I do this for two reasons. First, allowing case-assignment to operate in the lexicon gives us the possibility of relating cases and semantic relationships, and such a relationship seems desirable, since the case which an argument has is determined both by its grammatical function and by its semantic role. As Hale (EFW) shows, case-marking of SUBJECT and OBJECT is largely predictable from the lexical semantics and

subcategorization properties of the verb.[35] Thus, the Subject of a two-place predicate is ERGATIVE if it has the semantic role of Actor or Perceiver, and ABSOLUTIVE if it has a non-Actor, non-Perceiver role such as Experiencer; the SUBJECT of a one-place verb is ABSOLUTIVE (but a small regular subclass takes ERGATIVE - see Hale (EFW)). A directly affected OBJECT usually has ABSOLUTIVE case, while a Goal, or *intensional* object has DATIVE case.

Second, in non-finite clauses with controlled PRO SUBJECTS that are never realized overtly, an ADJUNCT modifying the PRO SUBJECT can agree with it in case. (This is discussed and illustrated in Chapter 6). Allowing the lexical entry of the argument-taking predicate to express the case of the SUBJECT makes it relatively simple to account for the ADJUNCT's case on the assumption that the PRO SUBJECT has case.

Let us consider first the assignment of case to the SUBJECT of an intransitive verb, such as *parnkami* 'to run'. Recall the dictionary definition given earlier.

X *moves rapidly along a* **path** *beginning at one* **place** *and ending at another* **place.**

A general case-linking rule assigns ABSOLUTIVE case to a SUBJECT linked with the X argument of a verb of motion. (Another general case-linking rule allows **Path**, and the **beginning** and **ending places** to be optionally expressed as oblique-case-marked nominals — PERLATIVE for the **path**, and ELATIVE and ALLATIVE for the **beginning** and **ending places**). The information that the SUBJECT has ABSOLUTIVE case is expressed in the lexical entry for the verb *parnkami* as follows:

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35. That case is not wholly predictable is shown by pairs such as *kanginy-karrimi* and *kanginy-pinyi*. Both mean approximately 'fail to recognize'. *Kanginy* is a preverb. *Kanginy-karrimi*, formed with the intransitive verb *karrimi* 'stand', takes an ABSOLUTIVE SUBJECT and a DATIVE OBJECT, while *kanginyi-pinyi*, formed with the transitive verb *pinyi* 'hit', takes an ERGATIVE SUBJECT and an ABSOLUTIVE OBJECT. (For this example, however, it could be argued that the complex verbs retain the case-frame of the simple verbs *karrimi* and *pinyi*).

parnkami: (↑PRED) = 'parnkami' <(SUBJ)>

runner

((↑SUBJ PRED) = '*PRO*')

(↑SUBJ CASE) = ABS

A transitive verb such as *nyanyi* 'see' will have the following lexical entry:

nyanyi:	V	<(SUBJ)	(OBJ)>
		see-er	*thing seen*
		((↑SUBJ PRED) = '*PRO*')	((↑OBJ PRED) = '*PRO*')
		(↑SUBJ CASE) = ERG	(↑OBJ CASE) = ABS

These equations are *defining* equations (see 2.2.6.2). They introduce the information about CASE. They do not require that the information about CASE be present in some other form (as, say, *constraint* equations would.)

I assume that, in Warlpiri, lexical rules assign case to particular combinations of grammatical functions and semantic roles.[36] These rules operate after other lexical rules, such as the diathetical *Conative* rule (see 2.3.1.2).

In the next section I will discuss other case-arrays for transitive verbs.

2.3.1 Other transitives

There are two other possible case-frames for transitive verbs, ABSOLUTIVE SUBJECT and DATIVE OBJECT (which is very common), and ERGATIVE SUBJECT and DATIVE OBJECT (which is restricted to a small class of verbs with intensional OBJECTs such as *seek*, and to verbs that have undergone the *Conative* diathetical rule – see

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36. Languages may have different ways of assigning and also checking case. For instance, B. Levin (to appear, and in preparation) shows that case assignment in Basque depends on underlying grammatical functions, not on surface grammatical relations. In Russian, the presence of an OBJECT with GENITIVE case is sanctioned by the presence of negation. (See Neidle, 1982a, and Pesetsky, 1982). In Lithuanian, it appears that the OBJECT of certain purpose clauses can have DATIVE case.

2.3.1.2). The reader is referred to Hale (EFW) for a detailed account of their semantics.

2.3.1.1 The ABSOLUTIVE-DATIVE case-frame

The ABSOLUTIVE-DATIVE verbs include verbs of communication such as *wangkami* 'speak', verbs of emotion such as *yulkami* 'love', numerous verbs formed with the INCHOATIVE (INCH) verbalizer *jarrimi*, such as *ngurrju-jarrimi* 'become good (towards)', and some verbs which, although they have volitional SUBJECTs, do not involve any noticeable effect on the OBJECT, such as *rdanparni* 'accompany', and *yura-kanyi* 'stalk, sneak up on'. In other words, the verbs making up the ABSOLUTIVE-DATIVE class do not constitute the archetypical Agent-Patient transitive verbs.

(77) Karnta ka-*rla* *kurdu-ku* wangka-mi.
Woman-ABS PRES-DAT child-DAT speak-NPST.
The woman is speaking to the child. [Survey]

In (77) the DATIVE argument *kurdu-ku* is cross-referenced by *rla*, rather than by Ø, (the paradigmatic gap which is interpreted as 3rd person ABSOLUTIVE OBJECT). *Rla* is a special form for the third person DATIVE. All other persons and numbers are registered by Clitic 2s, for example, first person (singular or non-singular), as in (78), second person (singular or non-singular), as in (79), and third person non-singular, as in (80) – I have given an example of an ABSOLUTIVE-DATIVE construction with a non-singular 3rd person OBJECT for comparison in (81).

(78) Karnta ka-*ju* wangka-mi.
Woman-ABS PRES-1sg speak-NPST
The woman is speaking to me.

(79) Ngaju ka-rna-*ngku* wangka-mi.
I-ABS PRES-1sg-2sg speak-NPST
I am speaking to you.

(80) Karnta ka-*jana* *kurdu-patu-ku* wangka-mi.
Woman-ABS PRES-3pl child-PL-DAT talk-NPST
The woman is talking to the children. [Survey]

(81) Karnta-ngku ka-*jana* *kurdu-patu* paka-rni.

Woman-ERG PRES-3pl child-PL-ABS hit-NPST
The woman is hitting the children. [Survey]

What is the status of the DATIVE – is it an OBJECT or an OBLIQUE? Some evidence comes from the control of *kurra* clauses:

(82) Ngarrka ka-rla marlu-ku yura-ka-nyi, [*marna*
Man-ABS PRES-DAT kangaroo-DAT stalk-NPST, grass-ABS
nga-rninja-kurra-ku.]
eat-INF-OCOMP-DAT
The man is stalking the kangaroo (while it is) eating grass. [EFW: 107]

In (82), the DATIVE *marlu-ku* is the controller of the *kurra* clause. (Note that the *kurra* clause gets DATIVE in agreement with the case of its controller). On the assumption that *kurra* clauses are controlled by OBJECTs, the DATIVE in (82) is probably an OBJECT.

Some ABSOLUTIVE-DATIVE verbs require that the DATIVE OBJECT be present. These include verbs such as *yulkami* 'love', *rdanparni* 'accompany' and *yura-kanyi* 'sneak up on'. But the DATIVE OBJECT of most ABSOLUTIVE-DATIVE verbs is optional. It can be omitted without the implication that there is an understood definite referent. Thus in (83) there is no understood definite person being spoken to. There is no DATIVE registered in the AUX, and hence no DATIVE OBJECT. This contrasts with ERGATIVE-ABSOLUTIVE verbs, in which a missing ABSOLUTIVE is interpreted as third person definite. However, in (84), in which a DATIVE is registered in the AUX, there is a DATIVE OBJECT, and hence an understood definite referent.

(83) a. Wakurturdu ka wangka-mi.
Loud-ABS PRES speak-NPST.
He's talking loud. [wangkami]

b. Yapa-kari ka-*rla* ngarrka wangka-mi(..)
person-OTHER-ABS PRES-DAT man-ABS speak-NPST
Some man is talking to her.

Whether the DATIVE argument is optional or obligatory,[37] it is still treated as an OBJECT for the purposes of controlling a *kurra* clause:

(84) Karnta ka-rla wangka-mi ngarrka-ku [*karli*
woman-ABS PRES-DAT speak-NPST man-DAT boomerang-ABS
jarnti-rninja-kurra-(ku).]
trim-INF-OCOMP-(DAT)
The woman is speaking to the man trimming the boomerang. [EFW: 107]

(The DATIVE marking is optional).

This example suggests that, when the DATIVE is present, it really is an OBJECT.

The syntactic difference between the ABSOLUTIVE DATIVE verbs and the ERGATIVE ABSOLUTIVE verbs reflects a semantic difference. One lexical rule of case-assignment assigns ERGATIVE case to a certain pairing of a semantic role and the SUBJECT grammatical function. Another lexical rule assigns ABSOLUTIVE case to the pairing of a different semantic role and the SUBJECT grammatical function, (perhaps of Experiencer and SUBJECT, or Actor if there is no OBJECT assigned.)

The ABSOLUTIVE-DATIVE class of verbs is sometimes called *middle* , and is not considered transitive in some grammars of other Australian languages. Hale [EFW] notes that, in Warlpiri, the class differs from ERGATIVE-ABSOLUTIVE verbs in three significant ways: first, they belong with a few exceptions to the conjugation class associated with intransitive verbs; second, the SUBJECTs of these sentences do not have the archetypical transitive SUBJECT semantic role of "Agent" or "Causer"; third, the DATIVE OBJECT is optional for most of the verbs. This is in direct contrast with the ERGATIVE-ABSOLUTIVE transitive verbs, which do not for the most part allow indefinite-OBJECT deletion, except

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37. The verb *pardarni* and synonyms meaning 'wait for' is exceptional. It takes an ABSOLUTIVE SUBJECT and a DATIVE OBJECT.

Wati ka-rla karnta-ku parda-rni.
Man-ABS PRES-DAT woman-DAT wait-NPST
The man is waiting for the woman. [pardarni]

However, the DATIVE OBJECT does not normally control a *kurra* clause. See Chapter 6 for some discussion.

in highly-marked generic contexts.[38] If there is no overt ABSOLUTIVE OBJECT, and no overt registration in the AUX, then the OBJECT is normally interpreted as third person definite (and usually singular).

However, I see no reason in Warlpiri to say that the DATIVE taken by these verbs is anything but an OBJECT.[39] It patterns syntactically with ABSOLUTIVE OBJECTs (and also, as I shall show, with the DATIVE OBJECTs of verbs with ERGATIVE-DATIVE case-frames) in being able to control *kurra* clauses. In doing so, the DATIVE OBJECT of an ABSOLUTIVE-DATIVE verb is set apart from another DATIVE, the Adjunct DATIVE (see 2.3.2).

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38. According to Hale (EFW), the normal way to express something like *I am drinking* is to use an indefinite nominal:

Ngajulu-rlu *ka-rna* *pama* *nga-rni.*
I-ERG PRES-1sg delicacy-ABS ingest-NPST
I am drinking. [Hale, EFW: 31]

Verbs of performance are an exception. They take ERGATIVE SUBJECTs, and retain this Case even when the OBJECT is deleted.

Ngarrka-ngku *ka* *(purlapa)* *yunpa-rni.*
Man-ERG PRES (corroboree-ABS) sing-NPST
The man is singing (a corroboree).

The equivalent verbs in English have the same property -- a verb such as *sing* can, but need not, have an OBJECT:

I sang five songs including Greensleeves

However, the sentence *I sang* does not imply that I sang a song; since one can sing wordlessly and tunelessly.

39. Andrews (1982) takes a different position. He argues that all ABSOLUTIVE OBJECTs are OBJECTS, and DATIVEs are either indirect objects (OBJECT 2s), or Adjunct DATIVES. At various points in the discussion I will compare Andrews' analysis to mine. Calling the DATIVEs Indirect Objects makes it easier to describe the agreement with pronominal clitics. However, it complicates the account of *kurra* clauses, because now both OBJECTs and OBJECT 2s can control them, and this makes the wrong prediction for ditransitives, as I show in 2.3.1.3.

I propose that the fact that most ABSOLUTIVE-DATIVE verbs correspond to one-place verbs with ABSOLUTIVE SUBJECTs should be treated as a *semantic redundancy rule*. Semantically the difference between the one-place verb in (82) and the two-place verb in (83) parallels the difference in English between *speak* and *speak to*, and *laugh* and *laugh at*.

(85) a. John spoke loudly.
b. John spoke to Lucy.
c. Never before had Lucy been spoken to so oddly.

(86) a. Lucy laughed loudly.
b. Lucy laughed at John.
c. Never before had John been laughed at.

As I argued in 1.3.2, the alternation between *speak* and *speak to* is simply a semantic redundancy rule relating two predicate argument structures. The two verbs *wangkami* can be treated analogously. As a one-place predicate, *wangkami* represents an *undirected process*, meaning something like *make noise characteristic of type, e.g. sing, for birds, speak for humans, howl for wind.* As a two-place predicate, *wangkami* represents a *directed process*.

wangkami	noise-maker	
	<(SUBJ)>	
wangkami-DAT	talker	entity talked to
	<(SUBJ)	(OBJ)>

This semantic redundancy rule merges an abstract directional predicate, (which can be expressed syntactically by a case-suffix such as DATIVE or ALLATIVE: X directed towards Y), with the predicate of a verb which represents an undirected process. The new predicate then represents a directed process. Y, the argument of the directional predicate, becomes an argument of the new predicate.

For the English example, I presented Bresnan's argument that in fact the semantic role *entity talked to* (or *thing laughed at*) has two possible function assignments, $OBLIQUE_{dir}$ or OBJECT. The natural question to ask. then, is: does this alternation exist in Warlpiri. There is some evidence that it does.

The first piece of evidence comes from the fact that the *entity talked to* need not have DATIVE case, and when it does not have DATIVE case it is almost certainly not an OBJECT. Occasionally the ALLATIVE is used to express the semantic role of the *entity talked to*. (See Hale, EFW). Semantically, this is not surprising, since the semantic relationship to *wangkami* entails some directionality and while ALLATIVE is the archetypical directional case, the DATIVE case also involves an element of directionality.

(87) (..)*nyampu-kurra* + lku kuja-ka-rna wangka-mi *walypali-kirra*
this-ALL + THEN REL-PRES-1sg say-NPST white.man-ALL
ngula pina.
that knowledgeable
(..) and when I speak to this white-man, it is with knowledge (that what I am saying is true.) [EFW]

Observe that the ALLATIVE is not cross-registered in the AUX. This suggests that the ALLATIVE is an OBLIQUE argument and not an OBJECT.[40] There is no evidence that an ALLATIVE can ever control a *kurra* clause. (Further investigation of other ABSOLUTIVE-DATIVE verbs is needed to see if they also allow an alternation between DATIVE case and some other case.)

The second piece of evidence that verbs such as *wangkami* can take either an OBJECT or an OBLIQUE argument comes from the fact that sometimes such verbs allow an alternation between a registered DATIVE and an unregistered DATIVE. Consider the verb *minyingi-jarrimi* 'get disappointed, declined'. It can have a registered or unregistered DATIVE, as (88) shows.

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40. Mary Laughren pointed out to me a rare example of a cross-registered ALLATIVE.
Yurll.ulyu-pardi-ja *-ju* *ngaju-kurra*
vomit-rise-PAST -1sg I-ALL
He vomited on me. [yurlkulyu-pardimi]

(88) Yapa ka-lu minyingi-jarri-mi *kuyu-rlangu-ku,*
Man-ABS PRES-3pl disappointed-INCH-NPST meat-E.G.-DAT
karli-rlangu-ku, nyiyakantikanti-ki. wangka-nja-rla
boomerang-E.G.-DAT, things-DAT. speak-INF-SEQ
wangka-nja-rla, ka-lu minyingi-jarri-mi.
speak-INF-SEQ PRES-3pl disappointed-INCH-NPST
People are unsuccessful in getting meat for example or boomerangs or anything; after asking and asking, they are disappointed. [minyingi-jarrimi]

In (88) the inanimate DATIVEs *kuyu-rlangu-ku, karli-rlangu-ku* etc are unregistered. In the following example the DATIVE argument, *malypakarra-ku*, is registered.

(89) Ngatinyanu + ju -rla wangka-ja, wangka-ja. Minyingi-jarri-ja
Mother-ABS + EUPH -DAT speak-PAST, speak-PAST ignore-INCH-PAST
-rla malypakarra-ku.
-DAT sonnyboy-DAT
The mother pleaded and pleaded, but she was ignored by the little boy. [minyingi-jarrimi]

The two DATIVE arguments appear to differ primarily in animacy, not in semantic role. I assume that, in both sentences, the DATIVE represents an argument of the verb. Suppose that in (88), the DATIVE is an OBLIQUE of some sort, whereas in (89) the DATIVE is an OBJECT. Now, if DATIVEs which are not registered in the AUX are OBLIQUES, we would then expect that such DATIVEs could not control *kurra* complement clauses. There is a small piece of evidence that this is the case. Laughren[41] notes that the b. sentences of (90) and (91), which have registered DATIVEs, are more acceptable than their a. counterparts, which do not have registered DATIVEs.

(90) a. ??Nyampu + ju wati ka nyina papardi
This-ABS + EUPH man-ABS PRES sit-NPST elder.brother-ABS
karnta-ku [*miyi kipi-rninja-kurra-ku.*]
woman-DAT food-ABS winnow-INF-OCOMP-DAT
This man is big brother to the woman who is winnowing the food.

b. Nyampu + ju wati ka-rla nyina papardi
This-ABS + EUPH man-ABS PRES-DAT sit-NPST elder.brother-ABS

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41. Data sent to D. Nash, April 1981.

karnta-ku [*miyi kipi-rninja-kurra-ku.*]
woman-DAT food-ABS winnow-INF-OCOMP-DAT
This man is big brother to the woman who is winnowing the food.

(91) a. ?Kurdu ka karri-mi wiri ngarrka-ku [*rdaku-ngka*
Child-ABS PRES stand-NPST big-ABS man-DAT hole-LOC
nyina-nja-kurra-ku].
sit-INF-OCOMP-DAT
The child is bigger than the man who is sitting in the hole.

b. Kurdu ka-rla karri-mi wiri ngarrka-ku [*rdaku-ngka*
Child-ABS PRES-DAT stand-NPST big-ABS man-DAT hole-LOC
nyina-nja-kurra-ku].
sit-INF-OCOMP-DAT
The child is bigger than the man who is sitting in the hole.

More work needs to be done on this area, but the evidence available so far suggests that unregistered DATIVEs are not really eligible as controllers of *kurra* clauses. This is readily explicable if they are not in fact OBJECTS of the verb at all, but rather OBLIQUES of some kind, (where there is an alternation between OBLIQUE and OBJECT), or else ADJUNCTS.

The evidence given above suggests that verbs such as *wangkami* 'speak' when used as two-place predicates have the option of expressing the non-SUBJECT argument either as a DATIVE OBJECT, or as an $OBLIQUE_{dir}$ with an appropriate case. I propose that these two forms are related by a relation-changing rule similar to the Verb-preposition incorporation rule in English which relates the OBLIQUE prepositional frame of *laugh at* and the OBJECT frame of *laugh at*. However, in Warlpiri, there are no prepositions to

incorporate.[42]

I give below the lexical entries for the two function assignments for *wangkami*:

wangkami	*talker*	*entity talked to*
	<(SUBJ)	($OBLIQUE_{direct}$)>
	ABSOLUTIVE	DATIVE/ALLATIVE

wangkami	*talker*	*entity talked to*
	<(SUBJ)	(OBJ)>
	ABSOLUTIVE	DATIVE

To conclude, I have shown that verbs with ABSOLUTIVE-DATIVE case-frames behave like transitive verbs with ERGATIVE-ABSOLUTIVE frames in controlling *kurra* clauses, and in having the DATIVE argument registered in the AUX. I have suggested that the fact that the DATIVE argument is not obligatory can be attributed to an alternation between a one-place predicate and a two-place predicate, analogous to the alternation in English between *laugh* and *laugh at*. I have suggested that the parallel is even closer, in that Warlpiri, like English, also has an alternation of grammatical function assignment to the DATIVE argument, of $OBLIQUE_{dir}$, or OBJECT.

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42. One might want to speculate that the obligatoriness of the DATIVE case when the directional argument is an OBJECT is due to the DATIVE predicate represented by DATIVE case being incorporated into the verb in a manner analogous to Verb-preposition incorporation. This has the advantage of linking the syntactic use of DATIVE as an argument-taking predicate with its case-marking use. WHen DATIVE is an ADJUNCT, its PRED is an argument-taking predicate which is syntactically relevant. When DATIVE marks an OBJECT, its directional meaning has been incorporated as part of a complex verb.

Howe er, there is no morphological evidence for the DATIVE-incorporation rule, in contrast to English, in which verb-preposition incorporation interacts with the morphology, allowing the formation of complex adjectivals such as *It was an unheard-of proposal; it was a much talked-about proposal.* (See Bresnan (1980b)). But the only trace of the DATIVE incorporation rule in Warlpiri is the *grammatical* case-marking on the nominal.

A note of caution is in order. I have claimed that *kurra* clauses are controlled by OBJECTs, including the DATIVE OBJECTs of ABSOLUTIVE verbs. This means that I must take a rather liberal view of what is an OBJECT. Although, as I will show in 2.3.2.2, there are DATIVE arguments registered in the AUX which cannot take *kurra*, most directional-type DATIVE arguments of ABSOLUTIVE verbs can take *kurra* clauses. I must claim that the promotion to OBJECT is a process more widespread in Warlpiri than in, say, English.

2.3.1.2 The ERGATIVE-DATIVE verbs

There are two types of verb with ERGATIVE-DATIVE case-frames, those that always have ERGATIVE-DATIVE case-frames, and those that also have an ERGATIVE-ABSOLUTIVE case-frame.

The first class is very small, consisting mainly of verbs of *seeking*, that is, verbs whose OBJECTs not only are unaffected by the action of the verb, but also do not have to exist at all. (See Hale, EFW). Consider the sentence *She sought a unicorn*. A unicorn does not have to exist to be looked for. I illustrate the Warlpiri construction below.

(92) Ngarrka-ngku ka-rla *karli-ki* warri-rni.
Man-ERG PRES-DAT boomerang-DAT look for-NPST.
A man is looking for a boomerang. [EFW. 44(a)]

The DATIVE in an ERGATIVE-DATIVE construction can control a *kurra* clause, which I take to be evidence that these DATIVEs are OBJECTs, just as the DATIVEs with ABSOLUTIVE SUBJECTs are OBJECTs.

(93) Kurdu-ku kapu-rna-rla warri-rninj-i-ni [*pirnki-ngka*
Child-DAT FUT-1sg-DAT seek-INF-LATIVE-NPST cave-LOC
warru-wapa-nja-kurra-ku.]
around-go-INF-OCOMP-DAT
I'll go and look for the child while he's walking around in the cave. [Data sent by Mary Laughren to K. Hale, May 1976.]

Exactly the same pattern of agreement is observed as with the ABSOLUTIVE-DATIVE verb: Clitic 2s agree with the DATIVE, and Clitic 1s agree with the ERGATIVE. Third person singular DATIVEs have to be registered by *rla* in the AUX. The SUBJECTs and OBJECTs of these verbs need not be overt.

The verbs which can have either ERGATIVE DATIVE or ERGATIVE ABSOLUTIVE case arrays, fall into two types. As well, the presence of certain preverbs may determine the choice of the ERGATIVE-DATIVE frame. The first type consists of a small class of verbs which are semantically similar to the verbs with intensional objects just described. The second type represents a productive alternation, which I will call the CONATIVE or *attempted action* rule. Interestingly, the operation of this lexical rule is signalled in the AUXILIARY.

The first type consists of verbs which can mean either an act of doing something to X, or an act of doing something in search of X. For example, the verb *nyanyi* can mean either 'to see', as in (94), or 'to look for', as in (95). Similarly, *pangirni* means 'to dig', as in (96), or 'to dig for', as in (97) and (98).

(94) *Pirli* *yali* ka-npa *nya-nyi* kuja-ka wanta-ngku
rock-ABS that.rem PRES-2sg see-NPST REL-PRES sun-ERG
kankarlarra-ngurlu panti-rni (..)?
above-EL spear-NPST
Can you see the sun where it is shining from above that hill? [pantirni]

(95) Nyampu ka-rna-*rla* *warru-nya-nyi* *watiya-ku*, yungu-rna
Here PRES-1sg-DAT around-see-NPST tree-DAT REAS-1sg
rdilykirdilyki-paka-rni.
break-hit-NPST
I'm looking around here for a tree to chop up. [nyanyi]

(96) Kuja-ka-lu yangka *rdaku-rlangu* *pangi-rni*, yapa-ngku,
REL-PRES-3pl the hole-E.G.-ABS dig-NPST person-ERG
ngula -ka-lu, piki-ngki paka-rni.
that -PRES-3pl pick-ERG hit-NPST
When people dig holes for example, they pierce it (the ground) with a pick. [pakarni]

(97) *Pangu-rnu* -lpa-lu-*rla* milpirnpa-rla *warna-ku.*
dig-PAST -PAST-3pl-DAT burrow-LOC snake-DAT

They dug in the burrow for the snake. [milpirnpa]

(98) Milyi-ngka -*rla* *pangi-ka* walya-ngka kanuṛiju *ngapa-ku*.
loose.earth-LOC -DAT dig-IMP dirt-LOC under water-DAT.
Dig for the water in the loose earth below the surface. [milyi]

In each instance, the DATIVE is registered in the AUX.

Unlike the ABSOLUTIVE-DATIVE verbs, the ERGATIVE-DATIVE verbs do not have alternant forms consisting of just an ERGATIVE SUBJECT. If there is no overt OBJECT, and no overt registration in the AUX, the OBJECT is interpreted as third person definite (and usually singular). This suggests that the alternations are different in nature. Whereas the ABSOLUTIVE-DATIVE alternation involves an alternation between a one-place predicate and a two-place predicate, with DATIVE being assigned to the additional argument, the ERGATIVE-DATIVE/ ABSOLUTIVE alternation for a verb like *nyanyi* represents an alternation between two argument-taking predicates, one with an object of perception which is attained, and the other with a object of perception, which is not necessarily attained. Similarly, the two case-arrays for *pangirni* are related in much the same way as the entries for *dig up* and *dig for* are in English. That is, the alternation is between two lexical entries which differ in meaning. In the *dig up* predicate, the *digger* directly affects the *thing dug* (by digging it up). In the *dig for* predicate, the *digger* does not directly affect anything because he need not necessarily find anything.

2.3.1.2.1 The Conative

Certain classes of ERGATIVE-ABSOLUTIVE verbs (mostly verbs of contact) have an alternative case-array in which the nominal marked ABSOLUTIVE is marked DATIVE instead. Hale (EFW) gives a detailed account of this alternation, calling it the *Conative*, a term taken from Athapaskan linguistics. Semantically, the alternation resembles the English[43] alternation between verbs of contact with and without the preposition *at*.

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43. The *Conative* in Warlpiri also resembles a similar alternation in Finnish, in which the PARTITIVE case is used on OBJECTS instead of ACCUSATIVE for the Attempted Action meaning. See Carlson (1979).

(99) I kicked at/pushed at/shoved at/pulled at/punched at/shot at the door.

I kicked/pushed/shoved/pulled/punched the door.

The forms without *at* presuppose achieved *contact*. The forms with *at* do not presuppose achieved *contact*.

(100) **I shot John.** *entails*: John is hit by a missile.

(101) **I shot at John.** *does not entail*: John is hit by a missile.

The same is true of the Warlpiri counterpart:

(102) Ngarrka-ngku ka *marlu* luwa-rni.
Man-ERG PRES kangaroo-ABS shoot-NPST
A man shoots the kangaroo.

In (102) a missile must touch the kangaroo for the sentence to be appropriate. But in (103), no missile need touch the kangaroo — only the attempt to shoot is described in the sentence. (104) is a parallel example.

(103) Ngarrka-ngku ka-rla-jinta *marlu-ku* luwa-rni.
Man-ERG PRES-CON-DAT kangaroo-DAT shoot-NPST
The man is shooting at the kangaroo.

(104) *Maliki-ki* -rla-jinta paka-rnu watiya-rlu wirriya-pardu-rlu
dog-DAT -CON-DAT hit-PAST stick-ERG boy-DIM-ERG
The little boy tried to hit the dog with a stick. [pakarni]

The rule is not a relation-changing rule. Unlike the alternation of DATIVE OBJECT and DATIVE OBLIQUE that I described for ABSOLUTIVE DATIVE verbs, the *Conative* alternation does NOT change an OBJECT into an *at* OBJECT in English, or into a DATIVE in Warlpiri. There are two reasons. First, as I suggested in 1.3.2, relation-changing rules do not change meaning so radically. If the *Conative* rule were just a relation-changing rule, nothing would lead us to expect the entailment differences given above. Second, there is no alternation in function. The *at-OBJ* in English is an OBJECT, and so is the

DATIVE in Warlpiri. The *at*-OBJ in English is an OBJECT[44] because it can undergo PASSIVE:

(105) John was shot at.

Similarly, the DATIVE in Warlpiri is an OBJECT, because it can control *kurra* clauses.

(106) Ngarrka-ngku -rla-jinta *marlu-ku* pantu-rnu, *marna*
Man-ERG- CON-DAT kangaroo-DAT spear-PAST, grass-ABS
nga-rninja-kurra-ku.
eat-INF-OCOMP-DAT
The man speared at the kangaroo (while it was) eating grass. [EFW: 294]

In Warlpiri, there is no evidence that the *Conative* DATIVE is ever anything but an OBJECT. The evidence for the $OBLIQUE_{dlr}$/OBJECT alternation with ABSOLUTIVE-DATIVE verbs was that the DATIVE did not have to be registered, and, furthermore, the argument did not even have to have DATIVE case. In the *Conative* construction, the DATIVE argument is always registered, and there is no alternative case-marking possible, such as ALLATIVE.

It is actually quite hard to formulate a semantic redundancy rule to express the semantic difference between the Attempted and Achieved Action verbs. At first glance the solution appears to be to add a component: X TRY. Thus, *shoot at* would be X TRY (X SHOOT Y). However, this cannot be correct, because the semantic component *try* focusses on the SUBJECT, whereas the outward morphological change representing the addition of this component focusses on the OBJECT: in English by the use of the preposition *at* for the OBJECT, in Warlpiri by the use of DATIVE case instead of ABSOLUTIVE case on the OBJECT, and in Finnish by the use of PARTITIVE case on the

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44. It might be possible to argue that in English the *at*-OBJECT alternates between an $OBLIQUE_{goal}$ and an OBJECT, using the same arguments that Bresnan (1980a) proposed for the *laugh/laugh at* alternation. Marginally, the *at*-OBJECT can have the properties of a PP rather than of a complex verb, and so can undergo clefting and adverb insertion.

?It was at the prisoners that they shot.

?Where is the man they shot so often at?

OBJECT instead of ACCUSATIVE case.

Perhaps the solution lies, as Hale suggested to me, in the definition of the verbs that take the *Conative*. They consist mainly of verbs of contact. Contact implies both *affecting* (the thing that is affected), and motion (motion of the affecting Agent). The OBJECT is at once Goal of motion and Thing Affected. If these two semantic relationships are split up, and the OBJECT function is linked to just one of these relationships, it must be the Goal, because, while *affecting* entails motion, motion does not entail *affecting*. But arguments which are linked to the semantic role: Goals of motion, and to the grammatical function OBJECT, are normally associated with DATIVE case, not with ABSOLUTIVE. Therefore it is appropriate to assign DATIVE case to the OBJECT.

Let us now turn to another interesting property of the *Conative* alternation. Observe that in (106) the registration in the AUX for verbs with *Conative* case arrays is *rla-jinta* not *rla*. The clitic sequence *rlajinta* is normally used if a verb has two DATIVE arguments. Observe what happens if the OBJECT is not third person singular, as in (107).

(107) Kurdu-ngku ka-ju-rla ngaju-ku paka-rni.
Child-ERG PRES-1sg-CON I-DAT hit-NPST
The child is hitting at me. [EFW: 249]

The DATIVE OBJECT is first person singular, and is registered by *ju*. But the clitic *rla* also appears, although there is no third person DATIVE argument in (107). That is, if the *Conative* alternation is present, the OBJECT is represented by two pronominal clitics, rather than one.[45] This is an interesting case of discontinuous expressions providing the

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45. Pragmatically, the double registration of the *Conative* in the AUX reduces ambiguity. If the DATIVE OBJECT were registered with just *rla*, the sentence would be ambiguous:

The child hits at me; The child hits me for him/on account of him.

However, observe that this double registration is not present for the ABSOLUTIVE/DATIVE OBJECT alternation of verbs such as *nyanyi*. A sentence such as the one below is ambiguous.

Nyampu ka-rna-rla warru-nya-nyi (..)
Here PRES-1sg-DAT around-see-NPST
I'm looking around here for it.
I'm looking around at it on behalf of him.

same information. Both the AUX and the lexical entry of the verb reflect the choice of the *Conative* or Attempted Action case-array.

The common denominator in both (106) and (107) is tne clitic *rla*. Suppose that, while normally the clitic *rla* indicates a third person DATIVE argument, it can optionally signal that the verb has the *Conative* case-array. This can be expressed by saying that *rla* optionally has some *feature* referring to the Attempted Action rule, rather than equations of person and number. Some way of expressing the dependency between the verb and the AUX is required. We cannot stipulate in the lexical entry of verbs with the *Conative* alternation that *rla* be present, because *rla* is a morpheme, not a function or a functional feature. But LFG does provide a way of describing long-distance dependencies by means of *constraint equations* (see 2.2.6.2), which refer to features. If a plausible sentence-feature can be found to attach to *rla*, then the requirement for the double registration can be expressed by placing a constraint equation in the *Conative* verb's lexical entry which demands the presence of the feature attached to *rla*.

Clearly, features should not be postulated without good motivation. Therefore it is desirable to find evidence in other languages for some appropriate feature that could encompass *attempted action*. My guess is that the right feature is *aspectual*. Carlson (1979) shows that the Attempted Action marker in Finnish, the PARTITIVE, is also closely associated with Aspect. Now, aspect is clearly a feature of sentences. I will assume that the Warlpiri equivalent is also aspectual.[46] I will call this feature *conative*. I assume that both the verb and *rla* refer to this feature. The verb has the constraint equation:

$$\uparrow Conative =_c +$$

and *rla* has the defining equation:

$$\uparrow Conative = +.$$

The constraint equation on the Verb means that the sentence must have the feature *Conative*. The only way the sentence can get this feature is if the AUX, whose features

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46. Obviously, more work must be done on the semantics of the interaction between the *Conative* and the other aspect markers on the AUX, as well as with time adverbials, for this aspectual feature to be properly motivated.

percolate up to the sentence, has a *Conative* marker.[47] In *Conative* sentences, the f n *rla-jinta* will be analysed as containing a *Conative* marker, *rla*, and a third person sing- -. OBJECT marker *jinta*, while the form *ju-rla* will be analysed as containing the *Conative rla* and a first person singular OBJECT marker *ju*.

2.3.1.2.2 **DATIVE preverbs**

One final point should be mentioned. It appears that DATIVE OBJECTs can be introduced by a couple of preverbs. The preverb *wapal* when added to a transitive verb emphasises the fact that the OBJECT is being sought by means of the action described in the verb, and requires the ERGATIVE-DATIVE case-frame.

(108) M: Ngari -li-rla *wapalpa-rra-pangi-ka* wurra-ngku + wurru
Just -pl-DAT seek-THERE-dig-IMP still-ERG + EMP
Keep on digging for it! [H59Dial: 8.81]

But this preverb can also occur on an intransitive verb, in which event it adds a DATIVE argument, but does not affect the ABSOLUTIVE case of the SUBJECT.

(109) Kala-rla wapal-ya-nu wawirri-ki
USIT-DAT seek-go-PAST kangaroo-DAT
They would go after kangaroos. [H66, PSJ:1117]

One speaker allowed the DATIVE in this type of sentence to control a *kurra* clause:

(110) Ngajulu -rna-rla wapal-ya-nu kurdu-ku *yula-nja-kurra-ku.*
I -1sg-DAT seek-go-PAST child-DAT cry-INF-OCOMP-DAT
I went looking for the child which was crying. [JS]

He rejected a version in which the complementiser suffix *rlarni* (which cannot be controlled by an OBJECT, as I will show in 2.3.2.1.) replaced the *kurra* clause, under the same interpretation. This suggests that the DATIVE in (110) really is an OBJECT.

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47. Some mechanism is also needed to block the *Conative* use of *rla* when the verb is non-*Conative*. Possibly semantics should rule this out.

There are a couple of other preverbs besides *wapal*, which apparently introduce DATIVE arguments. Nash (1982) says that DATIVE arguments introduced by the preverbs: *jangkardu* 'against' and *pulpurru* 'onto', and perhaps also *yaarl* 'down on' can control *kurra* clauses. These preverbs attach to both transitive and intransitive verbs. The following examples show *jangkardu* attached to intransitive and transitive verbs. (The examples are taken from the *Warlpiri Survey* p.21 - 22)

(111) Ngarrka ka-rla karnta-ku *jangkardu*-karri-mi.
man-ABS PRES-DAT woman-DAT against-stand-NPST
The man is standing aggressively with respect to the woman.

(112) Maliki-rli ka-rla kurdu-ku warna *jangkardu*-ka-nyi-rni.
Dog-ERG PRES-DAT child-DAT snake-ABS against-carry-NPST-HERE
The dog is bringing the snake up to, say, frighten the child.

It appears that the OBJECT of (111) is *karnta-ku*, and the OBJECT of (112) is *kurdu-ku*. (113) shows the preverb *yaarlpa* on a transitive verb and an intransitive verb. (114) shows *pulpurru* on a transitive verb.

(113) Watiya -npa-ju *yaarlpa*-rdaalypa-paka-rnu. *Yaarlpa* -ju wanti-ja.
tree-ABS -2sg-1sg down.on-athwart-chop-PAST. down.on -1sg fall-PAST
You chopped the tree down on top of me. It fell on top of me. [HNotes: 44]

(114) Watiya -npa-ju *pulpurru*-rdaaly-paka-rnu ngaju-ku.
tree-ABS -2sg-1sg on-athwart-chop-PAST I-DAT
You chopped the tree down on me.

Consistency prevents there from being 2 lexical forms filling the same function. Therefore a verb cannot select two OBJECTS. Therefore if *jangkardu*, say, attaches to a transitive verb, the old object of that verb must have some other function, probably an OBJECT 2, on the LFG account. Unfortunately, the data are not clear. When asked the sentence given in (115), a sophisticated speaker gave the judgment indicated, which suggests that for this speaker, contrary to the dialect mentioned by Nash, *jangkardu* does not introduce an OBJECT, but rather a DATIVE with some other function.

(115) Karnta-ngku -rla *jangkardu* paka-rnu kurdu-kariyinyanu-ku
woman-ERG -DAT against hit-PAST child-another-DAT
parnka-nja-kurra. / *parnka-nja-kurra-ku.*
run-INF-OCOMP / run-INF-OCOMP-DAT
The woman hit it against the other child when it was running.
(underlined Ns are coreferent). [David Nash, April, 1983]

Nash reports that the speaker had difficulty with this sentence. He does not discuss whether the the reading is only for the unmarked *kurra* clause, or for the *kurra* clause with DATIVE case as well (which would be surprising).

It is worth pointing out that *jangkardu* at least has been found on its own, as an independent predicate,[48] like an adposition, taking a DATIVE argument.

(116) Janta-janta-yi-nyi ka-nkulu-nyanu ngajuku *jangkardu.*
lend-give-NPST PRES-2pl-refl I-DAT against.
You fellows are lending each other a knife (passing a knife around) against me. [935]

(117) Rdaku -lu pangu-rnu, warlu -lpa-lu kiji-rninja-parnka-ja
hole-ABS -3pl dig-PAST, firewood-ABS -PAST-3pl throw-INF-run-PAST
rdaku-ngka Japanangka-ku *jangkardu.*
hole-LOC Japanangka-DAT against.
They dug a hole and then threw firewood into the hole for the destruction of Japanangka. [Wangarla-kurlu: 11]

Observe that when *jangkardu* appears on its own, it can still take a DATIVE argument. But, this DATIVE is not registered in the AUX. Therefore the DATIVE cannot be an argument of the verb. That is, only by combining the preverb *jangkardu* with the verb as a preverb, can the DATIVE argument of *jangkardu* act as a DATIVE argument of the matrix

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48. In the following example, the predicate *jangkardu* is negated by the PRIVATIVE complementizer *wangu*, and still has a DATIVE argument:
Maju-jarri-nja-wangu *kapi* *nyina-karla,* *ngurrju-nyayirni,*
bad-INCH-INF-PRIV FUT sit-IRR good-VERY-ABS
yapa-ku *jangkardu-wangu.*
person-DAT against-PRIV-ABS
He was going to try and not become belligerent, to stay peaceful without aggression towards anyone. [jangkardu]

verb.

2.3.1.3 Summary

In this section, I have discussed the two unusual forms of case-linking for transitive verbs. I have tried to show in what respects these two classes differ from regular ERGATIVE ABSOLUTIVE case-linking. I have shown that, with respect to agreement in the AUXILIARY, the three classes of transitive verb behave alike (except for third person DATIVE). I have also shown that the DATIVEs can control *kurra* complements just as the ABSOLUTIVE OBJECT can. I have proposed lexical rules relating the unusual case-linking to its orthodox counterpart. Whereas the ABSOLUTIVE-DATIVE alternation parallels the alternation in English between *talk* and *talk to*, the ERGATIVE DATIVE alternations parallels the alternation between *shoot* and *shoot at*. Semantically, the three types of ERGATIVE DATIVE construction discussed (those with no alternation, those alternations without the double registration, and alternations with double registration – the *Conative*) have in common the fact that the OBJECT is not necessarily affected by the action denoted by the verb, and need not even exist. I have argued that neither type of alternation involves a relation-changing rule, since meaning is not preserved, and since the DATIVE appears to be an OBJECT. I have shown that the interesting use of the double DATIVE registration on the AUX to herald a semantic redundancy rule can be expressed in terms of a constraint equation involving an Aspect feature, although further work is needed to justify it. I have also shown that DATIVE OBJECTs can be introduced by preverbs.

2.3.1.4 Ditransitive verbs

Warlpiri has a small class of ditransitive verbs. Semantically, they correspond to the classes of ditransitive verbs found in well-known European languages – verbs of *physical transfer*: *yinyi* (X-ERG gives Y-ABS to Z-DAT), *puntarni* (X-ERG takes Y-ABS away from Z-DAT), *yirrarni* (X-ERG puts Y-ABS on Z-LOC/ALL/DAT), *yilyami* (X-ERG send Y-ABS to Z-DAT), and verbs of *transfer of information*: *ngarrirni* (X-ERG tell Y-ABS (story, words) to Z-DAT) and *payirni* (X-ERG ask Y-ABS (person) about Z-DAT). An

example is given in (118).

(118) Ngarrka-ngku kapi-*rla* kurdu punta-rni karnta-ku.
man-ERG FUT-DAT child-ABS take.away-NPST woman-DAT.
The man will take the child away from the woman.

The *Taker* has ERGATIVE case, the *Thing Taken* has ABSOLUTIVE case, and the *Person Taken from* has DATIVE case. The DATIVE argument is registered in the AUX by the normal DATIVE clitic *rla*. Non-third person singular DATIVEs are registered by Clitic 2s. The ABSOLUTIVE argument is not registered. Even if the ABSOLUTIVE is not third person singular it cannot be registered. Thus (119) cannot mean: *The man will take me away from him.* (O2 stands for OBJECT 2, and O for OBJECT).

(119)

	O2	O	
Ngarrka-ngku	kapi- *ji*	*-rla*	punta-rni.
Man-ERG	FUT- 1sg	-DAT	take.away-NPST.

*The man will take me away from him.

Consistency rules out assigning both the DATIVE and the ABSOLUTIVE the function OBJECT in (119). Andrews (1982b) argues that the DATIVE is an OBJECT 2, while the ABSOLUTIVE is an OBJECT, because he claims that most DATIVES are OBJECT 2s. Under this analysis, Warlpiri would be like French (see 1.3.1), in which it is argued that the indirect object (*à* OBJECT) is really an OBJECT 2 because it does not undergo passive. I claim, however, that in Warlpiri the DATIVE is the real OBJECT, and that the ABSOLUTIVE is the OBJECT 2. Under this analysis, Warlpiri ditransitives would resemble English ditransitives, which, it is argued in Bresnan (1980b), have the indirect object as the OBJECT, and the direct object as the OBJECT 2.

Under Andrews' account the *kurra* control facts are stated as *control by an OBJECT or an OBJECT 2*. This naturally leads to the question: what happens in ditransitives? Consider the following sentence, in which an ABSOLUTIVE controls a *kurra* clause in a ditransitive.

(120) Yu-ngu -rna-rla kurdu [*parraja-rla* *nguna-nja-kurra*]
give-PAST -1sg-DAT child-ABS coolamon-LOC sleep-INF-OCOMP
yali-ki.
that.rem.-DAT
I gave the child which was sleeping in the coolamon to that one.

Mary Laughren writes of this sentence:

> "I detect a very strong tendency to interpret the dative argument as the subject of the INF + kurra. People are happier with *yungu-rna-rla kurdu [jarda nguna-nja-kurra-ku]* [i.e. I gave the child to the one who was sleeping - shown by the DATIVE suffix on *kurra* - JS]. I asked an older more 'naive' speaker who certainly gave me the impression that the *-kurra* goes more naturally with the DATIVE-marked argument..... X [a linguistically sophisticated speaker] has thought more about the *-kurra* business and doesn't accept it with the ABS argument of *yungu* ('gave'), only with the DATIVE arg."[49]

If it is assumed that the DATIVE in ditransitives is the OBJECT, and that the ABSOLUTIVE is the OBJECT 2, then there is a simple explanation for the unacceptability of (120): *kurra* is controlled by OBJECTS, not OBJECT 2s.[50]

2.3.2 Other DATIVEs

So far, I have shown that DATIVE-marked arguments can act as the OBJECTs of transitive sentences and ditransitive sentences. However, this is not the only use of arguments marked with DATIVE case. There are three other uses of arguments marked with suffixes homophonous to the DATIVE which deserve mention. The first type pattern with DATIVE OBJECTs, in that they are registered in the AUXILIARY. Following Hale (EFW), I will call these *Adjunct DATIVEs*. The second type are *purposives*. Only occasionally are they registered in the AUX. The third type denote *time-periods*, and they apparently are never registered in the AUX.

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49. Data sent to J. Simpson, February, 1982.
50. A cautionary note: Laughren found a couple of younger speakers of Warlpiri who were prepared to accept (120).

2.3.2.1 Adjunct DATIVEs

Adjunct DATIVEs may be introduced in isolation, or by a preverb. I will first look at Adjunct DATIVEs introduced in isolation.

Almost any transitive or intransitive sentence can contain a DATIVE-marked argument, which acts semantically as an ethical DATIVE; it indicates that the action or state of the event denoted by the verb has some relation to another argument, whether the action is for the benefit or detriment of the referent of the DATIVE, or whether there is a possession relation between the referent of the DATIVE and some argument.

(121) Karnta ka-rla kurdu-ku parnka-mi.
Woman-ABS PRES-DAT child-DAT run-NPST
The woman is running for the sake (security) of the child. [Survey]

(122) Ngarrka-ngku ka-rla kurdu-ku karli jarnti-rni.
man-ERG PRES-DAT child-DAT boomerang-ABS trim-NPST
The man is trimming a boomerang for the child/the child's boomerang. [EFW: 60]

The Adjunct DATIVE is registered in the AUX by Clitic 2s.

Adjunct DATIVES can also occur with verbs which have DATIVE OBJECTs, whether the SUBJECTS of these verbs are ERGATIVE or ABSOLUTIVE.

(123) Ngarrka-ngku ka-ju-rla ngaju-ku karli-ki warri-rni.
Man-ERG PRES-1sg-DAT I-DAT boomerang-DAT seek-NPST
The man is looking for a boomerang for me.

The following sentence shows that an ABSOLUTIVE OBJECT retains its OBJECT status in the presence of the Adjunct DATIVE, and can still control a *kurra* clause.

(124) Nantuwu-rlu kalaka-ju ngaju-ku marlaja-kati-rni kurdu
horse-ERG ADMON-1sg I-DAT Cause-tread-NPST child-ABS
jarda nguna-nja-kurra.
sleep lie-INF-OCOMP
The horse might tread on my child while it's sleeping. [R. Granites]
or: The horse is liable to tread on the child beause of me.

This contrasts with ditransitives, in which apparently only the DATIVE can control a *kurra* clause.

Consistency demands that the two DATIVE-marked nominals, *I* and the *boomerang*, be assigned different grammatical functions in (123). But why multiply functions? Why not call the Adjunct DATIVE an OBJECT 2? First, unlike the ABSOLUTIVE OBJECT 2 in a ditransitive, an Adjunct DATIVE is registered in the AUX. Second, *Consistency* rules out assigning the Adjunct DATIVE OBJECT 2 status, because ditransitives can also have Adjunct DATIVES, as (125) illustrates. (S stands for SUBJECT, and Adj.D. for Adjunct DATIVE)

(125)

		S	Adj.D	O		
Karli	kapi	*-rna*	*-ngku*	*-rla*	punta-rni	kurdu-ku.
boomerang-ABS	FUT	-1sg	-2sg	-DAT	remove-NPST	child-DAT

I'm going to take your boomerang away from the child. [Hale, p.c.]

If both the ABSOLUTIVE and the Adjunct DATIVE have the function OBJECT 2, Consistency will be violated. Therefore, the Adjunct DATIVE must have a role distinct from OBJECT 2. I assume that it is an OBLIQUE. However, the language accords this OBLIQUE special status compared with other OBLIQUES, by registering it in the AUX, and with respect to control phenomena, as I will show. Therefore, I will not commit myself as to what kind of OBLIQUE it is, and simply call it an Adjunct DATIVE.

A partial test of the difference between Adjunct DATIVEs and DATIVE OBJECTs is provided by the OBLCOMP complementizer suffix *rlarni*. The SUBJECT of a non-finite clause marked with *rlarni*, as Hale (EFW) shows, is either controlled by Adjunct DATIVEs, or else it has an overt unregistered DATIVE SUBJECT. It cannot be controlled by a DATIVE OBJECT.

(126)

Ngana-ku	-rla	Jakamarra-rlu	maliki	paka-rnu	*karli*
Who-DAT	-DAT	Jakamarra-ERG	dog-ABS	hit-PAST	boomerang-ABS

jarnti-rninja-rlarni?
trim-INF-OBLCOMP
Whose dog did Jakamarra hit while that person was trimming a boomerang? [Survey]

In this sentence. an Adjunct DATIVE acting as a possessor controls the SUBJECT of the *rlarni* clause. The SUBJECT of the *rlarni* clause cannot be the ABSOLUTIVE OBJECT *maliki*. In the following sentence, the nominal *lani* takes a DATIVE OBJECT (see 2.4.2 for a discussion of the OBJECT function of this DATIVE.). But, this DATIVE cannot act as the controller of the SUBJECT of the *rlarni* clause. Instead the overt DATIVE nominal is interpreted as an unregistered DATIVE acting as the overt SUBJECT of the *rlarni* clause:

(127) Ngaju -rna-rla lani maliki-ki *jarda-ngkarni*
I-ABS 1sg-DAT afraid-ABS dog-DAT sleep-OBLCOMP
*I am afraid of the dog while it's sleeping.
OK:I am afraid of him while the dog is sleeping. [Mary Laughren, letter to J. Simpson]

In (128), *wangkami* takes a DATIVE OBJECT, and apparently this DATIVE OBJECT cannot control a *rlarni* clause.

(128) *Ngarrka ka-rla kurdu-ku wangka-mi, [*nguna-nja-rlarni*(-ki)]
man-ABS PRES-DAT child-DAT speak-NPST, lie-INF-OBLCOMP-(DAT)
The man is speaking to the child that is lying down.

An interesting piece of evidence suggesting that the controller of a *rlarni* clause cannot be an DATIVE OBJECT , but must be an ADJUNCT DATIVE, comes from the behaviour of the verb *puntarni* 'take X away from Y'. For one sophisticated speaker[51] (Tim Shopen p.c.), this verb has two diatheses, one with an ABSOLUTIVE that is registered in the AUX, and an unregistered DATIVE, as in (129), and one with a DATIVE that is registered in the AUX, and an unregistered ABSOLUTIVE, as in (130).

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51. Another speaker rejected the construction with the registered ABSOLUTIVE.

(129) Punta-rni ka-*jana* tala-patu manu wawarta
take.away-NPST PRES-3pl money-PL-ABS and blanket-ABS
jajanyanu-ku *wiyarrpa-ku.*
grandmother-DAT poor.thing-DAT.
He takes money and blankets from his poor grandmother. [JS]

(130) Punta-rni ka-*rla* tala-patu *jajanyanu-ku*
take.away-NPST PRES-DAT money-PL-ABS grandmother-DAT
wiyarrpa-ku.
poor.thing-DAT.
He takes away money from his poor grandmother. [JS]

The prediction is that an unregistered DATIVE is not an OBJECT and therefore cannot control a *kurra* clause, but can control a *rlarni* clause, while the registered DATIVE is probably an OBJECT, and so should be able to control a *kurra* clause. The speaker with the two diatheses partly confirmed the prediction, by volunteering a *rlarni* clause for the unregistered DATIVE in (131), and a *kurra* clause for the registered DATIVE in (132).

(131) Punta-rni ka-jana tala-patu manu wawarta
take.away-NPST PRES-3pl money-PL-ABS and blanket-ABS
jajanyanu-ku *wiyarrpa-ku* *jarda* *nguna-nja-rlarni*
grandmother-DAT poor.thing-DAT sleep-ABS lie-INF-OBLCOMP
He takes money and blankets from his poor grandmother while she is sleeping. [JS]

(132) Punta-rni ka-rla tala-patu *jajanyanu-ku*
take.away-NPST PRES-DAT money-PL-ABS grandmother-DAT
wiyarrpa-ku, *jarda* *nguna-nja-kurra-ku*
poor.thing-DAT sleep-ABS lie-INF-OCOMP-DAT
He takes away money from his poor grandmother. [JS]

2.3.2.1.1 **Adjunct DATIVE preverbs**

Adjunct DATIVE Preverbs can introduce DATIVE arguments. These preverbs attach to verbs (intransitive (133), transitive (134) or ditransitive (135) to form a new verb, and

they introduce[52] an Adjunct DATIVE argument, in contrast to the DATIVE OBJECT preverbs discussed in 2.3.1.2.2. Semantically, the argument they introduce resembles the ethical DATIVE meaning that an Adjunct DATIVE in isolation has, rather than the directional meaning associated with preverbs such as *jangkardu*.

(133) Kurdu ka-rla karnta-ku *marlaja*-yula-mi.
Child-ABS PRES-DAT woman-DAT cause-cry-NPST
The child is crying because of the woman. [Survey]
(The child is crying (now) and the woman is the cause of it, e.g. she hit him).
INTRANSITIVE VERB

(134) Ngarrka-ngku ka-rla warlpa-ku pipa *marlaja*-ma-ni.
Man-ERG PRES-DAT wind-DAT paper-ABS cause-take-NPST
The man picks up the paper because of the wind. [Survey]
(The wind causes the man to pick up the paper, because the wind scattered it, say).
TRANSITIVE VERB

(135) Ngarrka-ngku ka-jana-rla karnta-patu-ku kurdu-ku miyi
Man-ERG PRES-3pl-DAT woman-PL-DAT child-DAT food-ABS
marlaja-yi-nyi.
cause-give-NPST
The man gives the food to the child because of the women. [Survey]
or: The man gives the women's food to the child.
DITRANSITIVE

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52. Occasionally Adjunct DATIVE preverbs appear without an accompanying DATIVE-marked argument; in i. the preverb *marlaja* does not introduce a registered DATIVE argument, (although it is conceivable this has been mistranscribed.)

i. *A: Kula-lpa-npa-jana paka-karla – – lawa. Kajika-npa marlaja*
not-PAST-2sg-3pl hit-IRR – – no. ADMON-2sg Cause
wanti tarnnga pali-mi kajika-npa.
fall-NPST always die-NPST ADMON-2sg
You wouldn't hit them. You might fall for good because of it, you might die. [H60Dial: 7.160]

Furthermore, as I will discuss later in this section, when presented with two DATIVE ADJUNCT preverbs on one verb, one speaker would register only one DATIVE in the AUX. This suggests that one of the preverbs failed to introduce a registerable argument.

The argument introduced by an Adjunct DATIVE preverb can control a *rlarni* clause, whether the verb is transitive, as in (136) and (137), or intransitive, as in (138).

(136) Kala-lu-jana-rla kurdu *jurnta*-marda-rnu *karla-nja-rlarni.*
USIT-3pl-3pl-DAT child-ABS away-hold-PAST dig-INF-OBLCOMP
They (girls) would hold the kids for them (women) while they (women) were digging. [NM]

(137) Ngarrka-ngku ka-rla kurdu-ku karli *kaji*-jarnti-rni,
man-ERG PRES-DAT child-DAT boomerang-ABS benefactive-trim-NPST,
ngana-nja-rlarni(-ki)
lie-INF-OBLCOMP-(DAT)
The man is trimming a boomerang for the child lying down.

(138) Kala-rla *jurnta*-nyina-ja karnta-ku + ju *jarda-ngkarni*
USIT-DAT away-sit-PAST woman-DAT + EUPH sleep-OBLCOMP
yankirri + ji.
emu-ABS + EUPH
The emu would sit opposed to the woman while she slept. [KMY]

The Preverb can be thought of as a preposition added to the verb which brings with it an additional argument. The Preverb specializes the general meaning of the Adjunct DATIVE. Thus the following preverbs specify the relation of the DATIVE to the action or state denoted by the verb:

jurnta	away from, removal from	**Adversative**
jirrnganja *yirrkirnpa*	with (dependent)	**Comitative**
kaji *ngayi*	for, on behalf of	**Benefactive**
marlaja *marlangka*	on account of, made possible by	**Causative**
piki(*piki*)	in danger of, under threat of	**Hazard**

[Data from Nash, 1982]

These DATIVEs are registered in the AUX. If the DATIVEs introduced by the Preverbs and the Adjunct DATIVE introduced by the verb on its own are both Adjunct DATIVEs, then *Consistency* should rule out their co-occurrence. *Consistency* should also prevent a verb from having two Adjunct DATIVE preverbs attached.

Unfortunately, there is not much data available, and preverbs behave differently from each other.[53] For instance, data from the Survey suggests that *piki* cannot co-occur with the preverb *jurnta*, but then for that speaker, *piki* cannot co-occur with a DATIVE OBJECT either:

(139) *Nantuwu ka-rla-jinta Japanangka-ku
horse-ABS PRES-DAT-DAT Japanangka-DAT
piki-jurnta-parnka-mi-rra warna-ku + ju.
hazard-away-run-NPST-THERE snake-DAT + EUPH
The horse is running away from Japanangka and might get bitten by the snake.

When I asked a speaker for a sentence with *jurnta-marlaja-wantimi* (Adversative-Causative-fall), the speaker found it difficult to imagine a plausible situation,

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53 Different Adjunct DATIVE preverbs apparently have different co-occurrence possibilities with DATIVE OBJECTS For instance, data from the *Warlpiri Survey* suggests that, for the speaker involved, the preverb *piki* 'in danger of' cannot co-occur with some ABSOLUTIVE-DATIVE and ERGATIVE-DATIVE verbs:

*?Ngarrka ka-rla-jinta karnta-ku kurdu-ku piki-wangka-mi.
man-ABS PRES-DAT-DAT woman-DAT child-DAT danger-talk-NPST
The man is speaking to the child in danger of the woman.
*Ngarrka-ngku ka-rla-jinta karli-ki pirriya-ku
man-ERG PRES-DAT-DAT boomerang-DAT cold-DAT
piki-warri-rni.
danger-seek-NPST
The man is looking for the boomerang in danger of the cold.

Whether this is a semantic restriction or whether there is a genuine syntactic restriction is unclear. In any case, other speakers accept *piki-wangkami*.

and came up with the following sentence in which, although there are two preverbs,[54] only one DATIVE is registered.

(140) Yapa-ku -rla yujuku *jurnta-marlaja*-wanti-ja.
person-DAT -DAT house-ABS away-cause-fall-PAST
The person's humpy fell down.

I then suggested the following situation: "the man's horse runs away from him because I shouted". The speaker still would not use *jurnta-marlaja-parnkami*, but rather split it up into several sentences:

(141) *Jurnta*-parnka-ja -rla nantuwu ngarrka-ku.
away-run-PAST -DAT horse-ABS man-DAT
The horse ran away on the man.

(142) Purla-nja-warnu-ku ju *marlaja*-parnka-ja nantuwu,
shout-INF-ASSOC-DAT -1sg cause-run-PAST horse-ABS
The horse ran away because of me shouting.

wati-ki -rla *jurnta*-parnka-ja nantuwu.
man-DAT -DAT away-run-PAST horse-ABS.
The horse ran away on the man.

More work needs to be done with other speakers, but the general conclusion appears to

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54. The speaker did exactly the same with the combination *marlaja parnkami piki* (cause run hazard):

Ngajulu -rna-rla marlaja-parnka-ja piki wati-ki warna-kurra
I-ABS 1sg-DAT cause-run-PAST hazard man-DAT snake-ALL
I ran towards the snake in danger because of the man.

(In this example the preverb follows the verb, a common occurrence.) The most plausible account appears to be that the semantic role associated with the preverb *marlaja* has DATIVE case, while the semantic role associated with *piki* is expressed by the ALLATIVE, rather than the DATIVE. This alternation of ALLATIVE and DATIVE is reminiscent of the DATIVE/ALLATIVE alternation with the verb *wangkami* 'speak' in 2.3.1.1.

be that a sentence can have only one registered Adjunct DATIVE.[55]

2.3.2.2 Unregistered DATIVEs

I showed in 2.3.1.1.1. that the DATIVE argument associated with the ABSOLUTIVE-DATIVE verbs is sometimes unregistered, and I suggested that it acts as an OBLIQUE argument, and not as an OBJECT. In this section I will look at two different semantic classes of unregistered arguments with suffixes homophonous to the DATIVE. Whether these suffixes actually represent the DATIVE is a matter for debate.

The first class are *purposives*. In (143), the ERGATIVE-ABSOLUTIVE case-frame of the verb *pangirni* is selected. The *purpose* of the digging is 'rabbits', which has DATIVE case, and is not registered in the AUX.

(143) *Mujunyku-ku* ka-rlipa pangi-rni ngulya.
rabbit-DAT PRES-1plin dig-NPST hole-ABS
We dig holes for rabbits. [mujunyku]

Compare the following sentence with *pangirni* in which an Adjunct DATIVE (a reflexive dative benefactive) is registered.

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55. However, Swartz (1982), records as acceptable a sentence with two registered DATIVEs, where one is introduced by a preverb and the other in isolation, as a benefactive.

Wati-ngki *ka-palangu-rla* *marlu* *kurdu-ku*
man-ERG PRES-3du-DAT kangaroo-ABS child-DAT
marlaja-luwa-rni *karnta-jarra-ku.*
cause-shoot-NPST woman-DU-DAT
Because of the two women, the man is shooting the kangaroo for the child. (Swartz's (24)).

Assuming that the Benefactive and the DATIVE argument introduced by *marlaja* are both Adjunct DATIVEs, it would appear that a sentence can have two Adjunct DATIVEs. More work needs to be done to investigate such sentences.

(144) Walya-ngka ka-*nyanu* ngulya pangi-rni kaninjarrakari - -
ground-LOC PRES-refl hole-ABS dig-NPST inside - -
mamupururnpa-rlu.
barking spider-ERG
The barking spider digs itself a hole straight down in the earth. [mamupururnpa]

The semantic role of the registered DATIVE in this example is different from the semantic role of the unregistered DATIVE in (143).

A DATIVE-marked argument corresponding semantically to a purposive can occasionally be registered in the AUX, if the argument is a nominal and not a nominalized verb.

(145) Kala-rnalu-*rla* watiya paka-rnu *janganpa-ku* mayingka-rlu.
USIT-1plex-DAT tree-ABS chop-PAST possum-DAT axe-ERG
We used to chop trees with an axe for possums. [pakarni]

Unfortunately, I do not have evidence for control of *kurra* or *rlarni* clauses to determine whether this nominal is functioning as an OBJECT or as an Adjunct DATIVE. If it functions as an OBJECT, then its presence could be due to an extension of the OBJECT/OBLIQUE$_{dir}$ alternation to include OBLIQUE$_{purp}$ as well. If it functions as an Adjunct DATIVE, this would presumably be due to the rather large range of meanings encompassed by the Adjunct DATIVE.

In 2.3.1.1., I noted that the DATIVE argument of *wangkami* could occasionally be expressed by an ALLATIVE instead. So, too the idea of purpose can be expressed by an ALLATIVE instead of a DATIVE, as in (146).

(146) Kuja-ka-lu-jana yangka puluku langa paji-rni
REL-PRES-3pl-3pl the bullock-ABS ear-ABS cut-NPST
langa larra-kurra ngulaju yungu-lu-jana milya-pinyi.
ear.mark-ALL that REAS-3pl-3pl show-NPST
They cut the cows' ears to make an ear-mark so as to identify them. [langa larra]

The relation between the use of the ALLATIVE used as a purposive, and the DATIVE used as a purposive is very close. They can co-occur, as in (147).

(147) *Kuyu-kurra + jala* *ya-nu* *wirlinyi* *panti-rninja-ku.*
meat-ALL + CLEARLY go-PAST hunting spear-INF-DAT
He's gone hunting for game to spear it. [ML: NUM]

In (147) a nominal has ALLATIVE attached, and a nominalized verb has DATIVE attached.

This brings us to the most troublesome aspect of calling the purposive use of the suffix *ku* a DATIVE, namely that if *ku* attaches to a nominalized verb, it can never be registered in the AUX.[56]

(148) Wirlinyi ka-lu mardukuja-patu ya-ni *wardapi-ki*
hunting PRES-3pl woman-PL-ABS go-NPST goanna-DAT
paka-rninja-ku, (..)
kill-INF-DAT
The women are going hunting to kill goannas. [mardukuja]

Semantically, there seems no reason why a nominalized verb with *ku* used as a purposive should differ from a nominal with *ku* used as a purposive. The syntactic difference led Hale (EFW) and Nash (1980) to treat the purposive use of the DATIVE as a homophonous suffix, which attaches to both nominals and nominalized verbs, but can never be registered in the AUX. I have taken the other tack, of treating them as identical, because, as I will discuss in 3.5.2, the failure of the purposive use of *ku* to receive extra case-marking may be explained if it is actually the case-suffix, and not some homophonous suffix. However, on my account, the fact that nominals with the *ku* suffix used as purposives can be registered, but not nominalized verbs, so far has no explanation.

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56. I have found one possible counterexample.
Kala-rla-jinta *parnka-ja* *marlu-ku* *rdarri-mardi-rninja-ku*
USIT-DAT-DAT run-PAST kangaroo-DAT catch.hold-INF-DAT
marlu-ku + lku *mata-ku + lku.*
kangaroo-DAT + THEN tired-DAT + THEN
He ran after the kangaroo in order to catch hold of the exhausted kangaroo. [pinyi]
In this example there are two DATIVEs in the AUX; one cross-references the DATIVE *marlu-ku*, and it is possible, although not necessary, that the other cross-references the nominalized verb complement *rdarri-mardi-rninja-ku*. But it could cross-reference some other purpose.

The second type of unregistered DATIVE are DATIVEs of duration of time, or of frequency. They are never registered. They have no particular semantic relation to the verb, and it seems likely that they have the function ADJUNCT.

(149) *Marilpi* *jirrama-ku* -lpa-ju nyina-ja-rra Lajamanu-rla
month two-DAT -PAST-1sg sit-PAST-THERE Lajamanu-LOC
He stayed away from me for two months at Lajamanu.. [marilpi]

(150) Yapa ka-lu ya-ni warrki-wangu-rla manjiki
person-ABS PRES-3pl go-NPST work-PRIV-LOC expedition
ngurra-patu-ku.
camp-PL-DAT
When there is no work, people go camping out for a few days. [manjiki]

(151) *Jirrama-ku* -ju paka-rnu.
two-DAT -1sg hit-PAST
He hit me twice. [jirrama]

Thus, DATIVE-marked arguments can have a variety of functions. In 2.3.4 I will speculate on ways of relating the Adjunct DATIVE and the OBJECT uses by means of a feature system.

2.3.3 Reflexives

In this section I will outline the basic properties of reflexives and reciprocals in Warlpiri, and introduce the notion of *antecedent feature* which will prove useful in the description of the obviation system in Chapter 6.

Reflexives and reciprocals are represented in the AUX by a pronominal clitic: *-nyanu*, which can cross-reference an ABSOLUTIVE Object (152) or a DATIVE OBJECT or

an Adjunct Dative (153)[57]

(152) Jampi-rni ka-*nyanu*.
lick-NPST PRES-refl
She (cow) is licking herself. [H59Notes]

(153) Lirra wilji-kirli -lpa-*nyanu*-rla mitingi-rla + ju
Mouth stubborn-PROP-ABS -PAST-refl-DAT meeting-LOC + EUPH
wangka-ja turaki-ki.
speak-PAST truck-DAT.
He kept on and on insisting at the meeting on the truck for himself (that he should get the truck). [lirra wilji]

Since *-nyanu* appears in Clitic 2 position, it is not surprising that it can represent both ABSOLUTIVE and DATIVE 3rd person singular reflexive OBJECTs, as well as Adjunct DATIVEs. It can also represent third person singular DATIVEs, as in (154), in which it represents a Benefactive.

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57. It should be noted that the argument status of the reflexive is not always clear. There are uses of certain verbs which seem to require reflexives. In particular, these include verbs of lying and telling the truth, as the following dialogue shows.

M: Lawa-wangu ngarrpangarrpa-ma-ni ka-nkulu-nyanu!
no-PRIV lie-CAUS-NPST PRES-2pl-refl
'Bull, you're lying!'
A: Lawa - - kajika-rna-ju yimi ngarri-rni.
no - - POT-1sg-1sg story-ABS tell-NPST
'No, I'm telling the truth.'
M: *Yijardu -lu-nyanu yimi ngarri-ka!*
truth-ABS -pl-refl story-ABS tell-IMP
'Tell the truth!' [H60Dial: 7.2]

Other examples include *luurr-ngunami* 'to feel sorrow in sympathy with someone'. The reflexive is also used in some idioms:

Wati-ngki -nyanu kuyu-ngku paka-rnu.
man-ERG -refl meat-ERG hit-PAST
Lit. The man hit himself with meat
i.e. The man had his fill of meat. [pakarni]
Kati-rni ka-rna-ju.
tread-NPST PRES-1sg-1sg
Lit. I tread on myself
i.e. I am submitting. [katirni]

(154) Ngulya ka-*nyanu* pangi-rni wiri nyanungu-rlu + ju.
burrow-ABS PRES-refl dig-NPST big-ABS he-ERG + EUPH
He digs himself a big burrow. [pangirni]

Nyanu is unmarked for Number, and so can appear with non-singular subjects, as in (155) and (156)

(155) Wirliya *-rli-nyanu* paji-rni.
foot-ABS -1duin-refl cut-NPST
We will cut our feet. [H59Notes]

(156) Kalaka-*rlipa-nyanu* mata-rra-ma-ni?
ADMON-1plin-refl tired-THERE-CAUS-NPST
But aren't we liable tc get tired? [H60Dial: 7.10]

The reflexive also appears with abstract predicates such as *to consider oneself X*:

(157) Kuluparnta + ja nganta kuja-ka-*npa-nyanu* rikini-jarri?
anger-ABS + EVID QUOT REL-PRES-2sg-refl reckon-INCH-NPST?
So, you reckon you're a good fighter? [H60Dial: 7.23]

Nyanu is used as a reciprocal also, with transitive verbs, as in (158) and (159), and ditransitives, as in (160).

(158) Maliki-jarra-rlu ka-*pala-nyanu* kulu-ngku nya-nyi.
Dog-DU-ERG PRES-3du-refl anger-ERG see-NPST
The two dogs are looking at each other in anger. [H59Notes]

(159) Warla-paji-ka kalaka-*pala-nyanu* pi-nyi.
stop-IMP ADMON-3du-refl fight-NPST.
Stop them lest they fight! [H59Notes]

(160) Jarnku *-rlu-nyanu* yi-nyi, kurlarda, karli.
Distributive -1duin-refl give-NPST, spear-ABS, boomerang-ABS
Let's swap the spear for the boomerang. (i.e. let's give each other the boomerang and the spear). [H59Notes]

Nyanu must be used in a reflexive/reciprocal sentence unless the SUBJECT is 1st person singular, or the sentence is imperative singular. If the SUBJECT of the sentence is first person singular, the reflexive is expressed in the AUX with the first person object pronoun.

(161) Ngajulu ka-*rna-ju* mapa-rni yurlpa-ngku.
I PRES-1sg-1sg rub-NPST ochre-ERG
I paint myself with red ochre. [H59Notes]

If the verb is imperative the normal second person clitic 2 pronoun is used with singular subjects, as in (162), while *nyanu* is used with non-singular subjects, as in (163).

(162) Yampi-ya *-ngku* mapa-rninja-wangu-rlu.
Leave-IMP -2sg(OBJ) rub-INF-PRIV-ERG
Don't paint yourself! [H59Notes]

(163) Yampi-ya *-lu-nyanu* mapa-rninja-wangu-rlu.
Leave-IMP -pl-refl rub-INF-PRIV-ERG
Don't paint yourselves! [H59Notes]

The fact that *nyanu* can have antecedents of different persons and number will be represented in the lexical entry for *nyanu* by not specifying person and number features for the reflexive clitic. To express the fact that *nyanu* cannot refer to a 1st person singular subject, I will assume that the morpheme *nyanu* has a morphological restriction that it cannot follow the morpheme *-rna* which happens to be the 1st person singular Subject morpheme.

Reflexive verbs are transitive. The evidence for this is first that the SUBJECT retains ERGATIVE case-marking, and second that an Object control complementizer clause can be controlled by the understood reflexive object. Both properties are illustrated in (164).

(164) Kurdu-ngku ka-*nyanu* nya-nyi, *karri-nja-kurra.*
child-ERG PRES-refl see-NPST stand-INF-OCOMP
The child sees himself standing. [EFW]

If *nyanu* created a lexically intransitive verb, as *se* does in French (Grimshaw 1980),[58] then an OBJECT-controlled clause would not be possible.

I assume that the introduction of this null pronominal by the reflexive clitic *nyanu* is obligatory if the function represented by *nyanu* is OBJECT, because *nyanu* does not seem to co-occur with overt nominals having the OBJECT function. These are ungrammatical, as in (165).

(165) *Nyuntulu-rlu ka-*npa-nyanu* nyuntulu nya-nyi.
You-ERG PRES-2sg-refl you-ABS see-PAST
You see yourself.

Although *nyanu* has been not been found with coreferential overt OBJECTs, it has been found with overt nominals representing the Adjunct DATIVE function.

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58. This argument was made by Hale (1982 c), in a problem set in which he compares Warlpiri and the neighbouring language group Aranda, in terms of Grimshaw's (1980) analysis of French reflexives. He shows that, while Warlpiri reflexives do not intransitivize the verb, and therefore can control Object-controlled clauses, Aranda reflexives do intransitivize the verb, and therefore cannot control Object-controlled clauses. Furthermore, the case of the SUBJECT in an Arandic reflexive is that of the SUBJECT of an intransitive sentence.

The difference between Aranda and Warlpiri is perhaps predictable, because in Aranda, the reflexive is marked on the verb, not on a separate AUX. See Hale (to appear). Nash (1980) observes that in Nyangumarda all pronominal clitics are marked on the verb, and the reflexive also intransitivizes the verb. He quotes Edmondson as saying that in ergative languages it is very common for verbally encoded reflexives to have subjects with ABSOLUTIVE case (i.e. to undergo intransitivization). (Jerold A. Edmondson, 1978: Ergative languages, accessibility hierarchies governing reflexives and questions of formal analysis. In *Valence, semantic case and grammatical relations*, ed. by Werner Abraham. Studies in Language Companion Series, Vol. 1. Amsterdam: John Benjamins B.V.). Marantz (1981) extends the observation to languages with lexical reflexives generally.

(166) (..)ka-*nyanu* kuyu nyanungu-ku pi-nyi - liwirringki-rli + ji
PRES-refl meat-ABS it-DAT hit-NPST - lizard sp.-ERG + EUPH
It kills animals for itself, that type of lizard.

(167) Palkarni -rlipa-*nyanu* yalumpu + ju ngalipa-ku-jala
scarce-ABS -1plin-refl that.near + EUPH 1plin-DAT + CLEARLY
marda-rni.
hold-NPST
Let's keep those scarce things just for ourselves. [CHECK]

I have no explanation for this difference. Overt nominals could be prevented from co-occurring with the reflexive clitic *nyanu* by assuming that *nyanu* introduces a null pronominal, (↑OBJ PRED) = '*PRO*'. However, this equation (↑PRED) = '*PRO*' would have to be optional when *nyanu* has the function Adjunct DATIVE.[59]

Apart from this, the account of reflexives being developed by Bresnan, Halvorsen and Maling in recent work (Halvorsen, 1982, Maling, 1982) can easily be extended to Warlpiri. They suggest that most reflexivization facts can be represented by features referring to the *domain* of reflexivization, and to the *antecedent* of the reflexive. The *domain* of reflexivization in Warlpiri is the minimal clause - reflexivization is clause-bounded. This can be expressed with the feature [± NUCLEAR]. If a pronoun is [+ NUCLEAR], it must find its antecedent within the minimal clause nucleus containing both it and the predicate of which it is an argument. In Warlpiri the reflexive pronoun is [+ NUCLEAR].

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59. Hale (PWT) considers the Adjunct DATIVE to form a clause-nucleus, with the DATIVE as its argument-taking predicate. This option is not open to me, in sofar as I have tried to argue that the Adjunct DATIVE is in some sense a selected argument of the verb, and, as such, is registered in the AUX. If the DATIVE case-suffix were acting solely as an argument-taking predicate, rather than as the indicator of a relation between an argument and an argument-taking predicate, it is not clear how this could be reconciled with the account of agreement in the AUX. Why should some ADJUNCTs (Adjunct DATIVEs) be registered in the AUX, when other ADJUNCTs (such as time-DATIVES and most purposives) are not registered in the AUX? It is also not clear to me how a uniform account of AUX registration could be made, if the one set of suffixes registers both DATIVEs which act as argument-taking predicates, and DATIVEs which act purely as case-markers.

The *antecedent* of reflexive/reciprocals and normal pronouns is stated in terms of the *antecedent feature* [±SUBJECTIVE]. The reflexive/reciprocal pronominal clitic *nyanu* has as part of its lexical entry an antecedent feature [+ SUBJECTIVE], meaning that its antecedent must be a SUBJECT within the domain of reflexivization. The 1st person singular pronominal clitic (clitic 2) will optionally have the antecedent feature [+ SUBJECTIVE]. It will also be unspecified for the NUCLEAR feature. This will allow it to appear freely as an OBJECT in a non-reflexive clause, and also as a reflexive OBJECT. Ordinary Clitic 2 pronouns have the antecedent feature [- NUCLEAR] (represented in the lexical entry of *ngku* by the equation ↑NUCLEAR = -). This prevents them from having any argument of the minimal finite clause as their antecedent.

The situation with respect to null pronominals which are not represented by a pronominal clitic is interesting. It seems that in finite clauses the reflexive clitic *nyanu* is required for the reflexive reading. (168) apparently means that the cow is licking something definite, other than itself.

(168) Jampi-rni ka
lick-NPST PRES
She (cow) is licking it

However, in non-finite clauses, a null pronominal can be reflexive, as in the example given in 2.2.8., repeated here for convenience.

(169) *Japanangka* *karlarra-jarri-ja* *Jupurrula(-rlu)* *nya-nja-ku.*
Japanangka-ABS west-INCH-PAST Jupurrula see-INF-DAT
Japanangka$_i$ went west [for Jupurrula$_j$ to see PRO = himself$_j$]

I assume that the default equations attached to the AUX (see 2.3.4.1 for further discussion) in the absence of overt pronominal clitics also include the feature [- NUCLEAR]. Therefore a null pronominal which is not associated with an overt pronominal clitic in a finite clause must find its antecedent outside the clause, and cannot be reflexive. The AUX does not appear in non-finite clause, and so its default equations also do not appear, including the [- NUCLEAR] restriction. Therefore a null pronominal in a non-finite clause may be reflexive.

The lexical entry for *nyanu* is as follows:

nyanu
[SUBJECTIVE = +]
[NUCLEAR = +]
¬((↑SUBJ PERS) = 1) and ((↑SUBJ NUM) = sg))
¬((↑IMPERATIVE) = 1) and ((↑SUBJ NUM) = sg))
Category: Clitic 2

By virtue of being a Clitic 2, *nyanu* can represent both OBJECTs and Adjunct DATIVEs. The first negative equation prevents *nyanu* from occurring with a first person singular SUBJECT. The second negative equation prevents *nyanu* from occurring in an IMPERATIVE sentence, if the SUBJECT is singular.

Unfortunately, not enough is yet known about the behaviour of reflexive DATIVE OBJECTS and ABSOLUTIVE OBJECT 2s to say whether more needs to be specified about disjoint reference in Warlpiri.

2.3.4 Summary of pronominal clitics

So far, we have seen that Clitic 1s agree with the SUBJECT, whether ERGATIVE or ABSOLUTIVE. Clitic 2s agree with the OBJECT, whether ABSOLUTIVE or DATIVE, and with Adjunct DATIVEs. They do not agree with ABSOLUTIVE OBJECT 2s. The clitic *rla* agrees with third person singular DATIVE OBJECTs or Adjunct DATIVEs, or else it acts as a *Conative* marker. I will outline some constraints on agreement, and then discuss the representation of paradigmatic gap information. The data in this section comes for the most part from Hale (1973a).

First, there are constraints which appear to be due to a limit on the number of clitics in a given position in the AUX. Thus no more than one Clitic 2 can appear. Therefore, it is not possible for the AUX to agree with an OBJECT (whether ABSOLUTIVE or DATIVE), and an Adjunct DATIVE, if neither is third person singular.

(170)

		O2	O			
*Ngarrka-ngku	ka	*-ju*	*-ngku*	ngaju-ku	nyuntu	punta-rni.
Man-ERG	PRES	-1sg	-2sg	I-DAT	you-ABS	take-NPST

The man is taking you away from me. (*or* me away from you).

(171) *Ngarrka-ngku lpa *-ju* *-ngku* /lpa *-ngku* *-ju* nyuntu-ku
man-ERG PAST -1sg -2sg /PAST -2sg -1sg you-DAT
warru-rnu ngaju-ku.
seek-PAST I-DAT
The man was looking for you for me.
or
The man was looking for me for you.

Following Hale (1973a) and Nash (1980), I assume that the pronominal clitics each have their own position within a *clitic template*. *Ju* and *ngku* are both Clitic 2s. There is only one position for Clitic 2s, and so *ju* and *ngku* cannot co-occur. The fact that an AUX can agree with a DATIVE OBJECT and an Adjunct DATIVE if one of them is third person singular, is explained on the assumption that the third person DATIVE clitic *rla* is not a Clitic 2 but rather a Clitic 3.

(172)

		Adj.D	O			
Ngarrka-ngku	ka	-jana	-rla	karnta-patu-ku	kurdu-ku	miyi
Man-ERG	PRES	-3pl	-DAT	woman-PL-DAT	child-DAT	food-ABS

marlaja-yi-nyi.
cause-give-NPST
The man gives the food to the child because of the women. [Survey]

It is clear that Clitic 2s such as *jana* can co-occur with *rla*. But what happens when a sentence has two third person singular DATIVE arguments? I have shown that both Adjunct DATIVEs and DATIVE OBJECTS can be represented by *rla*. So one might expect to find the sequence *rla-rla* representing two DATIVE third person singular arguments. However, I have also shown that the clitics seem to have positions, and that only one element can fit into a position; thus the sequences *ngku-ju* and *ju-ngku* are ruled out. If *rla* also occupies one position, *rla-rla* should be ungrammatical. And in fact it is. Instead, another clitic, *jinta*, follows *rla*:

(173) Ngajulu-rlu ka-rna-*rla-jinta* karli-ki warri-rni.
I-ERG PRES-1sg-DAT-DAT boomerang-DAT seek-NPST
ngarrka-ku.
man-DAT
I am looking for the boomerang for the man.

It is not possible to say whether *jinta* refers to the 'boomerang' or to the 'man'. The combination *rla-jinta* simply records the fact that the sentence has a third person DATIVE OBJECT and a third person Adjunct DATIVE.

The second constraint on agreement is a curious constraint on the appearance of the clitic *rla* which is neither purely syntactic nor purely morphological. The clitic *rla* cannot follow a Clitic 2 which represents an ABSOLUTIVE argument[60] whether an OBJECT as in (174), or an OBJECT 2, as in (175).

(174)

		O	Adj.D			
*Paka-rni	ka	*-ngku*	*-rla*	nyuntu	ngarrka-ngku	karnta-ku.
Hit-NPST	PRES	-2sg	-DAT	you-ABS	man-ERG	woman-DAT.

The man hits you for the woman.

(175)

	O2	O			
*Ngarrka-ngku	kapi-*ji*	*-rla*	ngaju	punta-rni	karnta-ku.
man-ERG	FUT-1sg	-DAT	1sg-ABS	take.away-NPST	woman-DAT.

The man will take me away from the woman.

The ill-formedness of sentences such as (175) cannot be attributed to a purely morphological restriction on clitic positions, because, as (176) shows, *ju-rla* is a well-formed clitic sequence, when both clitics represent DATIVE arguments.

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60. On Andrews (1982) account, the generalization is rather that *rla* cannot follow a pronominal clitic representing an OBJECT, because all ABSOLUTIVE clitic 2s represent OBJECTs, and DATIVE clitic 2s represent OBJECT 2s or Adjunct DATIVEs. In my account, many DATIVEs are OBJECTs. Therefore I must state the generalization in terms of CASE, not grammatical function.

(176)

		Adj.D	O			
Ngarrka-ngku	ka	*-ju*	*-rla*	ngaju-ku	karli-ki	warri-rni.
Man-ERG	PRES	-1sg	-DAT	I-DAT	boomerang-DAT	seek-NPST

The man is looking for a boomerang for me.

But nor can the restriction be a purely syntactic restriction such as:

No non-SUBJECT ABSOLUTIVE argument can co-occur with a DATIVE OBJECT or ADJUNCT DATIV ..

Sentences such as (174) and (175) are quite acceptable with third person singular ABSOLUTIVE OBJECTs or OBJECT 2s. These of course are never overtly registered in the AUX.

(177)

		S	O		
Ngajulu-rlu	kapi-*rna-ngku*		nyuntu-ku	karli-patu	punta-rni.
I-ERG	FUT	-1sg-2sg	you-DAT	boomerang-PL -ABS	take-NPST

I am going to take the boomerangs away from you. [EFW: 53]

(178)

		Adj.D			
Paka-rni	ka	*-rla*	kurdu	ngarrka-ngku	karnta-ku.
Hit-NPST	PRES	-DAT	child-ABS	man-ERG	woman-DAT.

The man hits the child for the woman.

The next question is, do these constraints on the person and number of registered pronominal clitics affect just the morphemes in the clitic clusters, or do they also affect the person and number of nominals bearing grammatical functions? Are these constraints constraints on morphemes, or on grammatical functions? I have shown that third person singular nominals can be OBJECT 2s. If the constraints apply just to the clitic clusters, unregistered ABSOLUTIVE nominals and pronominals of any persons and number should appear freely with the function OBJECT 2. But if the constraints are actually constraints on grammatical functions, then unregistered ABSOLUTIVE OBJECT 2s should be ruled out. In this event, only third person singular ABSOLUTIVE OBJECT 2s will appear.

At first glance, it seems that both predictions are partly true. Unregistered non-singular third person OBJECT 2s appear, while unregistered non-third person OBJECT 2s apparently do not. Thus, (179), which has an unregistered plural third person OBJECT 2, is quite acceptable:

(179) Ngajulu-rlu kapi-*rna-ngku* nyuntu-ku karli-patu punta-rni
I-ERG FUT-1sg-2sg 2sg-DAT boomerang-PL-ABS take-NPST
I am going to take the boomerangs away from you. [EFW:53]

But (180), which has an unregistered second person ABSOLUTIVE, is apparently not acceptable for all speakers.[61]

(180)

O
*Ngarrka-ngku ka-*ju* ngaju-ku nyuntu punta-rni.
Man-ERG PRES-1sg I-DAT you-ABS take-NPST
The man is taking you away from me.

Since (180) is ill-formed , and (179) is acceptable, it appears that there is a contrast between number-agreement and person-agreement. This is not the only difference betweeen number and person agreement. Laughren (1977) argues that in ordinary non-ditransitive sentences, registration of number is not obligatory for third person – it depends on animacy and emphasis. An inanimate or unemphatic non-singular argument is less likely to be registered as non-singular. NUMBER is not an obligatory feature of third person nominals; it is there for emphasis. Since number registration is not obligatory for SUBJECTs and OBJECTs, there is no reason why sentences with unregistered non-singular ABSOLUTIVE OBJECT 2s should be unacceptable. Since registration of the SUBJECT's and OBJECT's Person is obligatory, it is not surprising that sentences with

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61. Laughren (1977) and Swartz (1982) report that a number of speakers do accept this. I assume that there is a dialect split; the speakers recorded by Laughren and Swartz have judgments more like those recorded in Tsunoda (1978) for Jaru. I will limit myself to the dialect described by Hale.

unregistered non-third person OBJECT 2s should be unacceptable.[62]

Observe that Clitics 2 and 3 express a disjunction: they represent either a DATIVE OBJECT or an Adjunct DATIVE. This disjunction will make representing agreement with pronominal clitics very awkward. Hale suggested to me that perhaps a better way of looking at grammatical functions is in terms of a *feature system*. This feature system should link OBJECTs and Adjunct DATIVEs as opposed to OBJECT 2s on the one hand, to capture the AUX agreement facts. A feature ±OBJECT can be used to link OBJECTs and Adjunct DATIVEs. On the other hand, the feature system should link SUBJECTs, OBJECTs and OBJECT 2s as opposed to Adjunct DATIVEs, because the latter are only loosely connected with the essential meaning of argument-taking predicates. A feature ±DIRECT can be used here. The feature system is given below.

(181) **Grammatical function feature system**

	SUBJECT	OBJECT	DIRECT
SUBJECT	+	−	+
OBJECT	−	+	+
OBJECT-2	−	−	+
Adj.DAT	−	+	−
OBLIQUEs	−	−	−

Clitic 1s agree with elements bearing the feature [+ SUBJECT]. Clitic 2 and Clitic 3 agree with elements bearing the feature [+ OBJECT].

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62. In the closely related language of Jaru (Tsunoda 1978) it appears that if a verb is ditransitive, unregistered first and second person direct objects CAN appear in ditransitives. Tsunoda also notes that elsewhere first and second person are not always registered. If indeed registration of first and second person is not obligatory, as it is in Warlpiri, it is possible that similar factors sanction the appearance of unregistered first and second person OBJECT 2s in Jaru.

Another use that this feature system can be put to is with regard to *antecedent features*. Recall that, when discussing reflexives, I used the antecedent feature [±SUBJECTIVE], and I said that the reflexive pronoun *nyanu* has the antecedent feature [SUBJECTIVE +]. I see no reason why the same features could not be used both for decomposing grammatical functions and for antecedent features, since antecedent features describe the grammatical function that the antecedent of an anaphor has.[63] See 6.5.

2.3.4.1 Paradigmatic gaps

In this section I will briefly discuss the expression of default agreement with pronominal clitics. I assume, as I suggested in the previous section, that the pronominal clitics form a *template*, and that each class of clitics has its own position.

Perhaps the simplest way of approaching the paradigmatic gap information is to take two types of sentence which I passed over earlier. These are: intransitive sentences with unregistered SUBJECTS and transitive sentences with unregistered OBJECTS. I will discuss how to express the information about an unregistered SUBJECT in an intransitive sentence, and then compare this approach with that needed for unregistered OBJECTs.

2.3.4.1.1 Unregistered SUBJECT

Consider the following sentences:

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63. Bresnan (1982a) and Halvorsen (to appear) assume that antecedent features are defined in terms of the primitives SUBJECT and OBJECT. In a sense, as Bresnan pointed out to me,my proposal is the reverse: defining grammatical functions in terms of primitive features.

(182) Ngarrka ka parnka-mi.
man-ABS PRES run-NPST
A man is running.

(183) *Ngarrka ka-rna parnka-mi.
man-ABS PRES-1sg run-NPST
A man is running.

(184) Ngaju ka-rna parnka-mi.
I-ABS PRES-1sg run-NPST
I am running.

(185) *Ngaju ka parnka-mi.
I-ABS PRES run-NPST
I am running.

Consistency rules out (183), because the features of the third person singular SUBJECT clash with the SUBJECT features registered on the AUX – namely first person singular.

But *Consistency* cannot rule out (185), because there are no overt person/number features on the AUX. *Completeness* (see 2.2.6.1.2) cannot rule it out, because the overt pronominal *ngaju* provides the person/number features for the SUBJECT.

The problem is that the general constraints on the well-formedness of f-structures (*completeness, consistency* and *coherence*) merely ensure that the sources of information about functions and features provide complete, consistent and coherent information. Nothing forces the *absence* of a particular source of information to be meaningful, IF the information is provided by some other source. Thus, since in (185) information about the SUBJECT is provided by *ngaju*, the f-structure for (185) is thus complete and coherent. And the f-structure will be consistent too, unless a way can be found of interpreting the absence of an overt pronominal clitic as third person singular.

One way of doing this is to assume a third person morpheme which is just like other pronominal clitics, except that it happens to be phonetically null. Alternatively, the information can be carried in the form of default equations which demand that the

SUBJECT's person be third, failing the presence of an overt clitic.[64] Adopting either of these solutions will ensure that an AUX without any overt person/number features for SUBJECT is compatible only with a third person SUBJECT. *Consistency* will rule out the appearance of an unregistered first or second person SUBJECT, because the default interpretation (the interpretation in the absence of other information on the AUX) is for a third person SUBJECT.

I will adopt the default equations approach, rather than the zero morpheme approach, for reasons that will become clear in the next section. These equations are attached to a position in the pronominal clitic template. They act as an *elsewhere condition* on the clitic 1 position; that is, if no overt pronominal clitic is inserted, these equations will be inserted. So, filling the clitic 1 position in the template is OBLIGATORY. Otherwise of course nothing would rule out (185) – it would result from a template with an optionally unfilled Clitic 1. Since every finite clause must have a SUBJECT, then, if no overt clitic appears, the default equations must appear. Consistency will rule out unregistered first or second person SUBJECTs.[65]

The entry for the clitic 1 column in the clitic template is given in (186).

---

64. The absence of a SUBJECT clitic is interpreted as third person, whether or not any pronominal clitics follow. In the following sentence there is an understood third person singular SUBJECT, even though the OBJECT clitic is present:

Paka-rni *ka-ju.*
hit-NPST PRES-1sg.
He is hitting me.

65. Since NUMBER registration is conditioned by animacy and salience, I will not treat it as default information.

(186)

[.....]$_{clitic\ 1}$

rna	1sg
n(pa/ku)	2sg
lu	3pl
pala	2du
rli	1duin
rlijarra	1duex
rlipa	1plin
rna-lu	1plex
n-pala	2du
nku-lu	2pl

(↑SUBJ PERS) = 3
(↑SUBJ NUCLEAR) = −
((↑SUBJ DEFINITE) = +

(These last 3 equations are attached together by an elsewhere condition: if none of the overt morphemes is entered in Clitic 1 position, insert these equations).

I have made these equations *defining* equations rather than *constraint* equations. This means that information about person and antecedent features is actually carried by the AUX. The Verb simply introduces the equation (↑SUBJ PRED) = '*PRO*', that is, a PRO unspecified for features. Therefore the null pronominals in finite clauses are more constrained than in non-finite clauses. First, in a finite clause, a null pronominal will have to be third person, whereas in a non-finite clause, a null pronominal will be able to acquire person and number features by control, or from a discourse antecedent. (However, the default will be third person.) Second, in a finite clause, a reflexive argument must be cross-registered in the AUXILIARY. This is expressed by assuming that the AUX specifies that default null pronominals are [− NUCLEAR]; i.e. cannot find their antecedents within the same clause nucleus. A null pronominal OBJECT in a non-finite clause may be reflexive, since therfe is no AUX and so no requirement that it be [− NUCLEAR]. But, since it is very unlikely that in non-finite clauses a null pronominal SUBJECT could have a non-SUBJECT "antecedent" within the same non-finite clause, we may have to assume that, whenever a lexical item introduces the equation ↑SUBJ PRED = 'PRO', it also introduces the equation ↑SUBJ NUCLEAR = −.

2.3.4.1.2 Unregistered OBJECT/OBLIQUE$_{goal}$

Consider the following sentences:

(187) a. Ngajulu-rlu ka-rna-ngku nyuntu nya-nyi.
1-ERG PRES-1sg-2sg you-ABS see-NPST
I see you.

b. *Ngajulu-rlu ka-rna-ju nyuntu nya-nyi.
I-ERG PRES-1sg-1sg you-ABS see-NPST
I see you.

(188) a. Ngajulu-rlu ka-rna ngarrka nya-nyi.
I-ERG PRES-1sg man-ABS see-NPST
I see the man.

b. *Ngajulu-rlu ka-rna nyuntu nya-nyi.
I-ERG PRES-1sg you-ABS see-NPST
I see you.

(187)b is ruled out by *Consistency*. (188)b is not ruled out by *Consistency* at all, unless the absence of an overt clitic 2 morpheme is interpreted as being third person.

I will adopt the same solution proposed for SUBJECTs, of using equations to express the interpretion of *absence* of information as third person. However, observe a crucial difference. The absence of information about Clitic 1 is interpreted as the presence of a third person SUBJECT in EVERY sentence, because every sentence has a SUBJECT.[66] But not every sentence has an OBJECT of course. Therefore, neither *defining equations*

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66. This is perhaps too strong. Sentences such as the following suggest that there can be SUBJECT-less sentences in Warlpiri.

Yali-ki *ka-rla* *wirlinyi-jangka-ku* *manta-karri.*
that.rem-DAT PRES-DAT hunting-SOURCE-DAT be.absent-NPST
That one who went hunting is still absent. [manta-karri]

(Literally the sentence seems to mean *It is absent for the person from hunting.*)
If these sentences do indeed lack a SUBJECT, then one must adopt for SUBJECT clitics an analysis similar to the one which I will propose for Clitics 2s, that is, a conditional constraint equation stating: *If a sentence has a SUBJECT, the SUBJECT's person is 3.*

of the type I proposed for the Clitic 1 position, nor *equality constraint equations* (ones of the form $\uparrow X =_c Y$) will do for the clitic 2 position.

Defining equations and equality constraint equations in clitic 2 position would demand the presence of an OBJECT in the sentence. But if these equations are made obligatory, then they would prevent the appearance of intransitive sentences, since intransitive sentences do not have OBJECTs. If the equations are not obligatory, then nothing forces their appearance in transitive sentences, and so nothing blocks sentences such as (187).[67]

I propose to use a *conditional constraint equation* to express the fact that if, in a transitive sentence there is no overt clitic 2 in the AUX, then the OBJECT must be third person. By making the equation a conditional, I allow for intransitives. Intransitive verbs have no OBJECTs, and therefore the default equations do not apply.

$$(\uparrow \text{OBJ}) \rightarrow \qquad ((\uparrow \text{OBJ PERS}) = 3)$$

This equation means that, if there is an OBJECT in the sentence, its PERSON is 3. The equation will attach to the Clitic 2 slot. Again, I assume that the Clitic 2 slot <u>has</u> to be filled, even if only with the default equation proposed here. That is, the equation just given will be present in the template, even in an intransitive sentence. However, since an 'if-then' structure does not assert the existence of the 'if' part, the equation will also be true if there is no OBJECT, which is the case in intransitive sentences.

Not only OBJECTS but also Adjunct DATIVEs occur in Clitic 2 position. The same equations are needed for them. Since they share the grammatical function feature [+ OBJECT] given in (179), the default equations can be expressed in terms of this feature.

$$(\uparrow \text{OBJECT} = +) \rightarrow \quad ((\uparrow \text{OBJECT} = +) \text{ PERS}) = 3$$

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67. Having a zero morpheme for the third person OBJECT founders at this point too. A zero OBJECT morpheme would have to be optional, so as to allow the existence of intransitive sentences. But if it is optional, then nothing forces its appearance in transitive sentence, and nothing then rules out sentences with unregistered OBJECTs.

That is, if there is no overt clitic 2, then, if there is an OBJECT or Adjunct DATIVE, or both, the person of that OBJECT or Adjunct DATIVE must be third, and the number is probably singular.

The account of default equations presented here encounters difficulties with respect to the Null Element Constraint (Principle 6).

2.3.4.1.3 Paradigmatic gaps and the null-element constraint

Normally, paradigmatic gap information appears as gaps in a paradigm of affixation - such as CASE affixation or tense affixation. Thus the absence of CASE-marking is a gap which is interpreted as NOMINATIVE case, or ABSOLUTIVE case, depending on the language. Similarly, the absence of number inflection on a nominal can generally be interpreted as singular in English. Opinions differ as to which component of the grammar is responsible for default interpretation.[68] However, it is usually possible to attach default equations for CASE, say, to a nominal because the nominal is physically present in c-structure, and so the default equations have a non-null element to attach to. Similarly, default TENSE equations can be attached to a verb. Many languages (for instance Georgian) attach subject and object pronominal clitics to the verb, and make use of paradigmatic gaps to represent third person singular (see Harris (1981)). For example in Nvangumarta[69] (O'Grady, 1963), a close relative of Warlpiri, the pronominal clitics are attached directly onto the verb.[70]

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68. See Neidle (1982) for an account of Russian in which default cases are determined at c-structure, and Andrews (1982) for an account of Icelandic and Warlpiri in which default cases are determined at f-structure. Recall that I am proposing that default case for Warlpiri should be determined in the lexicon.
69. I owe this observation to K. Hale.
70. I have changed retroflexes into digraphs with /r/, and palatals into digraphs with /y/.

	Nyangumarta				Warlpiri			
(189)	**Ruwi**	**-nyi**	**-rni**	**-nti.**	*Luwa-*	*rnu*	*-rna*	*-ngku*
	shoot	-past	-1sgSUBJ	-2sgOBJ	shoot	-past	-1sgSUBJ	-2sgOBJ
	I shot you.							
(190)	**Ruwi**	**-nyi**	**-nyi-**	**n.**	*Luwa*	*-rnu*	*-npa*	*-ju*
	shoot	-past	-1sgOBJ	-2sgSUBJ	shoot	-past	-2sgSUBJ	1sgOBJ
	You shot me.							
(191)	**Ruwi**	**-nyi**	**-n.**		*Luwa*	*-rnu*	*-npa*	
	shoot	-past	-2sgSUBJ		shoot	-past	2sgSUBJ	
	You shot it.							

[Nyangumarta sentences from O'Grady (1963: 80)]

(189) and (190) show overt pronominal clitics for first and second person SUBJECTs and OBJECTs. In (191), however, there is no overt OBJECT marker. But in both languages the OBJECT is understood to be third person singular. The difference between the two languages is simply that in Nyangumarta the default equations are attached to the Verb (probably also in the form of a clitic template), whereas in Warlpiri the default equations are attached to the AUX, which has a particular structural position in the sentence. But, the AUX can be zero, as in the following sentence in which the null perfect aspect has been selected.

(192)	Japanangka-rlu	Ø	pantu-rnu	marlu.
	Japanangka-ERG	PERF	spear-NPST	kangaroo-ABS.
	Japanangka speared a kangaroo.			

The default equations for third person SUBJECT and OBJECT are thus attached to a null element. But this is a clear violation of the Null Element Constraint, which forbids the appearance of null structure in a c-structure tree. (See 1.3.4.2). I contend that the parallels between Warlpiri and Nyangumarta with respect to default information about pronominal clitics are sharp enough to make it desirable to have a uniform account for both. By saying that both languages use clitic templates and that the default information is attached to positions in these templates, some of the similarity can be captured. I can find no way to express this similarity which does not weaken the Null Element Constraint.

I propose adding a clause to the null-element constraint, allowing the appearance of null elements just in case the null element represents a paradigmatic gap.

(193) **The Revised Null-Element Constraint**

> **A non-terminal category cannot exhaustively dominate the empty string *e*, except in the case of constituent control, (where constituent control is the long-distance dependency characterizing wh-movement and similar constructions), and except in the case of null structure created in the morphology by gaps in morphological paradigms.**

2.4 Nominal-headed sentences

In the previous sections I have discussed sentences headed by verbs. In this section, I will discuss sentences headed by nominals. I will first discuss general properties of such sentences, and then compare them with verb-headed sentences.

2.4.1 General properties

Nominals that head sentences mainly consist of *equative* predications (where one item is *equated* with another), or of *identification* predication (where one item is *identified* as being another element, or a member of a class), or of predications that *ascribe* a stative property to something.

The sentences in (194) illustrate equational predication.

(194) a. Kurnturru, nguru.
Sky sky
Sky is heaven. [H59: 363]

b. Kana, karla-ngu.
digging-stick dig-AG
A digging-stick is a digger. [Hale, p.c.]

Hale informs me that equational sentences such as the preceding have a characteristic intonation:

(200) Nyuntu -npa *wati.*
You-ABS -2sg man
You are a (fully-initiated) man. [EFW:2(c)]

(201) Lawa -rna *warlkurru-wangu*
negative -1sg axe-PRIV
I have no axe. [H59: 6]

(202) Wanta + ju *kankarlarra + lku.*
sun-ABS + EUPH up + THEN
The sun is up now. [H59: 255]

The type of predicative interpretation which a nominal may have depends in large part on the meaning of the nominal. Some nominals, like pronominals, are almost always used as arguments of predicates. If pronominals are used as argument-taking predicates, they generally have an *equative* meaning: something is equated with something else. Other nominals, like *kankarlarra* are almost always used predicatively, with a locative interpretation; *kankarlarra* ascribes a position to the argument it is predicated of, namely, *up*. So, whether an element can be used as an argument-taking predicate, or not, depends not on the *category* of the element, but on the *meaning* of the element, as Hale (to appear) observes (see 1.3.4.1 for more discussion).

The interpretation of a nominal as an argument taking predicate or as an argument can also be affected by the suffixing of clitics and suffixes to the nominal. For example, the ubiquitous clitic *ju*, although often apparently used only for euphony, can be used to distinguish between an adverb and an attribute of an argument, as Timothy Shopen pointed out to me.

(203) Wirriya parnka-mi *ngurrju.*
boy-ABS run-NPST good-ABS
The boy runs well.

(204) Wirriya parnka-mi *ngurrju + ju*
boy-ABS run-NPST good-ABS + EUPH
The good boy runs. (T. Shopen, p.c.)

The suffix *pirdinypa* is especially common when an argument-taking predicate has a restrictive reading. (205) shows *pirdinypa* used in a definition.

(205) Nyarnturrji ka-rnalu ngarri-rni – – ngulaju walya + yijala
clod-ABS PRES-1plex call-NPST that dirt-ABS + ALSO
yangka *tardutardu-pirdinypa*.
the round-ONE-ABS
Clod is what we call that dirt, the round lumps. [Hnotes 425]

Pirdinypa is often used for making restrictive attributes of argument-taking predicates other than simple equational, identifying, or property-attributing nominal predicates. For instance, inherently locative predicates such as *kankarli* and *kanunju* in (206) and (207) can be made into restrictive attributes with the help of the suffix *pirdinypa*.

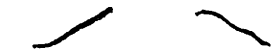
(206) Parrka yangka *kankarli-pirdinypa* + ju – yukuriji.
leaf-ABS the up-ONE-ABS + EUPH green
The leaves at the top are green. [jukurru]

(207) Kula-lpa-rnalu nga-njarla yangka tardu *kanunju-pirdinypa*,
not-PAST-1plex eat-IRR the round inside-ONE-ABS
We can't eat that round thing which is inside, .. [marrkirdi]

Likewise, *pirdinypa* can be attached to argument-taking predicates formed by suffixes (see Chapters 3, 5 and 6 for discussion of these) to create restrictive attributes. (208) contains a nominalized verb *parnkanja* with a PRIVATIVE suffix *wangu* attached, meaning "without running". The suffix *pirdinypa* is used to make it into a restrictive attribute. In (209) an argument-taking predicate created by the SOURCE suffix *jangka* (itself attached to a complex word formed with the PRIVATIVE suffix *wangu*) is made into a restrictive attribute by means of the suffix *pirdinypa*.

(208) Yali kapi-rna marlu + ju panti-rni
that.rem-ABS FUT-1sg kangaroo-ABS + EUPH spear-NPST
parnka-nja-wangu-pirdinypa
run-INF-PRIV-ONE-ABS
I'm going to spear the kangaroo that's running. [Hnotes 52]

(209) Kala manya kuja-ka-lu nga-rni yangka, ngurrju,
BUT tender-ABS REL-PRES-3pl eat-NPST the good-ABS



The nominal predicates in (195) attribute membership in a set to the SUBJECT. They do not have to have the characteristic intonation associated with the equational sentences.

(195) a. Napurrula ngaju-ku-pirdangka.
Napurrula I-DAT-KIN
My sister is Napurrula. [H59:13] [is a member of the Napurrula subsection]

b. Ngaju-ku-pirdangka Jupurrula; papardi.
I-DAT-KIN Jupurrula elder.brother.
My brother, my older brother, is Jupurrula. [H59:13] [is a member of the Jupurrula subsection]

c. Ngati, Napaljarri.
Mother, Napaljarri
My mother is Napaljarri. [H59:13] [is a member of the Napaljarri subsection]

(Note that I have not marked either nominal with ABSOLUTIVE case. I will return to the question of case-marking in nominal-headed sentences in 2.5.1.)

The following sentences show nominals being used to ascribe stative properties to the Subject:

(196) *Ngurrpa* -rna.
ignorant -1sg
I don't know. [H59: 33]

(197) Nyuntu -npa *wiri.*
You-ABS -2sg big
You are big.

(198) *Maliki-kirli* -rna.
Dog-PROP -1sg
I have a dog. [H59: 311]

(199) *Ngana-kurlangu* maliki.
who-POSS dog
Whose dog is it? [H59: 37]

ngulaju yangka kurdu-warnu-rlangu - - manu *marlu*
that the child-ASSOC-E.G.-ABS and kangaroo
kurdu-parnta-jangka yangka *wirriya-wangu-jangka-pirdinypa* - -
child-PROP-SOURCE-ABS the male-PRIV-SOURCE-ONE-ABS
ngula ka-lu nga-rni manya ngurrju.
that PRES-3pl eat-NPST tender-ABS good-ABS
But they eat tender meat, good stuff, the meat from young kangaroos for example, or from kangaroos with babies, meat from female kangaroos, they eat good tender meat. [Hnotes 795]

There is one interesting class of nominals which appear to be used primarily as argument-taking predicates. Unlike normal nominal predicates, they are not stative, they are active. I will call these "action nominals"; they will be discussed at greater length in Chapter 6.

jarda	asleep
kulu	raging, fighting
manjiki	camping-out, holiday
manyu	playing
wajili	chasing
warrki	work
wirlinyi	hunting
wurna	travelling
yantarli	being in camp
yinka	laughing

The semantic and syntactic behaviour of these nominals is not well understood. However, one can point to a few tendencies. They are rarely used as referential nominals. They are also rarely used as matrix predicates. Their main use is as secondary predicates. However, they normally act as free secondary predicates, rather than as restrictive attributes. Needless to say, the class is not homogeneous. Some, such as *manyu*, are more like ordinary nominals than the others. Some can appear as "preverbs" (see 2.5.2). Some, such as *wirlinyi*, *wajili* and *wurna* seem semantically like verbs.

To conclude this discussion, one of the main properties of Warlpiri differentiating it from European languages such as English is that

Any nominal can be used as an argument-taking predicate, allowing for its meaning.

2.4.2 Comparison with verb-headed sentences

Since nominals can be used as argument-taking predicates, it is important to distinguish which of the properties of verbs that we have already discussed characterize argument-taking predicates as a class, and which are particular to verbs.

First, like verbal matrix predicates, nominal matrix predicates need not have an overt subject.

(210) Mata -rna.
tired -1sg
I am tired.

Therefore, just as a verbal predicate can introduce a null pronominal by means of the equation ↑G PRED = '*PRO*' (where G is just an abbreviation for selected grammatical functions) attached to a selected function, such as SUBJECT, so a nominal predicate can select a SUBJECT and give it the equation ↑SUBJ PRED = '*PRO*'.

Second, just as sentences with verbal matrix predicates can contain non-SUBJECT arguments (e.g. Adjunct DATIVEs) that are only loosely connected with the argument structure of the matrix predicate, so nominal-headed sentences can also include loosely related non-SUBJECT arguments. These arguments can be equivalent to Adjunct DATIVES (e.g. possessors)

(211) Nyampu + ju nyuntu-ku warlkurru.
this + EUPH 2sg-DAT axe-ABS
This is an axe for you. [H59Notes: 6]

(212) Wawirri, kanyala-ku -rla wiri.
Kangaroo-ABS euro-DAT -DAT big
The kangaroo is bigger than the euro. [H59: 345]
(Presumably *wawirri* is topicalized here, since two constituents precede the AUX).

(213) Lawa -rna yimi-ki + ji.
nothing -1sg language-DAT + EUPH
I haven't any language. [H59: 137]

Third, unlike verbal predicates, the SUBJECT of a nominal matrix predicate cannot be ERGATIVE; it is normally ABSOLUTIVE.

Fourth, just as verbal predicates can have non-SUBJECT complements, so some nominal predicates have a tighter relation to a non-SUBJECT argument; the non-SUBJECT argument appears to be a complement of the nominal. Some nominal predicates, like verbal predicates, require that a DATIVE complement be registered if present. An example is *lani* 'afraid' in (214). However, some nominal predicates, unlike verbal predicates, have complements which are never registered on the AUX – this is true of *ngampurrpa* 'desirous of' as in (215), and perhaps also of *lijija* 'covetous', as in (216).

(214) Ngaju -rna *lani*.
I-ABS -1sg fearful.
I am afraid.

Ngaju -rna -rla *lani* maliki-ki.
I-ABS -1sg -DAT fearful dog-DAT
I am afraid of the dog.

(215) Ngaju -rna ngapa-ku *ngampurrpa.*
I-ABS -1sg water-DAT desirous
I want water. [EFW:2(d)]

(216) Ngula + ju *lijija* wirriya-pardu nyiyakantikanti-ki.
That + EUPH covetous-ABS boy-DIM-ABS things-DAT
That boy is covetous of other people's things. [lijija]

Predictably, just as verb-headed sentences with ABSOLUTIVE SUBJECTs do not in general have ABSOLUTIVE OBJECTS, nominal-headed sentences do not in general have ABSOLUTIVE complements. (See 6.6.4 for an exception.)

Fifth, some nominal predicates can appear with nominalized verb complements:

(217) *Pina* -npa *kuyu-ku purra-nja-ku?*
knowledgeable -2sg meat-DAT cook-INF-DAT?
Do you know how to cook meat? [H59: 45]

So, the nominal predicates do seem to behave like verbs in most respects. A key question of course is: Can they take OBJECTS, as verbs can.[71] Evidence for the non-SUBJECT argument associated with *lani* being an OBJECT comes from control of OCOMP *kurra* clauses.

(218) Lani -rna-rla maliki-ki [*warlkurr-ma-ninja-kurra-ku.*]
Fear -1sg-DAT dog-DAT bark-EMIT-INF-OCOMP-DAT
I am afraid of the dog when it barks. [Laughren, letter, Feb., 1982]

So, (218) suggests that a least one nominal complement is an OBJECT. However, this elicited example is the only such example I have.

An important respect in which nominal-headed sentences differ from verb-headed sentences is with respect to the AUXILIARY pronominal clitics. The AUX is obligatory in verb-headed sentences, but not in nominal-headed sentences.[72] Consider the following examples (taken from Hale [EFW, p.2 and footnote 2].[73]

(219) a. Ngaju -rna *mata.*
I-ABS -1sg tired.
I am tired.

b. Ngaju + ju *mata.*
I-ABS + EUPH tired
I am tired.

(220) a. Nyuntu -npa *wati.*
You-ABS -2sg man.

---

71. The reason that some nominals in Warlpiri can have OBJECTS undoubtedly stems from the fact in Warlpiri the category Nominal encompasses the adjectival category of English. It is well-known that adjectives can take oblique complements in English: *I am afraid of the dog*, *He was very helpful to me*. Furthermore, there is evidence from Swedish (Platzack, 1982) and Russian that a couple of adjectives can take OBJECTS. So it is not surprising that a category subsuming adjectives should include some members that can take OBJECTS.

72. I exclude Imperative sentences from the discussion here.

73. Hale notes that the b. sentences, although often found in discourse, sound rather unacceptable in isolation, but that the euphony particle *ju* improves their acceptability.

You are a (fully initiated) man.

b. Nyuntu + ju *wati.*
You-ABS + EUPH man.
You are a (fully initiated) man.

In the b. sentences, the SUBJECT pronominal clitic (Clitic 1) is optio1nally missing. To account for this, I assume that the AUX is *optional* in nominal-headed sentences.

The Clitic 2 clitic, like the Clitic 1 clitic, is optional in nominal-headed sentences. Compare (212), in which the DATIVE *rla* is registered in the AUX, with (221), in which, although the SUBJECT is registered, the DATIVE is not.

(221) Ngaju -rna *wiri* nyampu-ku.
I-ABS -1sg big this-DAT
I am bigger than this one. [H59: 345]

Since in (221), the SUBJECT pronominal clitic is present, the optionality of the Clitic 2 cannot be attributed to the optionality of the AUX. However, there is another explanation. Recall that in 2.3.1.1. I argued that verbs which allowed an alternation between a registered DATIVE argument and an unregistered DATIVE argument expressing a similar semantic role were in fact showing an alternation between an OBJECT and an OBLIQUE argument of some sort. Suppose that in nominal-headed sentences the same alternation applies, only much more freely. Then, if the DATIVE acts as an OBJECT, it will be registered on the AUX, if the AUX is present. However, if the DATIVE acts as an OBLIQUE, it will not be registered.[74]

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74. This account then makes the prediction that (217) will be ungrammatical if the DATIVE is not registered in the AUX:

Lani *-rna* *maliki-ki* *warlkurr-ma-ninja-kurra-ku.*
Fear -1sg dog-DAT bark-EMIT-INF-OCOMP-DAT
I am afraid of the dog when it barks.

This has to be tested.

Another property of nominal-headed sentences is that they cannot contain an overt aspect marker.

(222) *Ngaju ka-rna wiri.
I-ABS PRES big.
I am big.

If we suppose that the ASPECT is optional, but the Subject position is obligatory within the AUX, and that the AUX itself is optional, then we are part-way to accounting for the optionality of the AUX in nominal-headed sentences. The only difference between nominal matrix predicates and verb matrix predicates appears to be the fact that verb matrix predicates are overtly marked for TENSE. Nominal matrix predicates are not morphologically marked for tense, and are usually understood to be present or generic. Joan Bresnan suggested to me that these two differences can be used to express formally the co-occurrence restrictions on the aspect marker in the AUX, and to make the AUX obligatory in finite clauses in the following way.

The TENSE inflections will have as part of their lexical entries the existential constraint equation ↑ ASPECT, meaning that an ASPECT marker must be present. (Individual tense inflections specify still further what the aspect marker may be, thus *-mi/rni/ni* 'non-past tense' specifies that it appears with PERFECT or PRESENT IMPERFECT aspect). This will force the appearance of an AUX in verb-headed but not in nominal-headed sentences, since there are no overt tense markers in nominal-headed sentences. Thus my account relies on the fact that TENSE entails ASPECT.

But I also claim that certain aspectual markers require the presence of an overt TENSE marker, in order to rule out the appearance of overt ASPECT markers in nominal-headed sentences. The ASPECT *ka* and *-lpa* markers will have as part of their lexical entry the annotation TENSE. This means that for these ASPECT markers to be present, a TENSE marker must be present. Suppose that there is NO understood Tense

marker in Nominal-headed sentences.[75] Then, these ASPECT markers will not be able to appear in a nominal-headed sentence.[76]

I follow Laughren (1981b) in assuming that there are in fact *three* aspect markers, the two overt aspect markers already discussed (*ka* (Present Imperfect) and *-lpa* (Past Imperfect)), and a null aspect marker Ø. The Ø marker is PERFECT in verbal sentences. But a nominal matrix predicate describes either the present state of affairs or a general state of affairs, neither of which is semantically compatible with a perfect aspect marker. Either there is no ASPECT marker in nominal sentences, or else there are two zero ASPECT markers. One appears in verbal sentences and is interpreted as PERFECT aspect. The other appears in sentences with a nominal matrix predicate, and is interpreted as PROGRESSIVE or GENERIC.

There are two reasons to prefer the former account. First, this second Ø morpheme would be the only aspect marker that can appear in nominal sentences. Second, since nominal-headed sentences have no overt TENSE marker, a general biconditional constraint equation on the phrase structure rule can be placed to account for this distribution of overt TENSE and ASPECT markers.

---

75. The same account can probably be extended to IMPERATIVE sentences, in which the ASPECT *ka* and *-lpa* markers cannot appear either. We could assume that the IMPERATIVE inflection is a *mood* inflection, not a *tense* inflection.

76. Restrictions on ASPECT and TENSE in nominal-headed sentences also extend to account for some of the distribution of *sentential particles* in the AUX. Sentential particles usually give information about the mood of the sentence. Not surprisingly, there are, as Laughren (1981b) reports, very strict co-occurrence restrictions between sentence particles and tense and aspect markers. The lexical entry for each sentence particle will specify whether it requires a tense-aspect combination, and, if so, what sort. Only those sentential particles which do not specify tense-aspect combinations, such as the NEGATIVE particle, will be able to appear in nominal-headed sentences.

Kula	*ngaju-ku*	*ngulaju*	*yuwarli.*
NEG	1sg-DAT	that	house

That house is not for me. [Laughren, 1981b]

$$S \rightarrow (AUX)\ \alpha \qquad \alpha^* \quad \alpha = \overline{N}, \overline{V}, \text{Particle}$$

Assign grammatical functions freely

↑ASP if and only if ↑TENSE

In conclusion, I have shown that nominals in Warlpiri may act as matrix predicates. They differ semantically from verb predicates in stativity. Syntactically, they share a number of properties with verbs, some of which I assume as general properties of argument-taking predicates in Warlpiri. These include: the ability to select a SUBJECT and the ability to introduce a null pronominal for subcategorized arguments. Nominal predicates are more restricted than verbs in the functions their arguments may have; for instance there are no ditransitive nominals. However, they do seem able to select OBJECTs. Nominal matrix predicates differ from verb matrix predicates in that the AUX is not obligatory. I have suggested that the AUX is obligatory in verb headed finite sentences because there is a dependency between TENSE and ASPECT, represented by a biconditional constraint equation on the phrase structure rule. I have claimed that nominal-headed sentences have no TENSE and hence cannot have ASPECT markers. By making the AUX optional in the phrase structure rule, we can account for the fact that the SUBJECT is not always registered. To account for the fact that DATIVE arguments are not always registered, I assume that nominal predicates show the same alternation as ABSOLUTIVE-DATIVE verbs, namely that a DATIVE argument may be realized either as an OBJECT or as an OBLIQUE; differences in obligatoriness of registration depending on animacy and the meanings of individual argument-taking predicates.

2.5 Phrase structure

In this section, I look more closely at constituent structure in Warlpiri. I show the need for an $\overline{N}$ constituent. Then, I briefly describe several complex verb structures in Warlpiri, presenting some of their important semantic properties. After that, I discuss the vexed problem of whether the complex verb structures should be generated as $\overline{V}$.

2.5.1 Projection of N

A constituent $\bar{N}$ is needed, because a sequence of nominals can precede the AUX, provided that they either all have the same case: [N-Case*$_i$ N-Case$_i$], or else consist of a coordinate structure: [N-Case*$_i$ *manu* N-Case$_i$ (N and N)], or else form a sequence of nominals without case-marking followed by case-marked nominals. I will call an uninflected nominal in such a structure N^{-1}, and a nominal *with* case-marking N.[77] So the structure has the following form: [N^{-1}* N_{case}* N_{case}]. Since these sequences of nominals can precede the AUX, they form a single constituent, (on the hypothesis that the AUX follows the first constituent). In (223) an ERGATIVE and an ERGATIVE-marked modifier precede the AUX, while in (224) a LOCATIVE and a LOCATIVE-marked modifier precede the AUX.

N-Case*$_i$ N-Case$_i$

(223) *Warlpa-ngku* *jurdu-ngku* ka mirri-rni wirliya.
wind-ERG sand-ERG PRES obliterate-NPST track-ABS
The sand storm is wiping out our tracks. [mirrirni]

(224) *Kirri-ngka* *wiri-ngka* -rlipa nyina-ja.
large camp-LOC big-LOC -1plin sit-PAST
We sat in the large camp. [H66PSJ:1106-7]

In (225), an ERGATIVE-marked modifier and a caseless nominal *maliki*, which is functionally the head, precede the AUX.

N^{-1}* N-Case*$_i$

---

77. The notation N^{-1} was introduced in Selkirk (1982). However, she uses it for roots and stems which can take further derivational suffixes. (See Mohanan (1982d) for a comparison between Selkirk's theory and Lexical Phonology.) I am using N^{-1} to refer just to nominals which have no case-inflection. In terms of Lexical Phonology, an N^{-1} is either a nominal which acts as input to Level 2 (the Level at which case-inflection takes place in Warlpiri), or a nominal which, after going through Level 2, fails to receive any case-inflection.

(225) *Maliki* *wita-jarra-rlu* ka-pala wajili-pi-nyi.
Dog small-DU-ERG PRES-3du chase-NPST
The two small dogs are chasing it. [PWTB:(34a)]

In (226), two coordinated ERGATIVE nominals precede the AUX. One of them, *yapa-ngku turaka-rlu*, consists of two ERGATIVE nominals, while the other consists of an caseless nominal and an ERGATIVE nominal:

Co-ordinated nominals:

N-Case*$_i$ *manu* N-Case$_i$ (N and N)

(226) *Kardiya* *yurrkunyu-rlu* *manu yapa-ngku* *turaka-rlu*
European policeman-ERG AND Aboriginal-ERG tracker-ERG
kalaka-ngku-pala muru-pi-nyi.
ADMON-2sg-3du arrest-NPST
A white policeman and an Aboriginal police aid can arrest you. [MKJ:3]

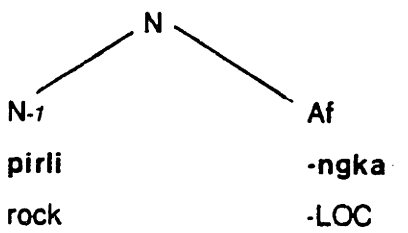
[N* N-Case*$_i$] (a sequence of caseless nominals followed by one or more case-marked nominals) and [N-Case*$_i$ N-Case$_i$] (a sequence of identically case-marked nominals) differ only in whether or not all the elements are case-marked. Since syntactically they do not behave differently otherwise, it seems reasonable to call them both $\overline{N}$. It also seems reasonable to consider coordinate structures as $\overline{N}$. However, in the discussion that follows I will ignore the coordinate structure.

The phrase structure rule expanding $\bar{N}$ is as follows:[78]

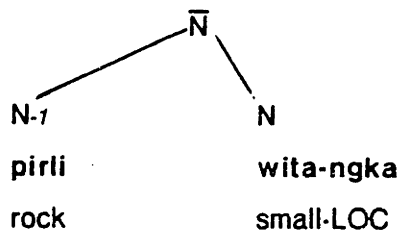
$\bar{N} \rightarrow N^{-1}* \quad N* \quad N$

To express the fact that a caseless nominal can form part of $\bar{N}$, I propose that both case-marked and caseless nominals can be lexically inserted. I assume the existence in syntax of a category N^{-1}, which is a caseless nominal, an uninflected nominal root. The morphological structure of a case-marked nominal, and the syntactic c-structure tree created by the $\bar{N}$ rule are given below.

a. Morphological



b. Syntactic



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78. The $\bar{N}$ rule as given does not conform to the traditional $\bar{X}$ schema of:

$\bar{X} \rightarrow$ (Ymax) X

(See Jackendoff (1977)). First, N^{-1} is not a maximal category. Second, the final N is not necessarily the functional head, although, since it is the only nominal that has to have Case features, it could be considered the structural head.

The divergence between *functional* and *phrase structure* heads is essentially the reason Nash (1980) gives for not using a one-bar expansion:

> *"there are no structures with syntactic heads — heads imposed, that is, by a PS-component."* (Nash, 1980: 5.2)

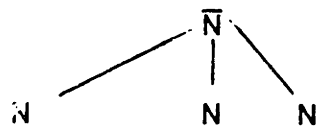
However, in LFG the *functional head* is a major category with the equation $\uparrow = \downarrow$ and a PRED feature. Several elements within a category may be assigned the equation $\uparrow = \downarrow$ (although only one of them may have a PRED equation). It is quite possible, then, for phrase structure rules to accord special status (by means of the $\uparrow = \downarrow$ annotation) to an element which is not the functional head, creating in effect a phrase structure head.

I distinguish an unmarked N^{-1} which forms part of a case-marked expression as in b., from an unmarked N which is interpreted as having ABSOLUTIVE case. I assume that in the syntax a default rule assigns to N and $\overline{N}$ the case ABSOLUTIVE if it has no case. (See 3.5.2.3).

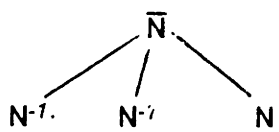
According to the S and $\overline{N}$ rules, N^{-1} and N cannot occur as a daughter of S, but only as daughters of $\overline{N}$. Therefore, a nominal matrix PREDICATE, such as *wita* in *ngaju wita*: *I am small*, has to be treated as an $\overline{N}$ with ABSOLUTIVE case. *Wita* can be construed as agreeing with *ngaju*, the SUBJECT, in having ABSOLUTIVE. This solution is viable because SUBJECTS of nominal clauses have ABSOLUTIVE case, and ABSOLUTIVE Case is morphologically unmarked.

The structure given in the $\overline{N}$ rule is intended to allow any number of caseless N^{-1}s to precede any number of case-marked Ns within a single constituent, but not to allow the alternation of caseless with case-marked Ns. The rule will allow the following structures as single constituents:

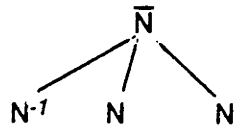
Possible single constituents



Kurdu-ngku wita-ngku nyampu-rlu.



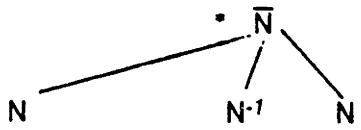
Kurdu wita nyampu-rlu



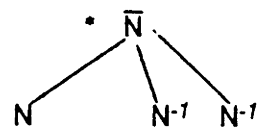
Kurdu wita-ngku nyampu-rlu.

But the rule correctly disallows the following as single constituents:

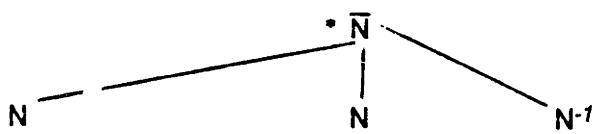
Impossible single constituents



Kurdu-ngku wita nyampu-rlu.



Kurdu-ngku wita nyampu.



Kurdu-ngku wita-ngku nyampu.

In Chapter 4, I will explain the annotation of functions to parts of an $\overline{N}$. In Chapter 6 I will show that this expansion of $\overline{N}$ is not sufficient to cover all instances of $\overline{N}$, and that another $\overline{N}$ rule is needed for the non-finite clauses.

2.5.2 Projection of V

In this section, I will examine the need for $\overline{V}$ as a constituent in Warlpiri, basing the discussion on the detailed description of Warlpiri complex verbs given in Nash (1982). As I mentioned in 2.3, I assume, following Hale (1973), that there is no syntactically relevant projection of V which contains the OBJECT or other complements to V. However, there are three types of complex verb which can precede the AUX as a single unit. These are:

[1] infinitive + Verb, as in (227), in which the infinitive of the verb *wangkami* combines with a verb of motion *yani* 'go'.

[2] Noun + INCHOATIVIZER or CAUSATIVE, as in (228) and (229), in which a noun is formed into a verb by the addition of a verbalizing suffix (which could be thought of as a dependent verb.)

[3] Preverb + Verb, as in (230) and (231). In (230) the verb *yani* 'go' is modified by the preverb *pina* meaning 'back'. The combination means 'go back, return'. (231) shows the same preverb *pina* modifying the verb *kanyi* 'to carry'. *Pina kangu* precedes the AUX.

(227) *Wangka-nja-ya-nu* -lpa-rla maliki-ki Napaljarri + ji
speak-INF-PROG-PAST -PAST-DAT dog-DAT Napaljarri-ABS + EUPH
Napaljarri went around calling to her dog. [yani]

(228) (..)*Kirrkarlanji-jarri-mi*-rlangu kajika.
Kite-INCH-NPST-E.G. POT
..or it [evil being] can turn into a kite for example. [marramarra]

(229) *Liwirn-ma-ni* + jala kapi-ngalpa
hungry.for.meat-CAUS-NPST + CLEARLY FUT-1plin
miyi-pardu-rlu + ju.
food-DIM-ERG + EUPH
Vegetable food will make us hungry for meat. [muurl-ngarni]

(230) Ngurra-kurra ka-rna *pina*-ya-ni
camp-ALL PRES-1sg *back*-go-NPST
I'm going back home. [H59Notes: 31]

(231) *Pina*-ka-ngu kala-jana - mungalyurru + lku.
back-carry-PAST USIT-3pl - morning + THEN
They would carry them back - when it was morning. [H66, PSJ: 1119]

The fact that these three complex verb structures can precede the AUX indicates that either the structures are *lexical* words, or else that there is a projection of V, $\overline{V}$, which includes the structures, or else that both options are taken. I will consider the structures in turn.

The infinitive + V structure forms a lexical word, since the whole has the

case-structure of the infinitive, and not of the tensed verb.[79] *Direct syntactic encoding* prevents adding arguments in the syntax. Therefore if an infinitive when added to an intransitive verb, makes that verb transitive, the addition of the infinitive must be a morphological process. But, if the infinitive is transitive, the resulting compound is transitive, and also has the optional directional complements of the verb of motion. Thus in (232) the infinitive is *nyanyi* 'look for' with an ERGATIVE-DATIVE case-frame. The verb of motion is *yani* 'to go'. The combination has a DATIVE-marked OBJECT. (It would have an ERGATIVE-marked SUBJECT too, but in the example it is not overt.)

(232) Yuwayi – – karli-ki -rlipa-rla *nya-nja-rra*-ya-ni.
Yes boomerang-DAT 1pli:-DAT see-INF-THERE-PROG-NPST
Yes, we'll go along along there looking for boomerangs. [H60Dial: 7.12]

The infinitive and the verb always occur as a unit in the syntax. I assume that the combination is formed in the morphology and is lexically inserted as a verb.

---

79. Some suggestive morphological evidence that the infinitive + verb combination must be generated in the morphology comes from the fact that the combination can in turn act as an infinitive and have a complementizer suffix attached to it. The complementizer suffixes are inflectional suffixes very similar to case suffixes. They can precede case-suffixes (see 6.3.2.1).e.g.

yula-nja-kurra-ku
cry-INF-OCOMP-DAT
while someone is crying – controlled by DATIVE argument of matrix.

Since case-suffixes have to be attached in the morphology, complementizer suffixes must also be attached in the morphology, because all inflection is done in the morphology. The combination of infinitive + verb can itself be an infinitive with a complementizer suffix attached. But, if complementizer suffixes are suffixed in the morphology, and if they can attach to the combination infinitive + verb, this suggests that the infinitive and the verb are compounded in the morphology.

Walya *kala-lu* *pangu-rnu* *warrka-rninja-ya-ninja-ku* – –
earth-ABS USIT-3pl dig-PAST climb-INF-PROG-INF-DAT
They dug out the earth (in the sides of a well) to climb up [warrkarni]

However, the status of the Nominal + CAUS/INCH, and Preverb-Verb structures is somewhat more debateable. Nominal + INCH/CAUS constructions can act as infinitives in infinitive + Verb structures. Since the compounding of the nominal and the suffix presumably precedes the compounding of the infinitive to the verb, and since the latter is a morphological process, it follows that the compounding of the nominal and the suffix should be a morphological process.

(233) M: Manu ngula-jangka + ju ka-npa *nyarrpa-rni-jarri-nja-ya-nu*?
AND that-SOURCE + EUPH PRES-2sg
what-HERE-INCH-INF-PROG-PAST
What did you do(?) when you came this way (after hunting)? [H60Dial:7.30]

(234) (..) ngula ka *kankarlarra-jarri-nja-ya-ni + lki*
that PRES high-INCH-INF-PROG-PRES + THEN
It (the pile) gradually gets higher. [yani]

Some Preverb and Verb combinations have to be generated in the morphology, because otherwise the Principle of *Direct Syntactic Encoding* would be violated. Recall that in 2.3.2.1.1. and 2.3.1.2.1, I showed that Adjunct DATIVE preverbs and DATIVE OBJECT preverbs can add arguments to verbs. *Direct Syntactic Encoding* prevents any change of argument structure taking place outside the lexicon. If the Preverb and Verb are only combined in the syntax,and the Preverb adds a DATIVE argument, then *Direct Syntactic Encoding* is violated.

However, neither Nominal + INCH/CAUS, nor Preverb-Verb structures have to form constituents in the syntax. The AUXILIARY complex can intervene, as illustrated below.

(235) *Kulu* -lu-nganpa *jarri-ja*.
angry -3pl-1plex INCH-PAST
They got angry at us. [overheard by Hale at Yuendumu in 1966]

(236) A: *Nyarrpa* -manu-nkulu *jarri-ja*?
What AND-2pl INCH-NPST
And what were you doing? [H60Dial:7.65]

Compare a previous snippet in the conversation, in which the AUX does not break up

nyarrpajarrija:

(237) A: Manu-npa *nyarrpa-jarri-ja*?
AND-2sg what-INCH-PAST
And what did you do then?

In (238) the preverb *jarnkujarnku* is separated from the verb by the AUX.

(238) *Jarnkujarnku* + lku -lu pirri-karrka.
distributive + THEN -3pl scattered-proceed-NPST
Now they each go their separate ways. [H66:1106-7]

If the nominal-INCH/CAUS structures, or the preverb-verb structures are generated as a lexical item, then the *Lexical Integrity Hypothesis* prevents the insertion of the AUX in between the two.

The preverb-verb structures show another violation of adjacency. In (239) the Preverb *wurulypa* follows the verb *kangu*, rather than precedes it.

(239) A: Kapi-rna-ju ka-nyi *wurulypa* nantuwu-rla.
FUT-1sg-1sg carry-NPST hiding horse-LOC
I will carry her off for myself on horseback. [H60Dial: 8.136]

All sorts of productive preverbs can undergo inversion.[80]

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80. The only meaning difference found so far associated with the positional differences is a scopal distinction which is not well-understood. Nash (1980) observes a difference in scope with inversion and AUX placement with Preverbs such as *puta* which have a negative element in their meaning.

i. Puta -rna nya-ngu
some -1sg see-PAST
I saw some of it

ii. Nya-ngu -rna puta
see-PAST -1sg some
I saw it some more, again.

Presumably this scopal fact is related to the general Warlpiri constraint that the negative particle *kula* must precede the verb.

This inversion of preverb and verb is most plausibly a syntactic rule, not a morphological rule. First it would be a very odd kind of morphological rule that could attach a preverb either to the lef f a verb root or to the right of a tense-inflected verb stem. Second, if the combination Verb Preverb were generated as a word in the lexicon, this would predict that it could precede the AUX, just as the combination Preverb Verb can.

(240) a. PREVERB VERB AUX X*
b. ?? VERB PREVERB AUX X*

But in fact while a. is very common, b. is hardly ever found, and, so Nash and Hale claim, is often rejected. Observe that the unacceptability of this structure also blocks the generation of the inverted structures by means of a phrase structure rule expanding VP. A phrase structure rule such as (241)

(241) $\bar{V} \rightarrow$ (Preverb)* V (Preverb)

would also predict that (240)b. VERB PREVERB AUX is a possible expansion.

To allow the structure (240)a. PREVERB VERB AUX, the combination PREVERB + VERB must be a V or an $\bar{V}$. But to allow the inverted structure, and to prevent it preceding the AUX, the inverted VERB and PREVERB must be daughters of S, not of V. Some kind of pruning rule, or "liberation" meta-rule (Pullum, 1982), will be needed.

Preverb-Verb inversion interacts with AUX placement, as in (242), in which the preverb *marlaja* appears on the other side of the AUX from the verb.

(242) Kiwinyi-rli -ji pu-ngu, *rdilypirr*-karri ka-rna-rla
mosquito-ERG -1sg bite-PAST, wounded-stand-NPST PRES-1sg-DAT
marlaja
cause
The mosquito bit me, I am wounded because of it. [quoted, Nash: 51]

So, Warlpiri allows the following structures:

NOMINAL-INCH/CAUS AUX
NOMINAL AUX -INCH/CAUS

PREVERB VERB AUX
PREVERB AUX VERB
VERB AUX PREVERB
??VERB PREVERB AUX

The INCH/CAUS suffix is not free to appear anywhere else. Certain preverbs can appear separated from the verb, but then they seem to act as independent adverbs, and get case-marking according to the case of what they modify (usually the SUBJECT).[81]

The problem is that what seems to be a lexical word can be, in a very limited way, discontinuous in the syntax. Lexical insertion, as conceived of so far, maintains a direct relation between lexical categories (categories created in the morphology), and terminal nodes. A single lexical item is inserted under a single node. Either lexical insertion of discontinuous expressions under different sister nodes must be allowed, or else stylistic movement rules must be permitted to insert the AUX between the Preverb and the verb, or the nominal and the INCH/CAUS and invert the Preverb and the Verb. (This solution would also require maintenance of brackets around the nominal and the INCH/CAUS, and the Preverb and Verb. Otherwise, Bracket Erasure, from which the *Lexical Integrity*

---

81. For instance, in i. *manyu* is used as an independent word with ALLATIVE case, as well as a preverb with the verb *karrimi*. In ii. *julyurl* is used as a preverb, while in i. it is used as an adverb with LOCATIVE case.

i. *Manyu-kurra -rlipa ya-ni yungu-rlupa manyu-karri julyurlpa-rla.*
fun-ALL -1plin go-NPST REAS-1plin fun-stand-NPST water-LOC
Let's go and play in the water for fun. [manyu]

ii. *Julyurl-yirra-rni ka-lu mikawurru ngapa-kurra, ngami-rlangu-kurra.*
water-put-NPST PRES-3pl mikawurru water-ALL, dish-E.G.-ALL
They put the mikawurru stone into water, into a wooden water dish for example. [mikawurru]

Hypothesis is derived, would render the brackets invisible, and thus inaccessible to movement rules.) The output of the stylistic movement rules would have to be available for semantic interpretation. Otherwise, the scope facts mentioned in Footnote 81 would be inaccessible.

Choosing either solution has strong repercussions for the LFG theory, since it has provision neither for discontinuous lexical items, nor for stylistic movement rules. These repercussions are beyond the scope of this thesis. I leave the representation of the placement of the AUX with respect to these complex verbs as an unsolved problem.

3. Case

3.1 Introduction

A central feature of Warlpiri grammar (and, indeed, of many Australian languages) is the importance accorded to the case-marking system. Case-suffixes have many uses in Warlpiri, which illuminate the importance of morphology in determining predicate-argument relationships. This demands an account of an issue central to any theory of the interaction of morphology and syntax, namely the existence of words which are both morphologically and functionally complex.

The morphologically and functionally complex words that I refer to are nominals with case-suffixes that are used as argument-taking predicates. A word marked with such a case-suffix combines within itself the functions of a preposition and the object of that preposition. I will show that, by allowing the assignment of functional equations in the morphology, as well as in the syntax, the parallels between case-marked nominals and prepositional phrases can be captured, without a major violation of the *Lexical Integrity Hypothesis*.

Previous work on Warlpiri (Carrier (1976), Hale (EFW), Nash (1980)) has revealed the existence of three types of case-suffix, which I shall call 'grammatical', 'semantic' and 'derivational'.[1] The distinction between *grammatical* and *semantic* cases corresponds roughly to differences in the *use* made of nominals bearing these cases at the syntactic level. *Grammatical cases* are primarily used to show that the nominal to which they attach bears a particular grammatical function: SUBJECT, OBJECT, OBJECT 2, or ADJUNCT DATIVE. The primary use of *semantic cases* is to create argument-taking predicates (ATPs). These are approximately equivalent to the argument-taking predicates created by

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1. The distinction between grammatical and semantic case-suffixes corresponds to the traditional distinction between 'syntactic' and 'local' case-suffixes. See also Carlson (1978) for an account of a similar distinction in Finnish.

English prepositions[2] in some of their uses, such as *by* in the following sentence:

(1) Lucy kissed John *by the willow.*

I want to claim, however, that the intuition that a case-suffix such as ERGATIVE is used to indicate a grammatical relation, and that a case-suffix such as LOCATIVE is used to denote an *ATP*, should NOT be expressed as a morphological property of two different classes of case-suffix. Grammatical case-suffixes such as ERGATIVE can be used not only as grammatical relation-indicators but also as *ATP*s, and similarly, semantic case-suffixes can be used both as *ATP*s and as grammatical relation-indicators. Since both classes of suffix can have both uses, it is not possible to represent the difference entirely as a difference in morphological class. I will argue that the difference in use should be expressed as a property of the lexical entry of a given case-suffix, namely, whether or not it has a syntactically relevant meaning (PRED feature). However, the morphological distinction between grammatical and semantic case-suffixes is still necessary in order to account for differences in the transmission of CASE features in double case-marking.

The distinction between *semantic* and *derivational* case also corresponds to different morphological properties of the two types of suffix, and I will discuss this in 3.6, as well as in Chapter 4. I will illustrate the three types of case-suffix, before discussing the semantic and syntactic functions of case-suffixes in Warlpiri. More detailed accounts of case-marking can be found in Hale (PWT) and (EFW), and Nash (1980).

The *grammatical cases* are listed below.

Grammatical Cases:

ABS ABSOLUTIVE Ø

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2. Carlson (1978) makes a similar point with respect to Finnish. He suggests that the Finnish semantic cases share a feature [P] with postpositions and particles, where P is 'identical with the syntactic category P (postposition or particle)'.

DAT	DATIVE	-ku
ERG	ERGATIVE	-ngku, -rlu

The alternant forms for the ERGATIVE are allomorphs determined by the number of morae in the nominal. The forms in *ngk* follow bimoraic morphemes; the forms in *rl* are used otherwise. (There are no monosyllabic nominals). See Nash (1980). High vowels assimilate in backness to a back vowel in the preceding syllable. I will call nominals with *grammatical case* GCNs.

The semantic cases in Warlpiri are:[1]

Semantic Cases

ALL	ALLATIVE	-kurra
COM	COMITATIVE: 'with'	-ngkajinta, -rlajinta
EL	ELATIVE	-ngurlu
LOC	LOCATIVE	-ngka, -rla

The alternant forms for the COMITATIVE and LOCATIVE, like those of the ERGATIVE, are allomorphs determined by the number of morae in the nominal. I will call nominals with semantic case SCNs.

Derivational cases are suffixes which show properties both of case-inflection and of derivation. I will call nominals with derivational case DCNs. I list the major derivational cases below.

Derivational Cases

ASSOC	associative, perfective	-warnu
DENIZ	denizen of	-ngawurrpa
INHAB	inhabitant of	-wardingki

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1. I have omitted from this list some suffixes such as the PERLATIVE, which have been classed as semantic cases, but which have more in common with derivational cases.

LIKE	as, like, simile-former	-piya
PERL	perlative: 'along'	-wana
POSS	possessive	-kurlangu
PRIV	privative, negative	-wangu
PROP	proprietive, having	-kurlu, -parnta
SOURCE	elative of source	-jangka

Like derivational suffixes, they can create nominals which are referential: e.g. *ngangkayi-kirli* 'shaman, medicine-man' (lit. healing-powers-PROP), *pangki-kirli* 'orange' (lit. skin-PROP). Such nominals can have any function that a normal nominal has – SUBJECT, OBJECT etc. However, like semantic-case suffixes, derivational case-suffixes can themselves act as argument-taking predicates. In (2), *kurlu* means, roughly, X HAS Y. Its OBLIQUE$_{theta}$ 'Y' is *mirnirri*, and its SUBJECT, X, is *kurdukurdu*.

(2) Kurdu-kurdu ka-lu warrarda manyu-karri-mi
children-ABS PRES-3pl always play-stand-NPST
mirnirri-*kirli*.
mountain.devil-PROP.
Children always play with mountain-devils [lizard sp.]. [mirnirri]

The mixed nature of these suffixes will become clearer when the properties of grammatical and derivational suffixes have been discussed. See 3.6.

3.2 Uses of case in Warlpiri

Case-suffixes in Warlpiri have three main uses:

[1] *argument-relater* (*ARG* use) to show the relation between an argument-taking predicate and one of its arguments.

[2] *argument-taking predicate* (*ATP* use) to create an argument-taking predicate.

[3] *attribute-relater* (*ATT* use) to show that an argument-taking predicate acts as an attribute of some argument.

Syntactically, the first and third uses have much in common, and I will suggest that they

should be treated as a single use, the 'agreement' use (*AGR*). I will refer to nominals whose case-suffixes are used as argument-taking predicates or argument-relaters or attribute relaters as nominals with *ATP* or *ARG* or *ATT* case-suffixes, respectively. It should be remembered however, that this term refers to the *use* of a particular case-suffix, not to a morphological class. In the next three subsections, I outline the salient features of each use.

3.2.1 Argument-relaters

(3) illustrates the use of case-suffixes in determining the relation between an argument and an argument-taking predicate. The verb *luwarni* requires that the nominal expressing its SUBJECT have ERGATIVE case. The ERGATIVE case-suffix on *Japanangka* shows that *Japanangka* can express the SUBJECT of *luwarni*.

(3) Japanangka-*rlu* luwa-rnu marlu
Japanangka-ERG shot-PAST kangaroo-ABS
Japanangka shot the kangaroo.

Grammatical case-suffixes such as the ERGATIVE are most often used to indicate the presence of a relation between the argument-taking predicate and an argument. Occasionally, however, semantic case-suffixes have this use too, as (4) illustrates.

(4) Ngarrka-patu ka-lu karti-*ngka* manyu-karri-mi ..
Man-PL-ABS PRES-3pl cards-LOC play-stand-NPST ..
The men are playing cards... [EFW: (94)]

The LOCATIVE suffix on *karti-ngka* does not attribute to the SUBJECT location with respect to the cards; it simply signals that the *cards* are a participant in the event denoted by the verb *manyu-karrimi*. I assume that this LOCATIVE-marked nominal expresses an argument of the verb; the verb would mean something different if the LOCATIVE argument were absent.[2] This LOCATIVE argument can co-occur with a LOCATIVE

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2. The PROP suffix *-kurlu* has been found with the same verb, referring not to a 'game', but to the object which is being played with, as in (2).

indicating the location in time or space of the entire event, as in (5).

(5) *Kitayi-rla* ka-lu manyu-karri-mi + lki wati-patu –
guitar-LOC PRES-3pl play-stand-NPST + THEN men-PL-ABS
parra-ngka manu munga-ngka.
day-LOC and night-LOC
The men play their guitars day and night. [manyu]

I suggest that the LOCATIVE argument is a selected grammatical function $OBLIQUE_{loc}$.[3]

Observe the parallelism between *ARG* case-suffixes, and the English preposition *at* in (6).

(6) Cupid and my Campaspe played *at* cards for kisses.

Here *at* does not act as a locational predicate. Instead all it does is to indicate the presence of a particular semantic relation between the verb and the object of the preposition, *cards*. A second example is *on John* in the sentence: *Lucy dotes on John*, in which *on* indicates a relation between *dotes* and the prepositional object *John*. A third example is *of his principles*, in the sentence *Lucy robbed John of his principles*. In none of these examples does the preposition appear to have an independent meaning in the same way that it does in sentences such as *Lucy found the cat in a tree.*

3.2.2 Argument-taking predicates

The second use of case-suffixes is as argument-taking predicates comparable to those created by prepositions in English. I will first illustrate the English usage.

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3. Another instance of a semantic case-suffix on an OBLIQUE argument is the use of the ALLATIVE with verbs of communication mentioned in 2.3.1.1.

A: Kajika-rna-jana nyanurigu + ju yimi-ngarri-rni walypali-kirra + lku.
POT-1sg-3pl them-ABS + EUPH word-tell-NPST European-ALL + THEN
I'll tell on them to the European. [H60Dial: 7.195]

(7) Lucy kissed John *under the willow.*

Here, the preposition *under* acts as an argument-taking predicate, which expresses a relation of location between the *willow-tree*, and the event of Lucy kissing John. It is a two-place predicate meaning roughly *X IN POSITION BELOW THAT OF Y.* X can be the action as a whole, as in (7). Or X can be a particular argument of a sentence, as in (8), in which location with respect to the willow is attributed to the OBJECT, *John*.

(8) Lucy saw John *under the willow.*

In terms of grammatical function assignment, I assume, for reasons that I will discuss later, that X has the function SUBJECT, and Y, the function OBLIQUE$_{theta}$ (where *theta* stands for some semantic relationship, such as *goal, location* etc.).

Case-suffixes can be used in Warlpiri in a manner exactly parallel to the use of the preposition *under* in (7) and (8).

(9) Japanangka-rlu luwa-rnu marlu pirli-*ngka.*
Japanangka-ERG shot-PAST kangaroo-ABS rock-LOC
Japanangka shot the kangaroo on the rock.

In (9), *rla* acts as an argument-taking predicate in the same way that its English translation *on* does. It attributes *location at a place* either to the whole event or to an argument of the sentence.

Most commonly, semantic case-suffixes and derivational case-suffixes are used to create argument-taking predicates. However, occasionally grammatical case-suffixes can be used as argument-taking predicates. Thus the ERGATIVE can be used as an Instrumental ADJUNCT, illustrated in (10).

(10) Kala-rnalu-rla watiya paka-rnu janganpa-ku *mayingka-rlu.*
USIT-1plex-DAT tree-ABS hit-PAST possum-DAT axe-ERG
We used to chop trees with an axe for possums. [pakarni]

Here, the ERGATIVE suffix on *mayingka* acts as an argument-taking predicate meaning roughly *X by means of Y*, which relates the SUBJECT (X), and an instrument (Y) – the

axe.[4] I will discuss the *ATP* use of the ERGATIVE in 3.5.2.1, and the *ATP* use of the DATIVE in 3.5.2.2. The ABSOLUTIVE cannot be used as an *ATP*, but, so I will claim in 3.5.2.3, there is a principled reason for this.

3.2.3 Arguments and attributes

So far, I have shown that the *ARG* and *ATP* uses of case-suffixes parallel the use of prepositions in English. The third use of case-suffixes in Warlpiri, case-concord, has no counterpart in English. Case-suffixes can simply indicate the existence of a relation between an argument and some attribute. Thus in (11), the presence of DATIVE case on *wiri* 'big' indicates that *wiri* attributes a property to the DATIVE OBJECT *marlu-ku*.

(11) Japanangka-rlu rla-jinta luwa-rnu marlu-ku *wiri-ki*
Japanangka-ERG CON-DAT shot-PAST kangaroo-DAT big-DAT
Japanangka shot at the kangaroo, a big one.
Japanangka shot at the big kangaroo.

(As the two translations indicate, *wiri-ki* 'big', can modify *marlu-ku* 'kangaroo' appositively, or restrictively.)

In the example given, the case-marked nominal being modified, *marlu-ku*, is the OBJECT of the verb. The DATIVE case-suffix on *marlu-ku* simply indicates a relation between an argument, *marlu*, and an argument-taking predicate, *luwarnu*. But, in fact the modified nominal can itself be an ADJUNCT; the case-suffix on the nominal can act as an

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4. 'Instrumental' is a very loose term even in English. Observe that neither English nor Warlpiri demand that the SUBJECT *intentionally* use an instrument. For instance, in the following example, the use of the English preposition *with* corresponds quite well to the use of the Warlpiri ERGATIVE case-suffix. What is important is that the meaning of the verb implies the existence of an instrument, not that the SUBJECT intentionally uses that instrument.

Jiwinypa-rlu *ka-ngalpa* *luwa-luwa-rni* *yinirnti*
chip-ERG PRES-1plin shoot-shoot-NPST beantree-ABS
wirijarlu *paka-rninja-karra-rlu.*
big-ABS hit-INF-SSCOMP-ERG
He's hitting us with (flying) chips as he chops down the big bean-tree. [luwarni]

argument-taking predicate, (rather than as a relater of argument and argument-taking predicate.) Consider the following example:

(12) Karli ka nguna-mi *pirli-ngka* *wita-ngka.*
Boomerang-ABS PRES lie-NPST rock-LOC small-LOC
A boomerang is lying on the small rock.

In this example, the two nominals *pirli-ngka* and *wita-ngka* together form an ADJUNCT (or possibly an XCOMP) expressing location. The LOCATIVE suffix acts as an argument-taking predicate. The nominal *wita-ngka* 'small' is an attribute of *pirli*, the OBLIQUE$_{theta}$ of the LOCATIVE suffix. (13) shows a similar example with a derivational case-suffix instead of a semantic case suffix. The PROP suffix, *kurlu*, acts as an argument-taking predicate, which takes as OBLIQUE$_{theta}$ *jangarnka* 'beard'. *Yuulyku*, 'luxuriant', attributes a property to *jangarnka*, and so receives the PROP case-suffix *kurlu*, too. (The ERGATIVE is attached, because the whole *kurlu* phrase attributes a property to the ERGATIVE SUBJECT).

(13) Yuwayi, *wakurlu-kurlu-rlu* kajika-lu-ngalpa panti-rni. Manu
Yes head.hair-PROP-ERG POT-3pl-1plin spear-NPST. And
jangarnka-kurlu-rlu *yuulyku-kurlu-rlu.*
beard-PROP-ERG luxuriant-PROP-ERG
Yes, those long haired people, the ones with the luxuriant beards, might spear us. [wakurlu]

Different kinds of argument-taking predicates can act as attributes: in particular, nominals, case suffixes, and nominalized verbs can all act as the ATPs of attributes, which agree in case with the argument they modify. (11), (12) and (13) illustrate the use of nominals as argument-taking predicates meaning roughly: *X has the property denoted by N.* In 3.2.3.1, I illustrate the use of nominalized verbs as the ATPs of attributes, and in 3.2.3.2, I illustrate case-suffixes used as the ATPs of attributes.

3.2.3.1 Nominalized verbs

A nominalized verb can act as an argument-taking predicate attributing a property to some argument. Case concord will determine which argument the nominalized verb is attributing a property to. For example, ERGATIVE case can mark a nominalized verb whose SUBJECT is controlled by an ERGATIVE argument of the verb.

(14) Ngurrju-ngku -lpa-ngku payi-karla *purla-nja-wangu-rlu* manu
Good-ERG -PAST-2sg ask-IRR shout-INF-PRIV-ERG and
paka-rninja-wangu-rlu.
hit-INF-PRIV-ERG
He (the police) must ask you gently, without shouting or hitting you. [MKJ:9]

In (14), the ERGATIVE on *purla-nja-wangu-rlu* and *paka-rninja-wangu-rlu* shows that the SUBJECTs of the nominalized verbs *purlanja* and *pakarninja* are coreferential with an ERGATIVE argument of the matrix predicate (this argument does not happen to be overtly realized in (14)). (Note that in (14) there is also a nominal predicated of the ERGATIVE SUBJECT, namely *ngurrju-ngku*).

In general, only arguments with grammatical case can control nominalized verbs. However, arguments with semantic case can control nominalized verbs created with the derivational case-suffixes *warnu* and *wangu*. See Chapter 6 for further discussion.

3.2.3.2 Case suffixes

If a case-suffix is used as an argument-taking predicate that attributes a property to some argument of the matrix sentence, then that case-suffix receives an additional case-suffix identical to that of the argument being modified. This is the phenomenon known as *double case-marking.* (13) contains an expression with a derivational case-suffix followed by an extra ERGATIVE case, indicating that the derivational case phrase attributes a property to the SUBJECT. Below, I illustrate double case-marking with SCNs. In (15), location is predicated only of the SUBJECT, and the LOCATIVE-marked nominal receives additional ERGATIVE case:

(15) Kalwa-ngku ka-rla jirri-ki *pirntinyarra-rla-rlu*
crane-ERG PRES-DAT tadpole-DAT bank-LOC-ERG
jaala-nya-nyi.
up.and.down-see-NPST
The crane seeks tadpoles up and down the bank. [jaala-nyanyi]

In the first clause of (16), an ELATIVE is predicated of the SUBJECT, which differs from the SUBJECT of the second clause. A LOCATIVE is predicated of the non-overt SUBJECT of the second clause.[5] But knowledge of the world indicates that the OBJECT must also be in the clearing.

(16) Nya-ngu-rnu pina -lpa *yuwurrku-ngurlu-rlu* nga-rnu
see-PAST-HERE back -PAST scrub-EL-ERG copulate-PAST
-lpa-rla-jinta *yarlu-ngka-rlu* + lku karnta-ku + ju.
-PAST-DAT-DAT clearing-LOC-ERG + THEN woman-DAT + EUPH
From the scrub he looked back at him (the other man) copulating with the woman out in the open. [jajarni]

(17) contains two examples of predication within the same clause. Location in a tree-top is predicated of an understood ERGATIVE SUBJECT, while direction towards a water-hole is predicated of the DATIVE OBJECT.[6]

(17) (..)yi-lpa-rna-rla yankirri-ki nya-ngu *yurdi-ngka-rlu*
REAS-PAST-1sg-DAT emu-DAT see-PAST tree.top-LOC-ERG
ya-ninja-rni-kirra, *ngapa-kurra-ku.*
go-INF-HERE-OCOMP, water-ALL-DAT
In the tree.top, I watched for emus coming, to the water. [nyanyi]

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5. This example is also interesting because it contains the structure 'Verb Preverb AUX', (*nya-ngu-rnu pina-lpa*) which is very rare.

6. The DATIVE OBJECT also has a *kurra* (OBJECT-control complementizer) clause predicated of it. It would be possible to interpret the *kurra* suffix on the word *ngapa* as an OBJECT-control complementizer instead of as an ALLATIVE suffix.

So, of the three uses of case-suffixes in Warlpiri, two parallel the use of prepositions in English. Of the two uses they share, Warlpiri makes far greater use of the argument function of case-suffixes than English does of the argument function of prepositions. This is not surprising, since case-marking is the major means of identifying argument-ATP relations in Warlpiri, whereas in English configurational position is the major means. The use of configurational position in English also accounts for the lack of the *ATT* case-concord. In English, the primary means of identifying argument-attribute relations are *syntactic structure* and *word-order*, (e.g. adjectives normally precede their heads).[7]

In the last chapter I discussed the *ARG* use of case-suffixes in determining argument-ATP relations. In this chapter I will first discuss the *ATT* use of case-suffixes (*case-concord*), then elaborate on the functions that a nominal with an *ATP* case-suffix may have, and finally outline the representation of all three uses of case-suffixes, showing that, for the purposes of function assignment, the *ATT* and *ARG* uses act alike, and the *ATP* use is rather different.

3.3 Case as a concord marker

A nominal with a case-suffix acting as a concord marker can have at least four uses. If it selects a SUBJECT, then it can be the *matrix predicate*, as in (18).

(18) Ngarrka *murrumurru*.
man-ABS sick.
The man is sick

The matrix predicate option was discussed in 2.4.

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7. English also makes greater use of lexical entries to determine certain types of argument-attribute relationships than Warlpiri does. For instance, the *lexical entries* of verbs in English state which argument an XCOMP is predicated of. See Chapter 5.

A nominal which selects a SUBJECT can also be a *secondary predicate* (attributing a property to some argument of the sentence), in which case it can either be an ADJUNCT, an XCOMP, a COMP, or an XADJUNCT. In fact, Warlpiri often employs ADJUNCTs, rarely employs XCOMPs, and, so I claim, has no COMPs or XADJUNCTs. (19) illustrates a nominal acting as an ADJUNCT.

(19) Nya-ngu -rna *murrumurru*.
see-PAST -1sg sick-ABS
I saw him sick.

In order to account for the appearance of nominals as matrix predicates, I proposed that it is a general property of Warlpiri nominals (semantics permitting), that they can be used as argument-taking predicates, and can select SUBJECTs. I also argued, in order to account for null anaphora in finite clauses, that any argument-taking predicate can introduce null pronominals for functions which it selects. Thus any argument-taking predicate can introduce the equation ↑G PRED = 'PRO', where G is a function selected by the argument-taking predicate. Therefore any nominal, (semantics permitting), can introduce the equation ↑SUBJ PRED = 'PRO'. This null pronominal can either be free, in which case the nominal acts as a matrix predicate, or it can be anaphorically controlled by an argument of the sentence, in which case the nominal can act as an ADJUNCT.

The interpretation *I saw him sick* is obtained when *murrumurru* acts as a secondary predicate with the function ADJUNCT, and introduces a null pronominal as its SUBJECT (by means of the equation (↑SUBJ PRED) = 'PRO'). The PRO SUBJECT of *murrumurru* is anaphorically controlled by the OBJECT of the sentence (another null pronominal, introduced this time by the matrix verb), because the CASE of the OBJECT, and the case of the ADJUNCT are identical, namely ABSOLUTIVE. It is a general property of ADJUNCTS in Warlpiri (with the exception of nominals with the TRANSLATIVE suffix *karda*) that they agree in case with their controller. The f-structure for this interpretation is given below.

```
[                                                          ]
  SUBJECT    [ PRED     'PRO'                  ]
             [ CASE     ERGATIVE               ]

  PRED         'nyanyi' <(SUBJECT) (OBJECT)>
  TENSE        PAST
  ASPECT       PERFECT

  OBJECT     [ PRED     'PRO'                  ]
             [ CASE     ABSOLUTIVE             ]

  ADJUNCT    [ PRED     'murrumurru' <(SUBJ)>  ]
             [ CASE     ABSOLUTIVE             ]
             [ SUBJ     [PRED    'PRO']        ]
[                                                          ]
```

So, nominals which select SUBJECTs can be used as matrix predicates or as secondary predicates. If the nominal does not select a SUBJECT, then there are, I claim, two options. First, the nominal can be used *referentially*, in which event the case-suffix has the *ARG* use. For instance, in (19), instead of interpreting *murrumurru* as a secondary predicate, we could have interpreted it as a referential nominal, *I saw the sick one*. This interpretation is obtained when *murrumurru* is assigned the equation (↑OBJ) = ↓, and does not select a SUBJECT. The f-structure is given below.

```
[                                                          ]
  SUBJECT    [ PRED     'PRO'                  ]
             [ CASE     ERGATIVE               ]

  PRED         'nyanyi' <(SUBJECT) (OBJECT)>
  TENSE        PAST
  ASPECT       PERFECT

  OBJECT     [ PRED     'murrumurru'           ]
             [ CASE     ABSOLUTIVE             ]
[                                                          ]
```

Second, a nominal which does not select a SUBJECT may be interpreted as a *sentence-attribute*. I make this proposal as a way of representing the difference between ADJUNCTs which attribute properties to particular arguments (such as *murrumurru* 'sick', in (19)), and ADJUNCTs which act as sentence-attributes. I claim that the former have

null pronominal SUBJECTs. However, it makes very little sense to suppose that a sentence-attribute has a null pronominal SUBJECT. I assume that the latter do not select SUBJECTs, and that semantic interpretation rules interpret an ADJUNCT without a SUBJECT as a sentence-attribute.[8]

In (20), *nyurru* acts as a sentence-attribute which locates the event described by the sentence with respect to a time. It does not select a syntactic SUBJECT, although semantically it attributes a property to an event.

(20) *Nyurru* -lu rduul-pardi-ja mangarrayi + ji
already -3pl emerge-PAST bush.coconut-ABS + EUPH
milpa-wana + juku.
hole-PERL + STILL
They have already emerged from the bush coconut, through the hole. [milpa]

Observe that *nyurru* has no case-suffix, and, indeed, cannot have one. This is not true of all sentence-attributes. Some may appear with case-suffixes, and some types of

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8. An alternative proposal, suggested by Avery Andrews, is to say that the uses of nominals as sentence-attribute and argument-attribute, do not differ *syntactically*, as I have proposed, but rather that they differ *semantically*, along the lines proposed in Halvorsen (to appear). The fact that some nominal may be an attribute of a sentence or of an argument can be expressed by saying that it has either the *semantic type* of a modifier which combines with a sentence to form another sentence, or else the *semantic type* of a modifier which combines with a nominal to form an argument. The advantage of Andrews' proposal is that it does not require the postulation of null pronominal SUBJECTs for nominals used as secondary predicates. While there is clear evidence in the verb-headed ADJUNCTS that the PRO SUBJECT has a Case feature independent of the Case of its controller, and that it engages in anaphoric reference (see Chapter 6), there is no such evidence for the nominal ADJUNCTS. These PRO SUBJECTs never occur in contexts where they could bind anaphors such as reflexives. Nor do they show evidence of independent case features. The PROs introduced by nominal ADJUNCTs serve no purpose other than to express the fact that a nominal ADJUNCT is predicated of an argument of the sentence, and not of the sentence itself. However, I have adopted this null pronominal account, because null pronominals need to be introduced for nominal-headed sentences anyway, and because postulating these null pronominals allows for a unified account of ADJUNCTs that are nominals, and ADJUNCTs that are nominalized verbs.

sentence-attribute even require case-suffixes. The representation of case-suffixes on sentence-attributes creates an interesting problem, for which I do not have a good explanation.

3.3.1 Case on adverbs

Case-suffixes appear on nominals which indicate the *place*, *time*, or *manner* of an action. These three types of ADJUNCT differ semantically and syntactically. Semantically, it is plausible to assume that *location* can be predicated of the event denoted by a sentence, or of an argument, whether that argument has the SUBJECT function, or some other function. Syntactically, however, languages vary as to which

arguments can be non-restrictively modified by locational adverbs.[9] In Warlpiri, this freedom is constrained by the fact that an ADJUNCT, including locatives, must not disagree in case with the argument to which it attributes a property. A LOCATIVE nominal (denoting spatial location) can have ERGATIVE or DATIVE case (or ABSOLUTIVE); it cannot have a semantic case-suffix attached. (See 3.5.2). I illustrate the appearance of grammatical case-suffixes on LOCATIVEs below. In (21), DATIVE case on the LOCATIVE shows that the location is predicated of the DATIVE OBJECT *janganpa*.

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9. For instance, in English it is possible to attribute location *restrictively* to any argument, because NPs can have PP complements: *The man on the hill.* It is possible to attribute location *non-restrictively* to the SUBJECT, as in i., or the OBJECT in a transitive sentence, as in ii.

i. *High up on the hill, John watched Lucy kissing Paul in the garden.*

ii. *They carried John's head in on a platter.*

In ditransitives, location may be attributed non-restrictively to the OBJECT 2, as in iii. but not to the OBJECT, as in iv.

iii. *They brought Salome John's head on a platter.*

iv. **John sent Lucy flowers in bed.*

Warlpiri, as I show in 3.5.2, allows location to be attributed non-restrictively to the OBJECT or the OBJECT 2 in ditransitives. Chinese however, while allowing location to be attributed to the OBJECT of a transitive, does not allow location to be attributed to either the OBJECT or the OBJECT 2 in a ditransitive, but does allow it to be attributed to the event.

i. *Wo kanjian Zhangsan zai tushuguan-le.*
I see Zhangsan at library-PERF
I saw Zhangsan in the library. (Zhangsan is in the library)

ii. *Wo zai tushuguan kanjian-le Zhangsan.*
In the library I saw Zhangsan. (The event is in the library)

iii. *Wo zai tushuguan gei-le Zhangsan yi-ben shu.*
I at library give-PERF Zhangsan one-CLASS book
In the library I gave Zhangsan a book. (The event is in the library)

iv. **Wo gei-le Zhangsan zai tushuguan yiben shu.*

v. **Wo gei-le Zhangsan yiben shu zai tushuguan.*

Apparently the phrase structure rules of Chinese rule out the postverbal position for locatives in ditransitives, thus making it impossible to predicate location of the direct or indirect object in a ditransitive (except, of course, by means of a prenominal modifier). (I am grateful to James Huang for help with this material). Thus languages can vary as to which arguments location may be attributed to, and in which way.

(21) *Wilypiri-rla-ku* rdipi-ja janganpa-ku.
tree.hollow-LOC-DAT meet-PAST possum-DAT.
He came across a possum in a hollow in a tree. [mani]

Only the possum is plausibly located in the tree hollow. In (22), the same verb appears with a LOCATIVE (*pirnki-ngka* 'cave-LOC') without extra DATIVE case-marking. Although the DATIVE argument, 'child', undoubtedly is in the cave, the ABSOLUTIVE SUBJECT argument 'I' is also in the cave, and, in order to focus on this latter relation, *pirnki* has no overt case-marking (or, alternatively, has ABSOLUTIVE case). (I am grateful to Mary Laughren for pointing this example out to me).

(22) Kurdu ngajunyangu yuka-ja pirnki-ngka.
child-ABS mine-ABS enter-PAST cave-LOC
Yi-lpa-rna-rla ngari rdipi-yarla kurdu ngajunyangu-ku
REAS-PAST-1sg-DAT JUST go-IRR child mine-DAT
pirnki-ngka.
cave-LOC
My child went into the cave. So I should probably find my child there in the cave. [rdipimi]

In (23) and (24), ERGATIVE case on the LOCATIVE shows that the location is predicated of an ERGATIVE SUBJECT (unexpressed in (23)).

(23) Karli, pikirri, kurduju-pinki ka-lu-nyanu
boomerang-ABS spear.thrower-ABS shield-SET-ABS PRES-3pl-refl
jarnti-rni *yunta-ngka-rlu + juku.*
trim-NPST wind.break-LOC-ERG + STILL.
While in the wind-break they make themselves boomerangs, spear-throwers and shields and the like. [purlka]

(24) Pikirri ka purlka-ngku paka-rni *ngurra-ngka-rlu*
spear.thrower-ABS PRES old.man-ERG hit-NPST camp-LOC-ERG
wirlinyi-jangka-rlu.
hunting-SOURCE-ERG
An old man is carving a spear-thrower in camp after hunting. [pakarni]
(This example also contains an ERGATIVE-marked SOURCE nominal, used as a temporal adverb, *wirlinyi-jangka-rlu*).

Manner adverbs differ from location adverbs, in that they must always modify the event. However, manner adverbials, so it has been claimed (Jackendoff, 1972, Zubizarreta, 1982), also have a special relationship with the SUBJECT, as the possibility of paraphrasing certain manner adverbials with copula + adjective constructions suggests. If someone does something *carefully*, then he is *careful* in doing that thing. This orientation is maintained under passivization in English:

The doctor carefully examined John.

John was carefully examined by the doctor.

Both of these can be paraphrased by: *The doctor was careful in examining John.*

In Warlpiri, the semantic relationship between the SUBJECT and manner adverbials is reflected in the syntactic case concord between the two. The manner adverbial, *yaruju*, 'quickly' in (25) and (26) has ERGATIVE or ABSOLUTIVE case, depending on the case of the understood SUBJECT.

(25)	(..)ngulaju	yinga-lu	*yaruju*	ya-ni.
	that	REAS-3pl	quick-ABS	go-NPST
	(..)so that they can go quickly. [munga]			

(26)	Janyungu	paji-ka	*yaruju-rlu*
	tobacco-ABS	chew-IMP	quickly-ERG
	Chew the tobacco quickly. [yaruju]		

Manner adverbials can only receive ERGATIVE case or the default ABSOLUTIVE case. [10] They cannot receive DATIVE case, say. This is not surprising, considering that it is hard to find a semantically plausible sentence in which a manner adverbial is predicated of a non-SUBJECT argument.

However, time adverbials can also receive additional case-marking. In (27), the ERGATIVE case on *jalangujalangu* shows that the sentence has an ERGATIVE SUBJECT.

(27) Manu kala-lu-nyanu karnta-ngku + ju ngapa + ju ka-nyi
and USIT-3pl-refl woman-ERG + EUPH water-ABS + EUPH carry-NPST
kartaku-rla *jalangujalangu-rlu + ju*
billycan-LOC now-ERG + EUPH
And nowadays women carry water for themselves in billycans. [WNJ]

Like manner adverbials, time adverbials can only agree in case with the SUBJECT of the sentence. But, whereas it seems natural to suppose that locational adverbs can modify particular arguments, and that manner adverbs also attribute properties to SUBJECTs (or perhaps arguments with the semantic relationship of Agent/Perceiver/Experiencer), it seems less likely that there is a special relationship between the SUBJECT of a sentence, and a time adverbial. If location in a particular time is attributed to the SUBJECT, it is also attributed to the event, and to the OBJECT, if the existence of the OBJECT is presupposed (thus, if a verb is intensional, such as *seek*, a sentence such as *I sought a*

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10. There is a small class of nominals which are almost always used predicatively, as manner adverbials. (See Hale 1982b). Examples include: *muurlpa* and *wurra*, as illustrated below.

i. (...) *ngulaju-palangu* *muurlpa-rlu* *warrawarra-ka-ngka*
(...)that-ascend.kinsman-ABS careful-ERG look.after-IMP
nyuntu-ku-palangu *ngati-nyanu* *manu* *kukurnu-puraji!*
2sg-DAT-ascend.kinsman mother-kin-ABS and younger.brother-kin-ABS
(...)Look after your mother and younger brother *carefully*. [muurlpa]
(Manner adverb *muurlpa* with ERGATIVE)

ii. *Nyanungu-patu-rlu + ju* *-lu* *wurra-ngku + juku* *nga-rnu* *ngapa.*
he-PL-ERG + EUPH -3pl continue-ERG + STILL eat-PAST water-ABS
Those ones *still* went on drinking the water. [wurra]
(Manner adverb *wurra* with ERGATIVE)

unicorn yesterday does not entail that unicorns existed yesterday). Observe also that while agreement in case with the SUBJECT is apparently obligatory for manner adverbials, it is optional for time adverbials.

How then should we represent the appearance of case on ADJUNCTs which modify an event rather than an argument, such as the time adverbials, certain uses of locatives, and perhaps manner adverbials? If it can be shown that, when a time adverbial has ERGATIVE case, there is some sense in which the sentence focuses on the location of the SUBJECT in that time, and that when the time adverbial does not agree in case with the SUBJECT, the time adverbials is focused only on the event, then time adverbials that agree in case can be treated in the same way as other ADJUNCTs which attribute properties to arguments. That is, they can select SUBJECTs which are expressed as null pronominals. This approach expresses the optionality of the ERGATIVE case-suffix on time adverbials when the SUBJECT has ERGATIVE case.

Lacking any semantic evidence for supposing that time adverbials can be predicated of arguments, rather than of events, I propose that time adverbials and those locative adverbials which clearly modify the event, rather than a particular argument, should have lexical entries which do not select SUBJECTs. With manner adverbials, there are two main choices: either they are syntactically ADJUNCTS which are non-restrictive attributes of the SUBJECT, and semantic interpretation rules have the option of interpreting such ADJUNCTs as manner adverbials. Or else, like time adverbials, manner adverbials have no SUBJECT. The disadvantage of the latter approach is that it does not express the difference in freedom of case-marking. Manner adverbials MUST agree in case with the SUBJECT. Time adverbials do not have to do so. I conclude that the former option is more satisfactory.

On this account, how can one express the fact that time adverbials can, but do not have to, have the CASE of the SUBJECT of the sentence? P-K. Halvorsen suggested to me that this concord could be linked with the assignment of the ADJUNCT function. Suppose that when the equation $\downarrow \in (\uparrow \text{ADJUNCTS})$ is added to a node of the c-structure tree, another equation can optionally be added:

$(\neg\downarrow SUBJ) \rightarrow ((\downarrow CASE) = (\uparrow SUBJ\ CASE))$

This is interpreted as follows:
If ↓ (the ADJUNCT) has no SUBJECT, then the ADJUNCT's CASE is identical to that of the SUBJECT of the matrix (↑).

I do not consider this an enlightening account of the case-marking of adverbs in Warlpiri.

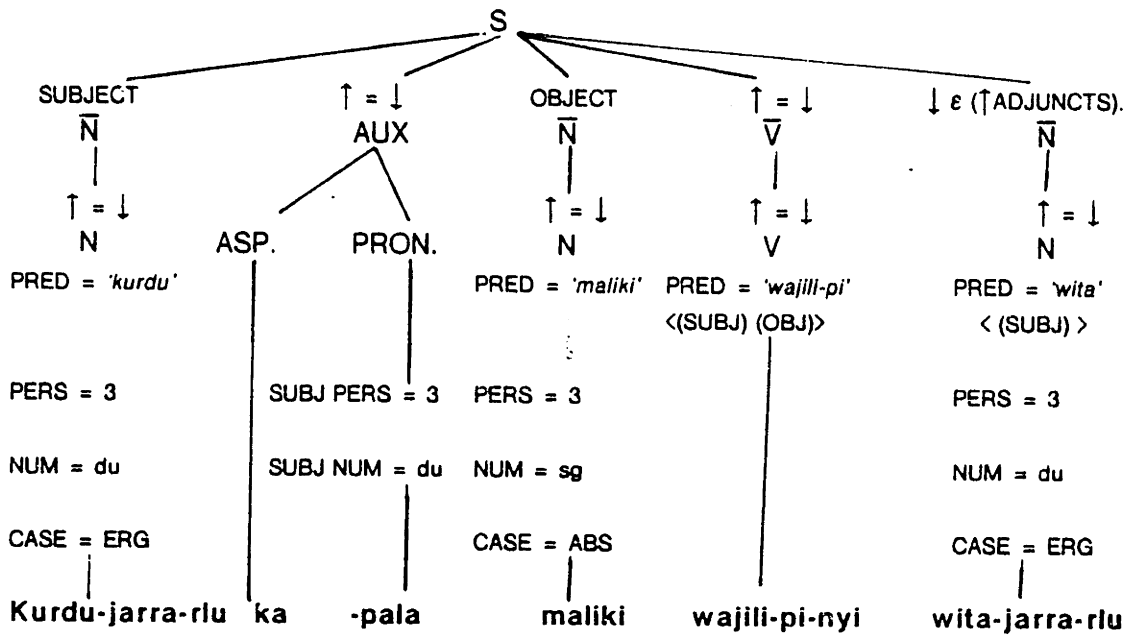
3.3.2 Concord of ADJUNCTS

In this section I will discuss the problem of representing the fact that an ADJUNCT agrees in case with the argument it is predicated of. Let us start by considering a simple case of an ADJUNCT and the argument it is predicated of.

(28) *Kurdu-jarra-rlu* ka-pala maliki wajili-pi-nyi *wita-jarra-rlu.*
Child-DU-ERG PRES-2du dog-ABS chase-NPST small-DU-ERG
(The) two children are chasing the dog and they are small.

In this sentence, *kurdu-jarra*, 'two children', acts as the SUBJECT, and the ERGATIVE suffix *rlu* confirms this. The ERGATIVE is acting as an *argument-relater*. The PRED of the SUBJECT is *kurdu-jarra*. *Wita-jarra* acts as an ADJUNCT, and the ERGATIVE suffix indicates that it is predicated of the SUBJECT. Here, the ERGATIVE is acting as an *attribute-relater*. The PRED of the ADJUNCT is *wita-jarra*, which selects a SUBJECT, and introduces a null pronominal to represent the SUBJECT. This null pronominal is controlled by the matrix SUBJECT. A simplified annotated c-structure tree is given below for (28).

(29)



The general rule: *Assign grammatical functions freely*, allows the assignment of the SUBJECT function to *kurdu-jarra-rlu*, and the assignment of the ADJUNCT function to *wita-jarra-rlu*, (in the form of the functional equation ↓ ε (↑ADJUNCTS) which is read as 'Ego (the NP) is a member of the set of ADJUNCTS of Mother (the Sentence)' – see 2.2.5).

Consistency rules out incorrect assignments of ↓ ε (↑ADJUNCTS) and (↑SUBJ) = ↓ to *kurdu-jarra-rlu* and *wita-jarra-rlu*. For instance, if both *kurdu-jarra-rlu* and *wita-jarra-rlu* are assigned the function SUBJECT, and both Ns have the equation ↑ = ↓, the f-structure is ill-formed, because the function SUBJECT has two PREDs (two lexical forms), which is a violation of *Consistency*. If, however, *kurdu-jarra-rlu* is assigned the function ADJUNCT and *wita-jarra-rlu* is assigned the function SUBJECT, the f-structure is well-formed. A plausible interpretation might be:

The two small ones are chasing the dog, they are two children.

Both *kurdu-jarra-rlu* and *wita-jarra-rlu* can be assigned the function ADJUNCT, without violating *Consistency*, because the function ADJUNCT can have as its value a *set* of f-structures, rather than a unique f-structure. Both *kurdu-jarra-rlu* and *wita-jarra-rlu* are

then ADJUNCTs of an understood null pronominal introduced by the verb with the equation ↑SUBJ PRED = 'PRO'. The interpretation of the sentence might be:

They two are chasing the dog, the kids, the little ones.

The normal method of forming an f-structure described in Chapter 2 produces the f-structure in (30) from the annotated c-structure given in (29).

(30)

$$\begin{bmatrix} \text{SUBJ} & \begin{bmatrix} \text{CASE} & \textbf{ERGATIVE} \\ \text{PRED} & \textit{'kurdu'} \\ \text{NUM} & \textbf{du} \\ \text{PERS} & 3 \end{bmatrix} \\ \text{ADJ} & \begin{bmatrix} \text{CASE} & \textbf{ERGATIVE} \\ \text{NUM} & \textbf{du} \\ \text{PRED} & \textit{'wita'} \langle(\text{SUBJ})\rangle \\ \text{SUBJ} & [\ \text{PRED} \quad \textit{'PRO'}\ ] \end{bmatrix} \\ \text{ASP} & \textbf{Present Imperfect} \\ \text{TENSE} & \textbf{Non-past} \\ \text{PRED} & \textit{'wajili-pinyi'} \langle (\text{SUBJ})\ (\text{OBJ}) \rangle \\ \text{OBJ} & \begin{bmatrix} \text{CASE} & \textbf{ABSOLUTIVE} \\ \text{PRED} & \textit{'maliki'} \\ \text{NUM} & \textbf{sg} \\ \text{PERS} & 3 \end{bmatrix} \end{bmatrix}$$

Although the f-structure for the ADJUNCT contains a PRO SUBJECT which can be anaphorically controlled by some argument, the fact that the CASE of the ADJUNCT

determines what can be a controller of the ADJUNCT is not expressed.[11]

Agreement of the ADJUNCT with its controller does not follow from the formal representation. *Consistency* cannot rule out case clashes between the ADJUNCT and its controller for several reasons:

[1] ADJUNCTs of the type discussed here are not generated within the f-structure of their controllers. (If they *were*, then it would be possible to force agreement by means of transmission of case from the ADJUNCT to the immediately dominating node).

[2] The controller of an ADJUNCT cannot be referred to directly in a functional equation because the relation "antecedent of X" is not a grammatical function. Equations of the following type are ruled out. ↑ ADJ CASE = ↑ ADJ ANT CASE or ↓CASE = ↑ANT CASE.

[3] Andrews' (p.c) suggestion that the PRO SUBJECT of the ADJUNCT has the same case as the ADJUNCT and receives its CASE from the controller, cannot be used, because the PRO SUBJECT of nominalized verb ADJUNCTS in Warlpiri can have a different case from that of its controller, and, ideally, nominal ADJUNCTs and nominalized verb ADJUNCTS should receive the same account. (See Chapter 6).

I have been unable to find any way of representing the agreement of ADJUNCTs with their controllers in terms of *functional equations*. The only alternative that I can see, is to place a condition on the well-formedness of f-structures. Recall that in Chapter 2 I described three conditions on the well-formedness of f-structures which have been generally accepted within LFG. These are *consistency, completeness* and *coherence*. I propose a condition on agreement analogous to these conditions.

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11. In this example, the ADJUNCT also agrees in NUMBER with its antecedent. NUMBER agreement is a complex phenomenon which raises several difficulties for my analysis, since it probably cannot be treated in the same way as case agreement, although the two types of concord share some properties. See Hale (PMW), (PWT), Laughren (1977, 1981a), Nash (1980) and Swartz (1982) for information about, and analyses of, different aspects of number in Warlpiri.

(31) **Adjunct Agreement Convention**

Adjuncts must not disagree in case with the arguments they attribute properties to.

I assume that, if an ADJUNCT has an argument which is anaphorically controlled by some argument of the matrix, then that ADJUNCT *attributes a property to* that argument. Normally this anaphorically controlled argument will be the SUBJECT, but in Chapter 6 I will show that certain types of ADJUNCT have anaphorically controlled OBJECTs. The anaphorically controlled argument and its controller will be coindexed, according to the mechanism of anaphoric control. The agreement convention can be viewed as a constraint on that indexing.

I use the double negative in stating this convention in order to allow for certain situations in which the ADJUNCT has no case-suffix. Something further needs to be said about the use of special predicative cases for ADJUNCTS, such as the Finnish ESSIVE and TRANSLATIVE, the Abkhaz PREDICATIVE, and the Warlpiri TRANSLATIVE, and perhaps the use of the Russian INSTRUMENTAL in (32), in which a INSTRUMENTAL ADJUNCT attributes a property to the NOMINATIVE SUBJECT.

(32) *Molodym* on vsegda chital knigi.
Young-INST he-NOM always read books.
When young he used to read a lot.

It is clear that predicative cases are free to agree with nominals in different cases, but exactly how this generalization should be stated is debateable. One alternative is to propose that the predicative case is not a case in the sense that other case-suffixes are, and so does not disagree with any case feature.

It is a deficiency in my account of case that the agreement of adjuncts and their controllers does not follow from other principles of the theory, but must be expressed by a convention. However, the representation of case-concord is a general problem for syntactic theories, not merely for LFG. I know of no treatment of concord in other theories, which does not have equally powerful conventions.

3.4 Case as an argument-taking predicate

Now that the uses of case as a concord marker have been outlined, I will examine the *ATP* use of case-suffixes. I will do this by drawing parallels with English prepositions wherever possible. The two main *ATP* uses of English prepositions are as the argument-taking predicates of XCOMPs (*John found Lucy in a good mood*) and ADJUNCTs (*In an oddly cheerful mood, Lucy left the house.*). They cannot act as matrix predicate; a copula is required (**Lucy on the rock*).

This section is organized as follows. I will first look at the XCOMP use of *ATP* case-suffixes, then at the appearance of case-marked nominals as matrix predicates, and finally at the use of *ATP* case-suffixes in ADJUNCTs, both those that act as sentential attributes and those that act as argument ADJUNCTS.

3.4.1 XCOMP

Nominals with semantic case often appear as arguments that are optionally selected by a particular verb. Thus, verbs of motion can appear with an Endpoint or Goal, and a Source. ALLATIVES (endpoint) and ELATIVES (sources) are the most obvious cases for arguments with these semantic roles. These will be assigned the functions XCOMP or ADJUNCT, depending on the meaning of the verb.

It is necessary to distinguish XCOMPs from ADJUNCTs and OBLIQUES. I will first compare them with OBLIQUES, and then with ADJUNCTS. Semantically, an XCOMP differs from an OBLIQUE in that the XCOMP is both an argument of the verb and an ATP predicated of some other argument of the verb. An OBLIQUE, on the other hand, is simply an argument of the verb. Thus the LOCATIVE argument of the verb *manyu-karrimi* 'play' discussed in 3.2.1 does not attribute location, either literally or metaphorically, to any argument.

Bresnan (1979) also provides a couple of tests to distinguish XCOMPs from

OBLIQUEs. Only one is clearly applicable to Warlpiri.[12] OBLIQUEs in general only permit one type of preposition, whereas XCOMPs can be realized by different prepositions:

(33) Possums sit *in/on trees /near the trunk/ inside hollow logs/under leafy boughs.* XCOMP

(34) They sat *on the proposal* for months./**next to the proposal* for months, (except in the literal sense) OBLIQUE

(35) She went *to Jerusalem/into the cave/up the mountain/down the pass.* XCOMP

(36) I handed the olive *to him /*into him/*near him/*under him/?around him/?behind him.* OBLIQUE

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12. Another test concerns reflexivization. Bresnan (1979) accounts for the well-known contrast in reflexivization given in i. and ii. by using the XCOMP/OBLIQUE difference.

i. *Susan informed John about <u>her</u>.* *her* ≠ Susan
Susan informed John about <u>herself</u>.

ii. *Susan kept John about <u>her</u>.* *her* = Susan
??Susan kept John about <u>herself</u>.

She assumes that ordinary pronouns (non-reflexive/reciprocal pronouns) cannot refer to members of the same clause nucleus. An OBLIQUE argument is in the same clause nucleus as the SUBJECT. But, an XCOMP is a clause nucleus. Therefore a pronoun in an XCOMP can refer to an element outside the XCOMP. Bresnan gives independent tests to show that *about her* is an OBLIQUE in i, but an XCOMP in ii., and so the contrast is predicted. Because Warlpiri adopts a different strategy for reflexivization, and because little is known about disjoint reference in Warlpiri, it is difficult to construct a comparable test. However, there is some suggestive data. The demonstrative pronoun *nyanungu* cannot be used as the OBJECT if that OBJECT is reflexive. But, if *nyanungu* has an *ATP* case-suffix attached, it can refer to the SUBJECT in some instances, as iii. shows:

iii. *Ngatinyanu-rlu ka kurdu wita jarda-yirra-rni*
mother-ERG PRES child-ABS small-ABS sleep-put-NPST
<u>nyanungu-wana</u>.
her-PERL
The mother puts the baby down to sleep beside her. [jarda-yirrarni]

If *nyanungu-wana* is an XCOMP, as, by hypothesis, the complements of verbs of motion usually are, then the fact that disjoint reference does not apply here is easily explicable.

Underlying this test for XCOMPs and OBLIQUES is the intuition that, in the OBLIQUE use, the preposition is acting as a kind of *case-marker*, not as an argument-taking predicate.

In Warlpiri, while End-points are normally expressed by the ALLATIVE, they can sometimes be expressed by the DATIVE and even the LOCATIVE. Sources can be expressed by the ELATIVE case-suffix (*ngurlu*) or the SOURCE case-suffix (*jangka*). However, this test is not as clear as in English, because Warlpiri has far fewer semantic case-suffixes than English has prepositions. Semantic intuition remains the chief reason for considering Sources and End-points to be XCOMPs in Warlpiri, rather than OBLIQUES.

It is also difficult to show a distinction between ADJUNCTS and XCOMPs with respect to verbs of motion in Warlpiri. SCNs often express the location of an event in time or space, and, when doing so, they normally have the ADJUNCT function. Since events and states presuppose a time and place, it can justifiably be asked if they are not arguments of verbs, and if so, how are they distinguished from XCOMPS. There is no simple answer to these questions, which raise the fundamental issue in lexical semantics of whether there can be optional arguments of ATPs, and if so, what tests distinguish them from attributes.

I adopt the working hypothesis that if the meaning of a verb makes *specific* reference to location or time, then the location/time element is probably a syntactically relevant argument of that verb.[13] So, verbs of position, whether intransitive, such as *lie, sit* and *stand*, or transitive, such as *keep*, and *hold*, specifically refer to location. Verbs of contact, such as *hit, kiss*, or verbs of emotion, such as *love, hate, worry* do not refer to

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13. Sometimes the location/time is actually contained in the verb, as I mentioned in Chapter 1. Examples such as *tree, corral, yard* and *jail* contain locative arguments, which can usually be expanded by an overt locative in the sentence.
Fido treed the cat (in a poplar).
Shane corralled the cattle (in the OK corral).
Toprail yarded the bullocks (in the Banka yards).
The police jailed the mugger (in the Middlesex county jail).
I assume that, in such examples, the overt locative is an XCOMP. Verbs such as *jail* have two lexical entries, one with an XCOMP, and one without the XCOMP.

location or time or reason, except by virtue of a general principle that states and events are located in time and space.

Apart from general principles that range over events, there are also general principles applying to particular classes of verbs. It is a fact about motion, for instance, that some place is left and some place is arrived at.[14] But only some verbs, such as *go, come, descend, arrive, ascend, leave, enter*, actually have as part of their meaning the place left or the place arrived at. I call this class *change of location* verbs. Verbs such as *run, jump, swim, fly* describe the manner in which one moves. They do not make reference as part of their meaning to the place left or the place arrived at. I call this class *manner of motion* verbs.[15] I assume that *manner of motion* verbs differ from *change of location* verbs in that the latter have specified directional arguments, whereas the former do not. *Arrive* always has a semantic role *place arrived at*, whether or not it is linked to a

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14. The place left and the place arrived at can of course be the same place, as in running up and down on the spot, or flying round in circles.

15. These are a subset of the class Halliday (1967) calls *process-oriented* verbs.

particular grammatical function.[16] *Run*, on the other hand, does not have as part of its meaning a *place run to*. *Run* can co-occur with a *place run to*, because the ability to appear with Goals (place to) and Sources (place from) is a general property of verbs of motion.

In Warlpiri, a verb like *wilypi-pardimi* 'emerge, exit, come out of' is a *change of location* verb. It focuses on the place left, or Source, but implies an End-point. I assume that this focus is reflected in the subcategorization; *wilypi-pardimi* takes an XCOMP linked to the semantic role of Source (37) b., and, if an End-point is expressed, it has the function ADJUNCT. *Yukami* 'enter' (which focuses on the place entered, or End-point, but implies a Source) has an XCOMP linked to the semantic role End-Point (37) a. The Source, if expressed, is assigned the function ADJUNCT. On the other hand, *manner of motion* verbs like *wapami* 'move' or *parnkami* 'run' focus on neither the End-point nor the Source,

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16. Showing the difference between *change of location* and *manner of motion* verbs is not always easy, because most tests are only partial. Three useful tests in English are: *entailment, duration* and *result*.

A verb such as *arrive* entails a place arrived at. Therefore the sentence *He arrived, but at no particular place* is ill-formed. Contrast this with *He didn't run to any particular place; he just ran round and round the oval.*

Duration attributes can occur with *manner of motion* verbs because they focus on the process: *I ran for five hours.* Compare **I arrived for five hours.* I attribute the ill-formedness of this example to the fact that *arrive* always has an inherent end-point, while *run* does not have an inherent end-point. As soon as *run* has an expressed end-point, the sentence is ill-formed: **I ran for five hours into Jerusalem.* (The test is only partial because some other change of location verbs CAN co-occur with duration adverbs: *The balloon ascended/rose/fell/descended for four hours before exploding.*)

In Simpson (1982) I show that *change of location* verbs in English can be distinguished from *manner of motion* verbs by the ability of the latter, but not the former, to appear with reflexives and resultative attributes.

I danced myself tired.

**I came myself exhausted.*

He fell himself dead.

This difference is attributed to the obligatoriness of the semantic role of Source/End-point for *change of location* verbs. See also L. Levin (in progress) for an account of AUXILIARY selection by Icelandic motion verbs which requires a similar semantic classification.

but imply both, as in (38). In sentences with such verbs, the End-point and the Source are assigned the function ADJUNCT. The XCOMPs of direction are not obligatorily expressed in either Warlpiri or English; *wilypi-pardimi* and 'emerge' do not always appear with an overt Source, and *yukami* and 'enter' do not always appear with an overt End-point.

(37) a. Pulalypa *yuka-ja* *ngulya-ngka.*
perentie-ABS enter-PAST hole-LOC
The perentie went into the hole. [H59: 43]
(endpoint focused)

b. *Pirnki-ngirli* *wilypi-rni-pardi-ja* wawirri.
cave-EL emerge-HERE-rise-PAST kangaroo-ABS
A kangaroo came out of the cave. [H59: 44]
(source focused)

(38) a. Mata-jarri-ja -rna *wapa-nja-warnu.*
tired-INCH-PAST -1sg move-INF-ASSOC-ABS
I'm tired of walking around. [H59: 37]
(no intended source or endpoint of motion)

b. Kaji-rna *parnka-mi,* kapi-rna mata-jarri.
IF-1sg run-NPST, FUT-1sg tired-INCH-NPST
If I run, I will get tired. [H59: 37]
(no intended source or endpoint of motion)

If the verb is intransitive, such as *parnkami* 'run', *wapami* 'move' and *yani* 'go', the XCOMP will be obligatorily controlled by the SUBJECT. If the verb is transitive, such as *kanyi* 'carry', the prediction is that the XCOMP should be controlled by the OBJECT, as it is in English.

However, sometimes, a verb which seems to select an XCOMP can appear in a sentence with a directional argument expressing roughly the same semantic role, but controlled by the SUBJECT. The evidence for the argument being controlled by the SUBJECT comes from double-case-marking of directionals with verbs of motion. (See Hale (EFW) and Granites (1976) for discussion of this issue.) Consider a simple sentence with the verb *kanyi* 'carry'.

(39) Wati-ngki kuyu ka-ngu *ngurra-kurra.*
man-ERG meat-ABS carry-PAST camp-ALL
The man carried the meat to the camp.

Ngurra-kurra expresses a direction. If it is an inherent argument of the verb *kanyi*, it must be an XCOMP, functionally controlled by the OBJECT. Now consider the following sentence.

(40) Ngarrka-ngku ka kuyu *ngurra-kurra-rlu* ka-nyi.
Man-ERG PRES meat-ABS camp-ALL-ERG carry-NPST
The man is carrying meat all the way to the camp. [Survey]

Both (39) and (40) entail that the OBJECT comes to be at the camp, but (40) entails the SUBJECT being at the camp as well. *Ngurra-kurra-rlu* has ERGATIVE case, agreeing with the SUBJECT, because the antecedent of the SUBJECT of *ngurra-kurra-rlu* is the SUBJECT of the sentence. *Ngurra-kurra-rlu* cannot be an OBJECT-controlled XCOMP here, because functional control of an argument precludes simultaneous anaphoric control. This suggests that in (40), the *ngurra-kurra-rlu* is in fact an ADJUNCT and not an XCOMP. Let us review the possibilities. First, if *ngurra-kurra-rlu* in (40) is an ADJUNCT, and *ngurra-kurra* in (39) is an ADJUNCT, then the fact that they both seem to bear almost the same semantic relationship to the verb *kanyi* is merely an accident due to the fact that the direction of movement of the entity denoted by the SUBJECT usually depends on the direction of movement depicted by the verb. Second, *kanyi* could be a *manner of motion* verb, which does not in fact have an XCOMP argument of direction in (39). On this account, the End-point can be expressed by an ADJUNCT which is either controlled by the SUBJECT or the OBJECT. The third possibility, that the XCOMP can be either SUBJECT-controlled or OBJECT-controlled, amounts to positing two lexical entries for the verb *kanyi*, each with a different complement. I have not been able to find evidence within Warlpiri to distinguish these alternatives.

More work needs to be done on the syntactic status of the directional complements. I have given no syntactic arguments for distinguishing XCOMPs and ADJUNCTs in Warlpiri. I have simply based this assignment on a <u>semantic</u> difference, namely whether or not the verb <u>focuses</u> on change of location.

3.4.2 Matrix predicates

Nominals with case-suffixes used as argument-taking predicates can only marginally be used as matrix predicates. Locatives are the type most commonly found. Even so, it is preferred to use a verb of stance such as *nyinami* 'sit' together with a locative in order to express the location of some entity at or in a place. Thus, while (41) a. is acceptable, (41) b is preferred.

(41) a. Ngaju *pirli-ngka*.
I-ABS rock-LOC
I am on the hill.

b. Ngaju ka-rna nyina-mi *pirli-ngka*.
I-ABS PRES-1sg sit-NPST rock-LOC
I am sitting on the hill.

I suggest that the reason for the unacceptability of most SCNs as matrix predicates has to do with *dependent tense*. The time reference of the state denoted by a semantic case suffix is dependent for its interpretation on the time reference of the higher clause. Usually, the time reference of a semantic case suffix has to be the same as that of the matrix clause. As a matrix predicate, the time reference of a semantic case suffix cannot be interpreted, because it has no antecedent. The marginal acceptability of the LOCATIVE as a matrix predicate has to do with other properties of the LOCATIVE which link it with *derivational* case-suffixes, rather than semantic case-suffixes. Derivational case-suffixes, I claim, form nominals which, like other nominals, are tenseless, and so do not have this dependent tense constraint preventing them from appearing as matrix predicates. See Chapters 4 and 6 for further discussion.

When an nominal with a semantic case-suffix such as LOCATIVE acts as the main argument-taking predicate of the sentence, the case-suffix is the functional head of the sentence. However, in contrast to normal nominals acting as matrix predicates, the lexical form of the matrix argument-taking predicate will be the lexical form of the *case-suffix*, and not the lexical form of the *nominal* to which the case-suffix attaches. In (41)a, the matrix predicate is *ngka*, which selects a SUBJECT, *ngaju*, and an OBLIQUE,

pirli. This contrasts with a sentence such as (42), in which the argument-taking predicate is *pirli*, which selects a SUBJECT *nyampu + ju*.

(42) Nyampu + ju – pirli.
this rock.
This is a rock.

The matrix predicate use of case-suffixes provides some evidence that an *ATP* case-suffix selects an OBLIQUE argument, rather than an OBJECT. If an *ATP* case-suffix selects an OBJECT, this makes the prediction that, when a semantic case acts as a matrix predicate, the Object of the semantic case is the OBJECT of the sentence. However, *pirli* shares no properties with the OBJECTs of transitive sentences that I can find. LOCATIVEs have never been found registered in the AUXILIARY, and nor have they been found controlling *kurra* clauses.[17] All indications suggest that sentences such as (43) and (44) are ungrammatical.

(43) *Japanangka -jana pirli-patu-rla
Japanangka-ABS -3pl stone-PL-LOC
Japanangka is on the stones. [made-up]

(44) *Japanangka pirli-ngka wanti-nja-kurra(-rla).
Japnangka-ABS stone-LOC fall-INF-OCOMP
Japnangka is on the stone which is falling. [made-up]
(.e.g when rock-climbing during a rock-slide)

It is misleading to call the complement of a case-suffix used as an argument-taking predicate an OBJECT. I will treat it as an OBLIQUE$_{theta}$ of that argument-taking predicate, (where *theta* stands for the name of a class of semantic roles). This weakens the parallelism between prepositions and semantic case-suffixes, if prepositions are considered to be transitive (as in the categorial feature systems proposed by Jackendoff

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17. One might be able to argue that the LOCATIVE suffix *rla* cannot attach to the *kurra* OCOMP complementizer and so a LOCATIVE nominal cannot control a *kurra* clause, since there is no agreement in case. However, this does not seem a very strong argument, since agreement of *kurra* clauses with DATIVE arguments is only optional.

(1977) and Bresnan (1982)), but I see no alternative. The object of a case-suffix used as a matrix predicate does not behave like the object of a Verb. However, the parallelism between the objects of prepositions and the objects of verbs is probably overstated. In Russian, the normal case for an OBJECT is ACCUSATIVE, and there are many prepositions which take ACCUSATIVE-marked arguments. But the ACCUSATIVE argument of a preposition does not seem to share any properties with objects of transitive verbs.[18]

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18. For instance, an ACCUSATIVE OBJECT can usually be substituted for by a GENITIVE in negative contexts:

Ja *ne* *videla* *ni* *odnu* *zhenshchinu.*
I-NOM not see-PAST-FEM not one-FEM-ACC woman-ACC
I didn't see one woman.
Ja *ne* *videla* *ni* *odnoj* *zhenshchiny.*
I-NOM not see-PAST-FEM not one-FEM-GEN woman-GEN
I didn't see a woman.

However, the ACCUSATIVE object of a preposition does not alternative with GENITIVEs.

Ja *ne* *smotrela* *ni* *na* *odnu* *zhenshchinu.*
I-NOM not look-PAST-FEM not at one-FEM-ACC woman-ACC
I didn't look at one woman.
**Ja* *ne* *smotrela* *ni* *na* *odnoj* *zhenshchiny*
I-NOM not look-PAST-FEM not at one-FEM-GEN woman-GEN
I didn't look at a woman.

I have been unable to find a clear example of a preposition with ACCUSATIVE case used as a matrix predicate, because ACCUSATIVE case is normally used for direction in PPs, and directionals rarely appear as matrix predicates. Certainly gapping does not license a substitution:

**On* *poexal* *v* *Moskvy,* *a* *ja --* *ni* *v*
He-NOM go-PAST-MASC in Moscow-ACC and I-NOM not in
odnoj *Evropejskoj* *stolitsy.*
one-FEM-GEN European-FEM-GEN capital-GEN.
He went to Europe, but I, not to a single European capital.

(I am grateful to Boris Katz and Beth Levin for help with this data. See also Neidle (1982), and Pesetsky (1982).)

3.4.3 ADJUNCTS

In 3.3 I suggested that there are two types of nominal ADJUNCT, those that select SUBJECTs, and those that do not. The former attribute properties to arguments, and the latter attribute properties to sentences. The distinction is even clearer with the *ATP* use of case-suffixes. I will first look at sentence attributes, and then turn to argument attributes.

3.4.3.1 Sentential ADJUNCTs

A nominal with an *ATP* case-suffix can be used to give the location in space (45), and (46), or time (47) of an event, as well as the reason for, or the manner of an event.

(45) Yuwarli ka-lu-jana panu nganti-rni *Yurntumu-rla*
House-ABS PRES-3pl-3pl many-ABS build-NPST Yuendumu-LOC
They are building lots of houses at Yuendumu. [EFW]

(46) Jurlarda + lku ka ngurrju-ma-ni *wilypiri-rla*
honey-ABS + THEN PRES make-NPST hollow.in.tree-LOC
minikiyi-rli + ji.
bee-ERG + EUPH.
The honey bee makes the honey inside the tree-hollow. [minikiyi]

(47) Kala-lu mangi rdarri-marda-rnu *kurdiji-rla + lku.*
USIT-3pl boy-ABS catch-PAST initiation-LOC + THEN
Then they caught the youths at initiation time. [mangi]

Almost any matrix predicate can be modified by an adjunct denoting location or time,or reason. The appearance of such adjuncts is not determined by the nature of the verb. The functional head of the ADJUNCT is the case marker itself. A LOCATIVE used as a sentence-attribute has the lexical entry:

LOCATIVE <(OBL$_{theta}$)>

The OBLIQUE$_{theta}$ is the nominal to which the case-suffix attaches.

For example, in (47), *kurdiji-rla* modifies the whole proposition by setting it in a time. The LOCATIVE suffix contributes the location relation and the nominal, *kurdiji*, contributes the time. *Kurdiji-rla* is assigned the function $\downarrow \in$ (↑ADJUNCTS). Since it does not select a SUBJECT, it does <u>not</u> introduce the equation (↑SUBJ PRED) = 'PRO'.

Therefore, semantic interpretation rules will interpret it as a sentence-attribute rather than an attribute of an argument.

3.4.3.2 Argument ADJUNCTs

Nominals with *ATP* case-suffixes can be used as *secondary predicates* attributing some property to an argument of the verb. They receive an additional case-suffix, agreeing with the case of the argument they are predicated of, as I mentioned in 3.2.3.2 and 3.3.[19]

These nominals function as ADJUNCTs. Unlike the sentence-attribute ADJUNCTS described in the previous section, they both select a SUBJECT and assign it the equation (↑SUBJ PRED) = *'PRO'*. This PRO SUBJECT is *anaphorically* controlled by some argument of the sentence. Which argument controls the ADJUNCT is determined by the extra case added to the nominal.[20] As I showed in 3.3.2, ADJUNCT-antecedent concord does not follow from the formal representation of functional structures. *Consistency* cannot rule out case clashes between the semantic case ADJUNCT and its controller.

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19. See Hale (1982 b) for an account of double case-marking. The *Warlpiri Survey* contains a useful set of examples of double case-marking with different semantic cases.

20. An ADJUNCT modifying an ABSOLUTIVE argument has no overt case-suffix, of course.

Muju-nya *ka-rnalu* *yangka-ju* *kuna-ngka kutu* *ngarri-rni.*
coccyx-EMPH PRES-1plex the-ABS anus-LOC close call-NPST
'Muju' is what we call that which is near the anus. [muju]

Case-marked nominals without extra case-marking can thus be ambiguous – as to whether the whole event takes place at a particular location, say, or as to whether location is predicated just of an ABSOLUTIVE argument.

Location can be unambiguously predicated of the OBJECT with the help of the OBJECT-control complementizer *kurra*.

Janganpa *ka-rnalu* *paka-rni* *wilypiri-kirra.*
possum-ABS PRES-1plex hit-NPST hollow.in.tree-OCOMP
We kill possums in the hollows of trees. [mangarli]

Pararri, ... *nya-nyi* *ka-rlipa* *wurnturu-kurra.*
rainbow-ABS, see-NPST PRES-1plin distance-OCOMP
A rainbow ... is what we see in the distance. [pararri]

Therefore, the *Agreement Convention*, or some equivalent proposal is required.

3.5 Representation of case-marked nominals

Having shown that case-suffixes act like prepositions in English, I will now discuss the representation of case-suffixes, in particular the assignment of functions to case-marked nominals, because it presents difficulties for the *Lexical Integrity Hypothesis*. I will argue that assigning functions in the morphology is the best way around this. The difference between using case as an agreement marker and case as an argument-taking predicate will be reduced to whether or not the case suffix has a syntactically relevant meaning (represented as a PRED value), and whether the nominal acts as the functional head.

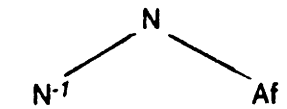
Let us now consider the morphological structure of the nominals *kurdu-jarra-rlu* and *wita-jarra-rlu* in (48), which was discussed in 3.3.2. As I mentioned there, *kurdu-jarra-rlu* is the SUBJECT, and *wita-jarra-rlu* is an ADJUNCT predicated of the SUBJECT. Thus, on *kurdu*, the ERGATIVE has the *ARG* use, and on *wita* it has the *ATT* use.

(48) *Kurdu-jarra-rlu* ka-pala maliki wajili-pi-nyi *wita-jarra-rlu.*
Child-DU-ERG PRES-2du dog-ABS chase-NPST small-DU-ERG
(The) two children are chasing the dog and they are small.

The morphological structures of *kurdu-jarra* and *wita-jarra* is given in (49). (I will justify using functional equations in the morphology in 3.5.1).

(49)

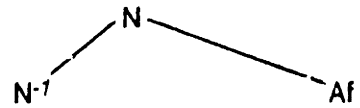
a. Argument use



kurdu-jarra rlu

↑PRED = '*kurdu*'

b. Attribute use



wita-jarra rlu

↑PRED = '*wita*' < (SUBJ) >

(49)a. and b. differ only in that *wita-jarra* selects a SUBJECT.

The *ARG* and *ATT* uses of case-suffixes share the property that the case-suffix acts principally as an indicator of a relation, rather than having a syntactically relevant meaning. This contrasts with the *ATP* use of case-suffixes, where the semantic contribution of the case-suffix is clear.[21] I will call the *ARG* and *ATT* uses of case-suffixes together the *agreement* use of case-suffixes, or *AGR* use, in contrast to the *ATP* use.

As I have already suggested, the distinction between the *ARG* and *ATP* uses of case-suffixes parallels the different uses of the preposition *at* in English:

(50) Cupid and Campaspe played *at* cards.
(51) They were sitting *at* a very large oak table.

Let us review how the difference between these two uses of the preposition *at* can be represented in LFG. Bresnan (1980b) has argued that this semantic distinction is represented not in *constituent structure* but in *functional structure*; the two uses of PPs may have the same constituent-structure, but they have different functions. The distinction between the *ARG* and the *ATP* uses is two-fold: in the *ATP* use, the *functional head* is the preposition, which provides the PRED feature, and the whole nominal has the function ADJUNCT or XCOMP; in the *ARG* use, the *functional head* is the nominal, and the whole nominal has some function such as OBLIQUE.

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21. There is, as I said in Chapter 2, a close connection between semantic role and case-suffixes, and similarly between the meaning of a preposition and its use as a relation-indicator. It is no accident that the ERGATIVE expresses a SUBJECT with the Agent role, and, when used as an argument-taking predicate, denotes "means", or "instrument". Likewise, it is no accident that the preposition *to* is used both for OBLIQUEs such as the Recipient in the sentence *She handed the baby to Lucy*, and for the directional argument-taking predicate in *How many miles is it to Babylon?*. By saying that in OBLIQUES, the preposition or case-marker has no PRED feature, I do not mean to claim that the preposition or case-marker is *meaningless*. I merely want to claim that its meaning is not relevant at the *syntactic level*. We may think of a verb such as *hand* as a complex predicate which includes the meaning of the preposition *to* as well. (I am grateful to Mark Gawron for discussion of this point.)

These functions are assigned to phrase structure positions, by means of an annotated phrase structure rule.

(52)	VP	→	V	(NP)	(NP)	PP*	PP*
				OBJ	OBJ2	$OBLIQUE_{theta}$	ADJUNCT

The difference between the *ATP* use of PPs and the *ARG* use of PPs can be represented by different annotations of ↑ = ↓ in the phrase structure rule expanding PP, together with the difference in meaningfulness. In the phrase structure rule, the P may be the functional head, when it is assigned the equation ↑ = ↓, and the NP is assigned an OBLIQUE function, as in (53).

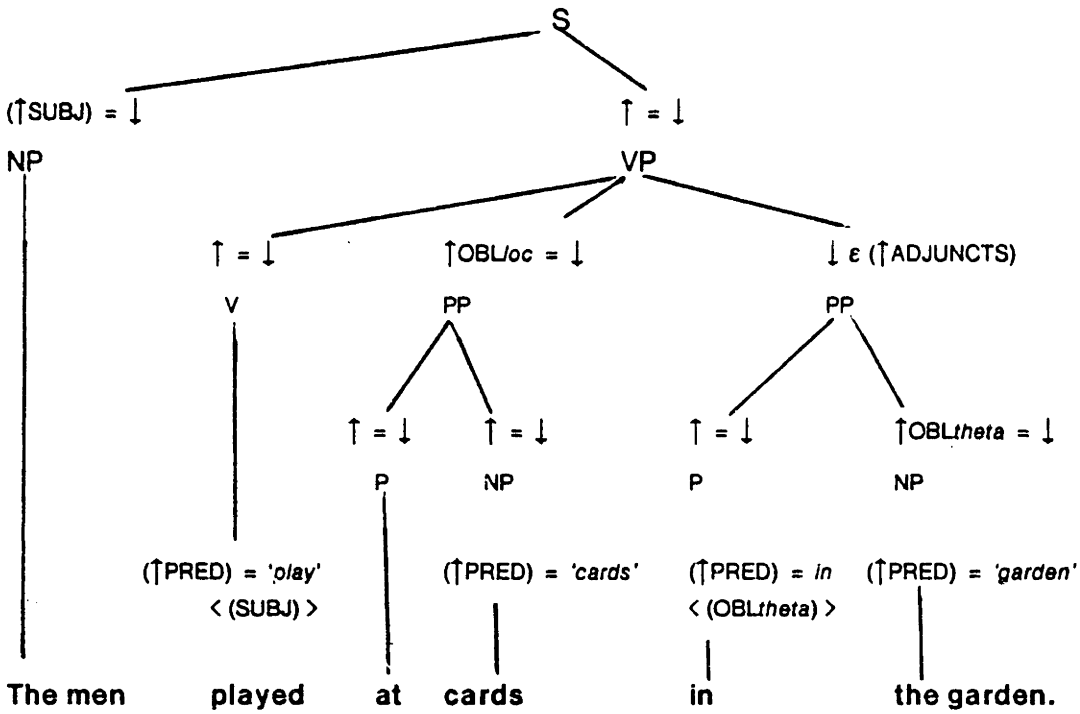
(53)	PP →	P	NP
		↑ = ↓	(↑OBL*theta*) = ↓

Alternatively, both the P and the NP may be assigned the equation ↑ = ↓, as in (54). However, in this instance only the NP has a meaning (PRED feature), and so acts as the functional head.

(54)	PP →	P	NP
		↑ = ↓	↑ = ↓

From these phrase structure rules, together with the lexical form information, (represented by a PRED feature), an annotated c-structure tree can be created, as shown in (55).

(55)



The equation ($\uparrow OBL_{loc}$) = $\downarrow$ attached to the PP indicates that the information about the PP is information about the $OBLIQUE_{loc}$ of the VP. Since the VP is the functional head of the sentence, information about the PP is also information about the $OBLIQUE_{loc}$ of the sentence. The functional head of this PP is the NP, and so the lexical form of the NP is the lexical form of the $OBLIQUE_{loc}$ of the sentence. The equation $\downarrow \varepsilon$ (↑ADJUNCTS) attached to the second PP provides the information that this PP is one of the ADJUNCTs of the sentence. The functional head of this PP is the P. The lexical form of the ADJUNCT is the lexical form of the P. Since the ATP denoted by the P selects an $OBLIQUE_{theta}$, the ADJUNCT must contain an $OBLIQUE_{theta}$. This function is expressed by the NP.

As I have attempted to show, the uses of case-suffixes in Warlpiri parallel the uses of prepositions in English. Ideally, a theory of grammar should capture this parallelism. But, extending the analysis of PPs in English to Warlpiri encounters several problems.

First, case-suffixes have a concord use which prepositions do not have. This difference can be disposed of by assuming that, whereas English only allows the *ARG* use of prepositions to occur with OBLIQUEs (and perhaps also OBJECTS), Warlpiri allows the *ARG* use to occur with every function (as befits a language in which case-marking is the primary way of indicating grammatical functions). These grammatical functions also include ADJUNCTS, thus creating a general agreement use, which I call *AGR*.

Second, allowing case-suffixes to act as *functional heads* does not jibe with Bresnan (1982a)'s definition of *functional head* given in Chapter 2. Bresnan restricts functional heads to *major categories* annotated with the equation $\uparrow = \downarrow$. But clearly a case-suffix is not a major category. I shall argue, however, that the $\uparrow = \downarrow$ equation must be assigned to the case-suffix within the *morphology*, not within the *syntax*. In both morphology and syntax, N, V, A and perhaps P will be major categories. I propose that in morphology, a case-suffix can also be treated as a major category.

The third problem is not so easy to dispose of. It has to do with the *Lexical Integrity Hypothesis*. Observe that the assignment of functions to the prepositions and the nominal in English is a *syntactic process*, because the preposition and the nominal are separate words, each with their own position in constituent-structure. But in Warlpiri, the case-marked nominal is a *morphological* word. LFG and LPM both assume that inflection, including case-affixation, is done in the lexicon, not in the syntax. Therefore, the only information available in the syntax is the case-*feature*, which does not distinguish between the *uses* of a case-suffix.[22]

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22. The LFG functional features on their own do not provide a way of expressing the difference between *AGR* and *ATP* case-markers. An ERGATIVE-marked nominal which indicates the SUBJECT relation will have the CASE feature ERGATIVE, just as an ERGATIVE-marked nominal used as an instrumental argument-taking predicate will have the CASE feature ERGATIVE. Thus the presence of the CASE-feature alone is insufficient to distinguish between *ATP* and *AGR* uses of case-suffixes.

Recall that in Chapter 1 I showed that the strongest form of the *Lexical Integrity Hypothesis* is derived from LPM, and that this prevents *any* c-structure process from having access to the internal structure of words. Now, the assignment of functional equations such as ↑ = ↓ and ↑OBLIQUE$_{goal}$ = ↓ to the parts of a PP, as I described it, is a c-structure process. It cannot apply to the parts of a nominal with a case-suffix used as an argument-taking predicate. Why not? Because Bracket Erasure has erased the brackets between the case-suffix and the nominal *before* lexical insertion. A nominal such as 'rock-LOC' *pirli-ngka* in (56) is a single unanalysable unit from the point of view of the syntax. This predicts of course that *pirli* in *pirli-ngka* is an incorporated argument which is not syntactically relevant; it should behave like the incorporated locative in *Fido treed the cat*. No anaphoric processes should be able to refer to the nominal 'rock' *pirli*. This prediction is false. It also predicts that the nominal 'rock' cannot be modified. But (56) and (57) show that this prediction too is false.

(56) Kar!i ka nguna-mi *pirli-ngka* *wita-ngka.*
Boomerang-ABS PRES lie-NPST rock-LOC small-LOC
A boomerang is lying on the small rock.

(57) Japanangka-rlu rla-jinta luwa-rnu marlu-ku *pirli-ngka-ku*
Japanangka-ERG CON-DAT shot-PAST kangaroo-DAT rock-LOC-DAT
wiri-ngka-ku
big-LOC-DAT
Japanangka shot at the kangaroo on the big rock.
Japanangka shot at the kangaroo on the rock, a big one.

At this point, a proponent of a theory in which inflection is done in the syntax, and derivation in the lexicon might claim that this provides evidence for such a theory. Suppose case-suffixes are really postpositions which cliticize to the nominal in the syntax. Then the boundaries will be visible to c-structure processes, and the nominal can be assigned the function OBLIQUE$_{theta}$. However, there is evidence showing that case-suffixes have to be attached before at least one type of derivational suffix. The verbalizing suffixes INCHOATIVE and CAUSATIVE can be suffixed to case-marked nominals as well as to uninflected nominals.

(58)

walypali-kirra-jarrimi
whitefellow-ALLATIVE-INCH
become like a whitefellow.

walya-kurra-mani
ground-ALLATIVE-CAUS
land an aircraft

langa-kurra-jarrimi
ear-ALLATIVE-INCH
hear and understand message

langa-kurra-mani
ear-ALLATIVE-CAUS
cause to understand message

yilya-nja-ngurlu-mani
send-INF-ELATIVE-CAUS
to flush out game

nguyu-ngku-mani
charcoal.blacking-ERGATIVE-CAUSE
Cover with charcoal-blacking

The fact that inflectional markers can precede derivational suffixes suggests that inflection should be done in the morphology, and not in the syntax.[23] So, although the *ATP* use of case-suffixes does not cause difficulties for theories that claim inflection is not subject to the *Lexical Integrity Hypothesis*, such theories are then left without an explanation for the fact that in Warlpiri (and a number of Australian languages) case-suffixes can *precede* derivational suffixes.

Furthermore, dismissing the *ATP* use of case-suffixes by allowing inflection to take place in the syntax fails to capture the insight that there are other analogous difficulties with the *Lexical Integrity Hypothesis* for which such a solution is not available. Sadock (1980) points out that a derivational process of noun-incorporation in Greenlandic Eskimo

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23. The argument is not as strong as it could be, because of the fact that the AUXILIARY complex, whose position is determined syntactically, can intervene between the nominal and the INCH or CAUS suffix, suggesting that the INCH and CAUS are very loosely bound derivational suffixes. See 2.5.2.

appears to violate the *Lexical Integrity Hypothesis*. Since the process is clearly derivational, and not inflectional, only abandonment of the distinction between morphology and syntax would permit a proponent of a theory in which inflection is done in the syntax to capture the resemblance between noun-incorporation and the *ATP* use of case-suffixes. Let us briefly examine the noun-incorporation problem.

In Greenlandic Eskimo, a nominal in a word formed by derivation can be anaphorically referred to, and modified, as Sadock (1975) shows. Verbs can be formed by incorporating nominals with one of two hundred or so verbal suffixes which mean things like *have, buy, eat* etc. The incorporated nominal acts semantically as an argument of the verb – Sadock calls it an OBJECT. These incorporated OBJECTs can be modified by independent words denoting attributes. Furthermore, they can be referred to by anaphoric processes. Thus in (59) (Sadock's (37) and (38)), the incorporated object *airplane* of the first verb is the understood SUBJECT of the second two verbs.

(59) *Suulut* *timmisartuliorpoq* *Suluusaqarpoq*
Søren-ABS airplane-make-INDIC-3sg. wing-have-INDIC-3sg
aquuteqarllunilu.
rudder-have-INF-4sg-and
Søren made an airplane. It has wings and a rudder.

In (60), the attribute has instrumental case, the usual case of an indefinite unincorporated nominal acting as OBJECT. The attribute also agrees with the incorporated OBJECT in number – 'sled' is a nominal which is morphologically plural when syntactically singular.

(60) *Angisuunik* *qamuteqarpoq.*
big-NOM-PL-INST sled-have-INDIC-3sg
He has a big sled.

Observe that if these structures are formed in the morphology, then Bracket Erasure will have taken place before lexical insertion. Therefore the fact that there is an incorporated object will be invisible to the syntax. No anaphoric or modifiying processes can affect it.

I contend that the nominal to which a semantic case-suffix attaches has a morphological and syntactic status similar to that of the incorporated objects. The structures for both are given in (61). The structures are quite parallel, with the exception that the Greenlandic example contains a derivational suffix, and the Warlpiri example an inflectional suffix.

(61)

Greenlandic		**Warlpiri**	
[N -	VERB]$_V$	[N -	CASE]$_N$
OBJECT	ATP	OBLIQUE$_{theta}$	ATP

In short, the problem for the *Lexical Integrity Hypothesis* is that words can be *functionally complex*: different parts of a word may have different syntactic functions, but cannot be assigned those functions in the syntax. Simple feature-percolation is unable to capture this, unless an enriched theory of features which encompasses functions is devised. However, to the extent that a feature system incorporates functions, it will also mimic the existing theory of functions in LFG. This is a redundancy which the theory can do without.

3.5.1 Solution

Since, as I showed in 1.3.3, the *Lexical Integrity Hypothesis* is derived in LPM from Bracket Erasure, there are at least two possible ways of expressing the fact that nominals with *ATP* case-suffixes are functionally complex. One way is that Bracket Erasure could exceptionally fail to apply to nominals with case-suffixes. Let us call this "Bracket Retention. The syntax will have access to the brackets, and will be able to assign functions accordingly. Alternatively, Bracket Erasure can be maintained, but functional equations will be allowed to appear in the morphology.

The first solution must be treated with caution, because, unconstrained, Bracket retention will render the *Lexical Integrity Hypothesis* vacuous. A plausible constraint might be that it can fail if the elements do not form a semantic unit. For instance, if a discourse-relevant clitic, such as a FOCUS clitic, must, for phonological reasons, be attached in the morphology, the brackets between the clitic and its host would be kept, because they do not form a semantic unit. However, such a constraint would not apply to a nominal and a case-suffix, which seem clearly to be a single unit. Another difficulty with the Bracket retention account is that there is no independent evidence (such as maintenance of brackets on the next level) for supposing that Bracket Erasure has failed to apply between the nominal and the case-suffix.

The second solution has already been anticipated in the discussion of pronominal clitics in Chapter 2. If pronominal clitics have to be assembled in the morphology, then information about the functions they represent must also be provided in the morphology. I suggested that this be done in the form of functional equations, identical to those used in syntax. This is only possible in a theory which posits an *autonomous* level of functions, independent of visible phrase structure positions. Such theories include LFG, Relational Grammar, and those versions of Government-Binding which accept the need for a *lexical* or *virtual* structure in terms of which grammatical functions can be defined, as for instance in Zubizarreta (1982). Since this level is autonomous, information about functions can appear attached to *morphological* positions, just as they are attached to *phrase structure* positions. Thus, when a case-suffix is attached in the morphology to a nominal, information about the case-suffix's functions, and the function of the nominal to which it attaches, can also be attached. The formalism provided by LFG for representing functional information attached to *phrase structure* positions can readily be transferred to represent functional information provided in the *morphology*.

Some functions, such as PRED equations, are inherent to the particular lexical item (nominal or suffix). Others will be attached as part of the word-formation rule adding a case-suffix to a nominal, (or perhaps more generally in the morphology: see Chapter 4). These functional equations must be realized on the word when it emerges from the lexicon. Clearly, the equations must be *consistent*; otherwise no consistent f-structure will be constructable. For instance, a word cannot be assigned two conflicting

case-values, or number values.[24] Similarly, a word cannot have two PRED equations. I adopt the constraint that the functional equations assigned in the morphology have the same form as those assigned in the syntax. That is, they must use the same sets of features and functions, and they must also be subject to the principle of *functional locality* (Principle 10, in 2.2.7) preventing more than two function and functional feature names on either side of an equation.

Let us look at the *AGR* and *ATP* uses of case- suffixes.

I assume that, just as the lexical form, represented by a PRED feature, is optional for prepositions, so it is also optional for case-suffixes. When the option is taken, the *ATP* use of a case-suffix is given. When the option is not taken, the case-suffix has the *AGR* use.

Just as a nominal in a PP can act either as an *argument* of the predicate denoted by the preposition, or as the *functional head*, so too, the nominal to which a case-suffix attaches can act either as the *functional head*, or as an *argument* of the predicate denoted by the case-suffix. Likewise, just as a nominal in a PP acting as an argument of the preposition has the function OBLIQUE_{theta}, so a nominal acting as an argument of a case-suffix will have the function OBLIQUE_{theta}. Examples are repeated in (62) and (63).

(62) Japanangka-rlu luwa-rnu marlu pirli-*ngka*.
Japanangka-ERG shot-PAST kangaroo-ABS rock-LOC
Japanangka shot the kangaroo on the rock. .

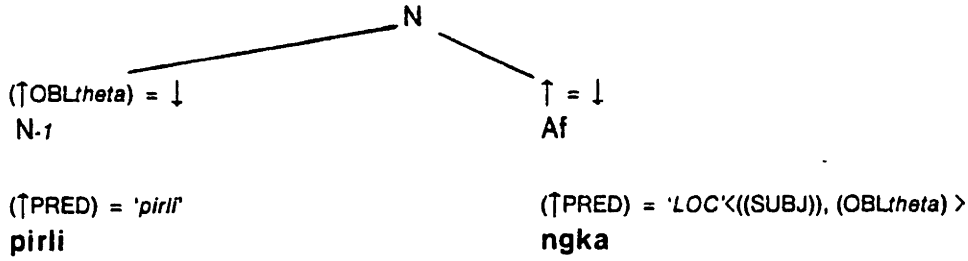
(63) Ngarrka-patu ka-lu karti-*ngka* manyu-karri-mi ..
Man-PL-ABS PRES-3pl cards-LOC play-stand-NPST ..
The men are playing cards... [EFW: (94)]

The morphological structure of *pirli-ngka*, a nominal with the *ATP* use of the LOCATIVE in (62), is represented in (64). The morphological structure of *karti-ngka*, a nominal with the *AGR* use of the LOCATIVE in (63), is represented in (65). In each instance I have circled the functional head.

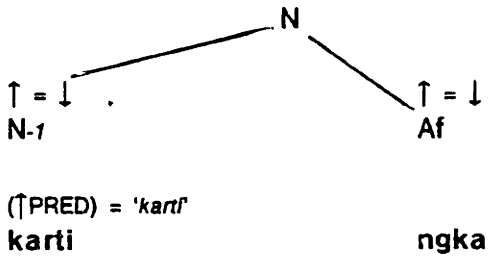
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24. Exactly which functional equations can be attached, and exactly what constraints on their attachment are needed other than *consistency*, is a matter for further investigation.

(64) **Argument-Taking Predicate Use**

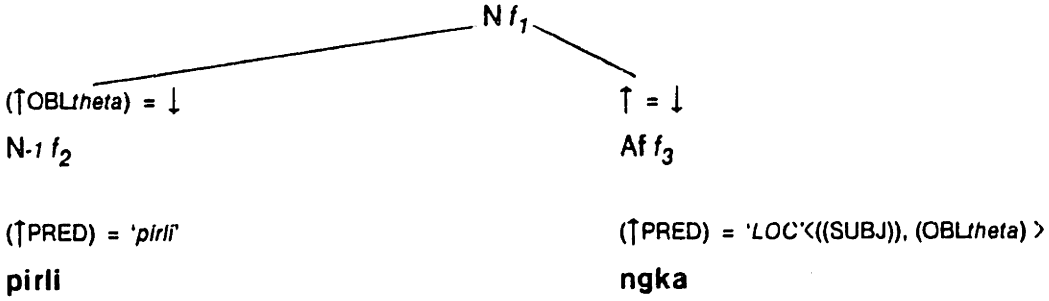


(65) **Agreement use**



How are these equations transmitted to the c-structure? Technically, one could apply the instantiation procedure to the morphological tree. The instantiated equations attached to the lexical category would be inserted at lexical insertion. The instantiation procedure is described in detail in Kaplan and Bresnan (1980). I have assumed it in the building of f-structures described in Chapter 2. Nodes of the annotated c-structure tree are labelled with actual variables, and these variables are substituted for meta-variables in the equations attached to nodes, to form "f-description" statements, which are used to construct the f-structure.

Consider the tree resulting from labelling (64) with actual variables.



Substituting the actual variables for the meta-variables ↑ and ↓ results in the following set of f-descriptions.

(f_1 OBLIQUE$_{theta}$) = f_2
(f_1) = f_3
(f_2 PRED) = 'pirli'
(f_3 PRED) = 'LOC' < ((SUBJ)) (OBL$_{theta}$) >

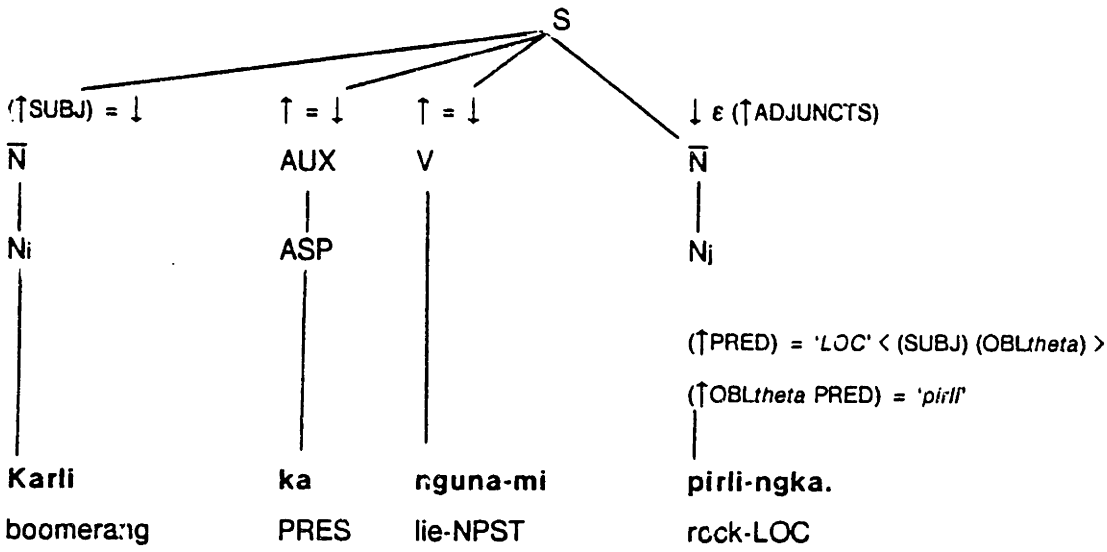
Manipulating these equations results in the following set:

(f_1 PRED) = 'LOC' < ((SUBJ)) (OBL$_{theta}$) >
(f_1 OBL$_{theta}$ PRED) = 'pirli'

Alternatively, words could appear at lexical insertion with the equations solved to form a partial f-structure. That is, the annotated c-structure would contain some partial f-structures.

Adding equations with variables, or adding partially built f-structures, both detract from the comprehensibility of the c-structure tree. I have chosen therefore to represent this instantiation process by simply combining the equations into larger, derived equations. These larger equations will appear to violate *functional locality* (Principle 10, 2.2.7) , by having more than two names on either side of the equation. However, I assume that functional locality does not apply to derived equations. The N will have equations of *both* the nominal *and* the case-suffix, as (66) illustrates:

(66)



That is, N_j will carry information about two different functions, namely their lexical forms. Here, the importance of NOT identifying a node with the function that labels it becomes apparent. Otherwise N_j would be inconsistent.

Since the lexical forms of the parts of the word are now visible, it is possible both to attribute properties to, and to refer to, the $OBLIQUE_{theta}$ argument of the predicate denoted by the case-suffix.

So far, I have assumed the following rules for assigning functional equations in the morphology.

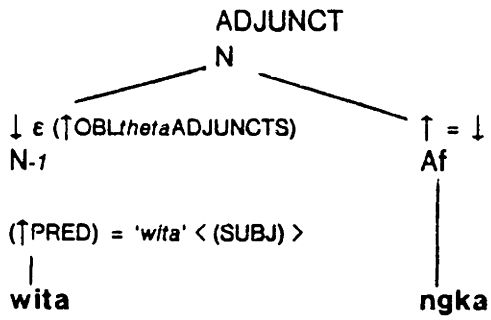
Assign the case-suffixes the equation ↑ = ↓.

Assign the nominal to which a case-suffix attaches either the functional head status (by means of the equation ↑ = ↓*), or the function* $OBLIQUE_{theta}$.

As it stands, these rules do not cover the use of a case-marked nominal as an *attribute* of the $OBLIQUE_{theta}$ of a case-suffix, as for example, the ... e of *wita-ngka* 'small' in (56).

A first step is to allow the nominal to which a case-suffix is attached to have the function OBLIQUE$_{theta}$ ADJUNCT, meaning that it is an ADJUNCT of some argument bearing the OBLIQUE$_{theta}$ grammatical function. This is given in (67).

(67) **Agreement use: modifying an OBLIQUE$_{theta}$**



The whole N will have the function ADJUNCT, because it modifies an argument (with the function OBLIQUE$_{theta}$) of an ADJUNCT. The case-suffix acts purely as an agreement marker. In functional structure the two ADJUNCTs will merge to form a single ADJUNCT, containing a modified argument. (This process will be discussed at greater length in Chapter 4.)

The next step involves the representation of case. Recall that it is a general property of attributes in Warlpiri that they agree in case with the nominal they attribute a property to. Therefore the syntax must be provided with the information that in (67) the case of the OBLIQUE ADJUNCT is LOCATIVE. I propose that when a case-suffix C is attached to a nominal, the nominal has the case-feature of the suffix, represented by the equation ↓CASE = C.

The assignment by a case-suffix of a case-feature to the nominal to which it attaches parallels in the morphology the syntactic assignment of a case-feature to a nominal by a preposition. However, while prepositions allow their OBLIQUE OBJECTS to have different

cases,[25] a case-suffix cannot assign a case other than itself to the nominal which it attaches to. This property of assigning a case-feature to the nominal does not differentiate semantic-case suffixes from grammatical case-suffixes, because both can be used as argument-taking predicates selecting OBLIQUE$_{theta}$s.

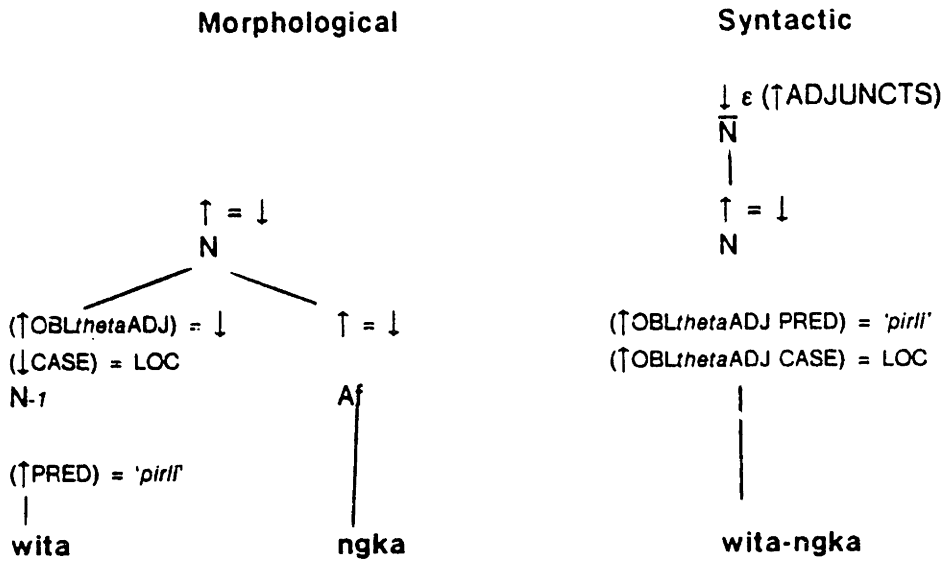
In (68) through (70) I present the structures resulting from the operation of the rule assigning the case-feature. On the righthand side I show the morphological structure of the nominal, on the lefthand side I show the nominal as it appears in the syntax with its equations attached. (68) and (69) show the morphological structure of nominals bearing the function ADJUNCT. In (68), the nominal to which the case-suffix attaches has the function OBLIQUE$_{theta}$ ADJUNCT. By virtue of the equation ↓CASE = LOCATIVE the OBLIQUE$_{theta}$ ADJUNCT has LOCATIVE case. The whole ADJUNCT has no particular case.[26]

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25. For instance, the preposition *v* 'in, into' in Russian takes either ACCUSATIVE or PREPOSITIONAL case-marked arguments, while the preposition *in* 'in, into' in German takes either ACCUSATIVE or DATIVE case-marked arguments. In such languages, it is the combination of the case and the preposition which determines the semantic role, and sometimes the grammatical function of the prepositional Object. Thus in the German sentence: *Ich gehe im Garten* (DATIVE), the PP is a locative ADJUNCT, *I walk about in the garden.* In the sentence *Ich gehe in den Garten* (ACCUSATIVE), on the other hand, the PP is a directional XCOMP: *I go into the garden.*

26. In fact, the whole ADJUNCT will get ABSOLUTIVE case by a default assignment that takes place in the syntax. See 3.5.2.3.

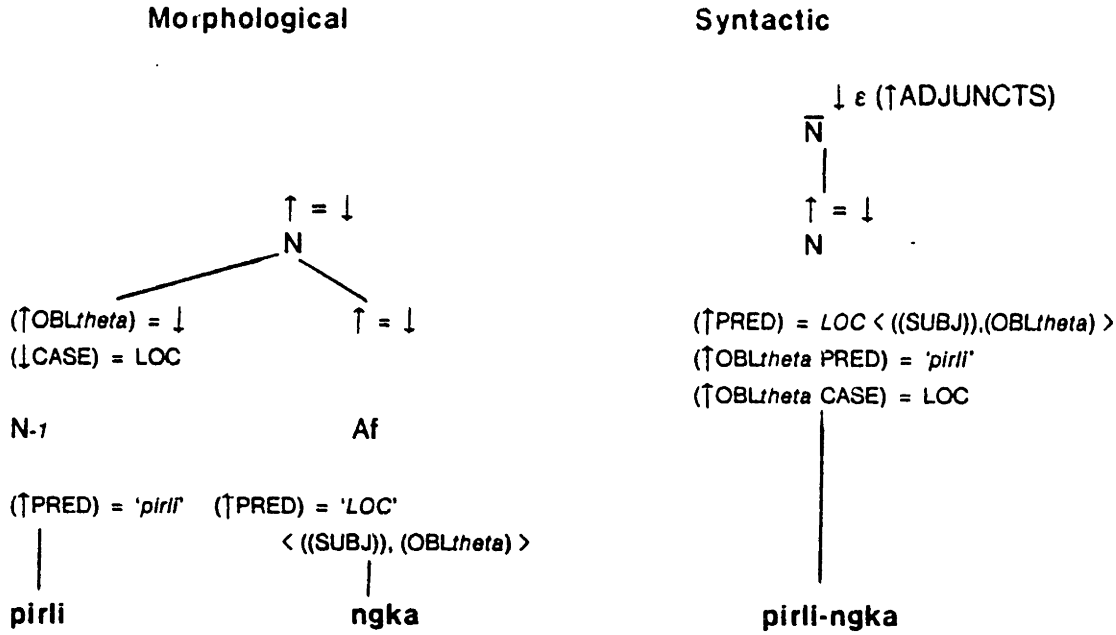
(68)



I will explain in Chapter 4 the assignment of ↑ = ↓ to N within N̄. Observe that an equation such as (↑OBL*theta*ADJ PRED) = *'pirli'* apparently violates *functional locality*. However, it is a derived equation, and so there is no violation.

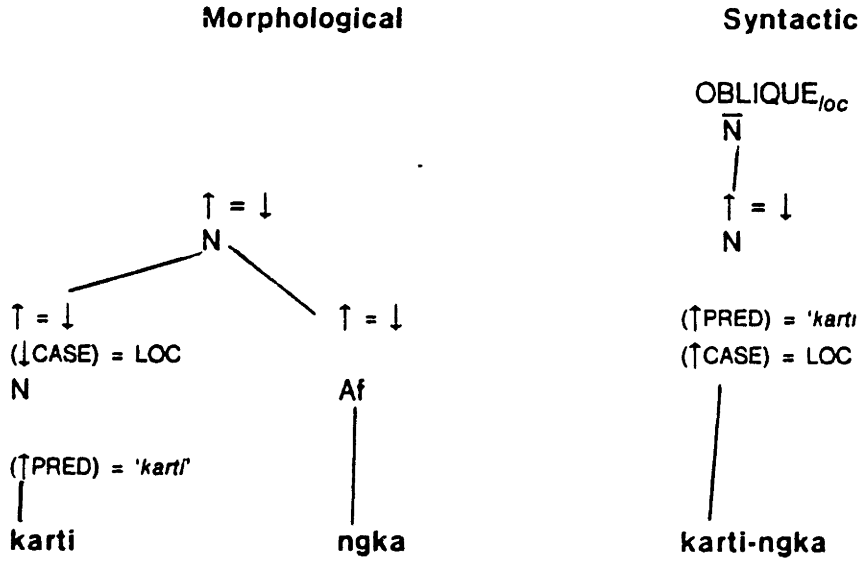
In (69), the nominal to which the case-suffix attaches has the function OBLIQUE$_{theta}$. By virtue of the equation ↓CASE = LOCATIVE, the OBLIQUE$_{theta}$ has LOCATIVE case. Again the whole ADJUNCT has no particular case.

(69)



(70) shows a nominal which has an OBLIQUE function in the syntax. By virtue of the equation ↓CASE = LOCATIVE, and the functional head equation ↑ = ↓, the whole OBLIQUE argument has LOCATIVE case.

(70)



This way of representing functions in the morphology extends naturally to Greenlandic Eskimo. As part of word-formation in Greenlandic Eskimo, when a verb-suffix is attached to a noun, the noun is annotated with the function OBJECT (or possibly ($\uparrow OBL_{theme}$) = $\downarrow$, since they behave like OBJECTS which have been put in the instrumental case as a result of a grammatical function changing rule, rather than like OBJECTS with ABSOLUTIVE case). Since the verb is the functional head of the sentence, a nominal attached to the verb and bearing the functional equation ($\uparrow$OBJ) = $\downarrow$ will provide information about the OBJECT of the sentence.[27] At this point it is worth commenting on the distinction between *functional head*, and *morphological head*. In some morphological theories, (for instance, Lieber (1980), Williams (1981)), case suffixes are assumed to be the morphological head of the word, no matter what the use of the case-suffix.[28] Under these accounts, the morphological head has two important properties. First, the category of the morphological head is claimed to be non-distinct from the category of the word. This is of course true of the case-suffixes; whether they have the *ATP* use or the *AGR* use, the resultant form is still a nominal. Second, features of the head take priority over features of the base. The case-suffix, whether *ATP* or *AGR*, still assigns the equation $\downarrow$CASE = C to the nominal to which it attaches. However, in order to account for double case-marking, as I will show in 3.5.2, I need a somewhat richer theory of feature percolation than Lieber and Williams adopt. Moreover, since I am expressing the difference between the *AGR* and *ATP* uses of case-suffixes, as a difference between whether the nominal or the case-suffix is the head of the whole N, it is clear that for my

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27. It is conceivable in languages such as Icelandic, that, when a resultative attribute is compounded with a verb, the resultative should have the function $\uparrow$XCOMP = $\downarrow$, as in

Henni dauδ-brá.
she-DAT death-brought
She was scared to death.

If, as I speculate, no other resultative can occur together with *dauδ-brá*, this could be explained on the assumption that *dauδ* has the function $\uparrow$XCOMP. *Consistency* would prevent any other argument being assigned the function XCOMP.

28. Selkirk (1982), however, claims for independent reasons that, while a derivational affix is the head of the word which it forms, an inflectional affix, such as a case-suffix, is not.

account to be compatible with the view of morphology espoused by Lieber and Williams, a distinction must be made between *functional heads*, and *morphological heads*. Unlike a *morphological head*, a *functional* head provides information about function interpretation, rather than categorial information.

I briefly summarize the rules for assigning functions within the morphology to the parts of a case-marked nominal:

Assign the case-suffixes the equation $\uparrow = \downarrow$.[29]

Assign the nominal to which a case-suffix attaches either the functional head status (by means of the equation $\uparrow = \downarrow$*), or the function* $OBLIQUE_{theta}$*, or the function* $OBLIQUE_{theta}ADJUNCT$.

Assign the nominal to which a case-suffix C attaches the equation $\downarrow CASE = C$.

In the next section, I will examine double-case-marking structures.

3.5.2 **Double case-marking**

In a word such as 'rock-LOC-DAT' [*pirli-ngka-ku*] in (71), the LOCATIVE acts as an argument-taking predicate, and the DATIVE as a concord marker.

(71) Japanangka-rlu rla-jinta luwa-rnu marlu-ku *pirli-ngka-ku*
Japanangka-ERG CON-DAT shot-PAST kangaroo-DAT rock-LOC-DAT
wiri-ngka-ku
big-LOC-DAT
Japanangka shot at the kangaroo on the big rock.
Japanangka shot at the kangaroo on the rock, a big one.

The innermost suffix *has* to act as an Argument-Taking Predicate. The order could not be reversed. But how is this to be captured? First, saying that the nominal has two features of case is impossible in LFG, (and probably in most theories) because the

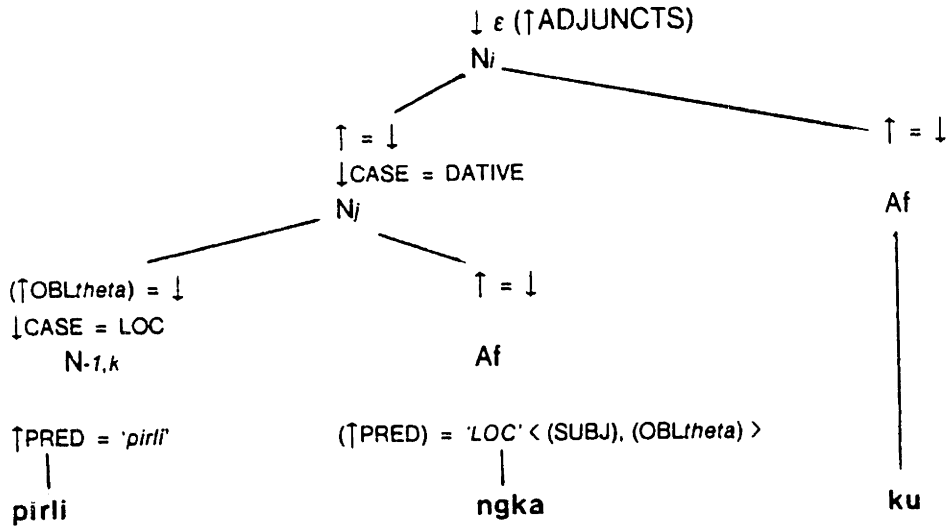
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29. This rule is unnecessary if we assume that the case-suffix is always the *morphological* head of the word, and that the morphological head is always assigned the equation $\uparrow = \downarrow$, as a way of capturing Williams' and Lieber's insights about the feature transmission properties of morphological heads. Of course, the case-suffix is only the *functional* head of the word, if it has a meaning, i.e. a PRED feature.

well-formedness convention of Consistency rules it out. Even if we could allow two case-features, how can we capture the ordering facts, that the LOCATIVE has to be the Argument-Taking Predicate, and the DATIVE the concord-marker? Feature percolation doesn't preserve derivational history. The end result will just be two unordered features of case. Suppose one stipulates that the DATIVE and LOCATIVE are just two types of suffix, with different features; that is, that there are two types of feature: *ATP* case features, and *AGR* features, and that *ATP* features must precede *AGR* features. If semantic case-suffixes such as LOCATIVEs were always used as argument-taking predicates, and grammatical case-suffixes such as DATIVEs were always used as *AGR* case-suffixes, this might have some value. But they are not. These features do not correspond directly to the morphological classes I have called *grammatical* and *semantic* case. Although LOCATIVEs are predominately ATPs (or attributes of arguments of LOCATIVE ATPs), they can be ARGs, as I noted in 3.2.1. And the grammatical case-suffix ERGATIVE can be used as an argument-taking predicate, as I noted in 3.2.2. Moreover, saying that LOCATIVEs optionally have an *AGR* feature, and that DATIVEs optionally have an *ATP* feature is simply to recapitulate the functional information.

So, to capture the order of the case-suffixes in double case-marking, we need something like the assigning of functions in the morphology, (or the building up of logical form in the morphology described in Muysken (1981)). The account I have given so far of function assignment will easily extend to double case-marking structures. The annotated morphological structure of a Warlpiri double-case-marked nominal is given in (72).

(72)



Observe that N_j has the case feature DATIVE by virtue of the DATIVE case-suffix *ku*. Therefore the whole ADJUNCT has the case-feature DATIVE, and so can modify a DATIVE nominal. N_k has the case-feature LOCATIVE by virtue of being attached to the LOCATIVE case-suffix *rla*. Therefore the $OBLIQUE_{theta}$ has the case-feature LOCATIVE, and so can be modified by a LOCATIVE-marked ADJUNCT. At the syntactic level the nominal will have the equations given in (73).

(73)

↓ ε (↑ADJUNCTS)
N
|
(↑CASE) = DATIVE
(↑PRED) = '*LOCATIVE*' < (SUBJ), (OBL*theta*) >
(↑OBL*theta* PRED) = '*pirli*'
(↑OBL*theta* CASE) = LOCATIVE

If the case-suffix attached to N_k had been an *AGR* suffix, rather than an *ATP* suffix, the nominal would have had the equation ↑ = ↓, the case-suffix would have percolated,

and the whole nominal would have violated *consistency*,[30] as (74) illustrates:

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30. William Poser pointed out to me, that my account does not extend easily to certain other instances of double case-marking, notably those found in the Australian languages Ngarluma, Yinjibarndi and Lardil, in which all the elements of a subordinate clause are marked with the case of the controller. On my account, an element which requires its case checked by its governor, e.g. an OBJECT, or an OBLIQUE, cannot appear in a double case-marking construction, because, if the OBLIQUE case were visible in syntax, it would conflict with the additional agreement case. But consider the following examples from Ngarluma. In i. all elements of a subordinate clause, including the SUBJECT *palu*, are marked LOCATIVE, to show that the clause functions as a LOCATIVE.

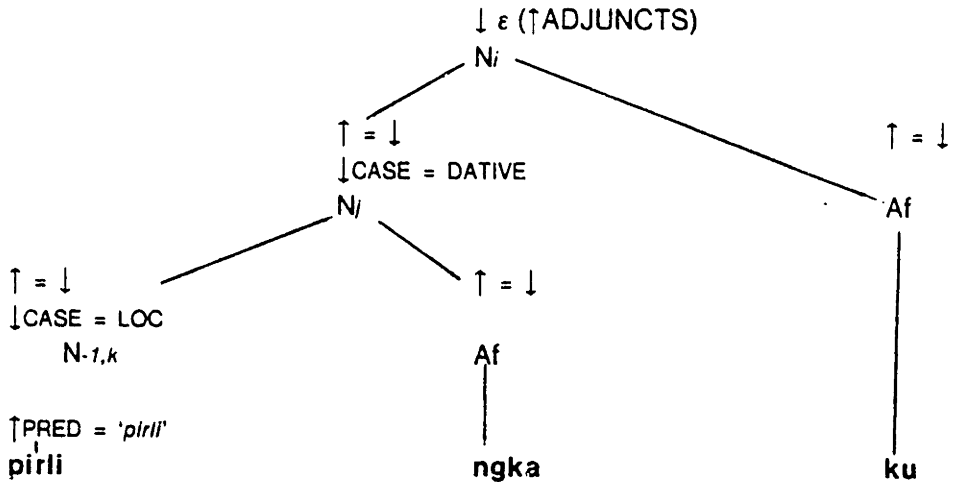
i. *Ngayi* *nyurnti-ka-rna* *mangkuru-ku* # *palu-la* *mirta-ngka + lyi*
I-NOM dead-CAUS-PAST kangaroo-ACC he-LOC not-LOC + TIME
milpa-nguru-la
come-ACT.PARTIC-LOC
I killed the kangaroo before he came up.

In ii. the oblique agent *nyintala* receives ACCUSATIVE case indicating that it is to be construed as part of a subordinate clause controlled by an argument with ACCUSATIVE case, *yarnta-yi*.

ii. *Ngayi* *jimpayi-ka-rnakurla-ku* *marrparnta-nha* *yarnta-yi*
I-NOM 'lose'-CAUS-PASS.PARTIC-ACC find-PAST day-ACC
nyintala-ku
you-LOC-ACC
I found the watch which you lost.

As is clear, the fact that double case-marking can attach to a SUBJECT (which would otherwise be NOMINATIVE), or to an oblique agent (which would otherwise just have LOCATIVE marking) means that the account of double case-marking given for Warlpiri does not extend to Ngarluma. But, since the parts of a subordinate clause in Warlpiri do not in general receive the case of the controller (see 6.6.6. for some possible examples), this does not invalidate the account of Warlpiri. It is possible that in Ngarluma one may have to resort to the device of having different types of case-features. (The Ngarluma data is taken from Simpson (1980), which is based on Hale's fieldnotes.)

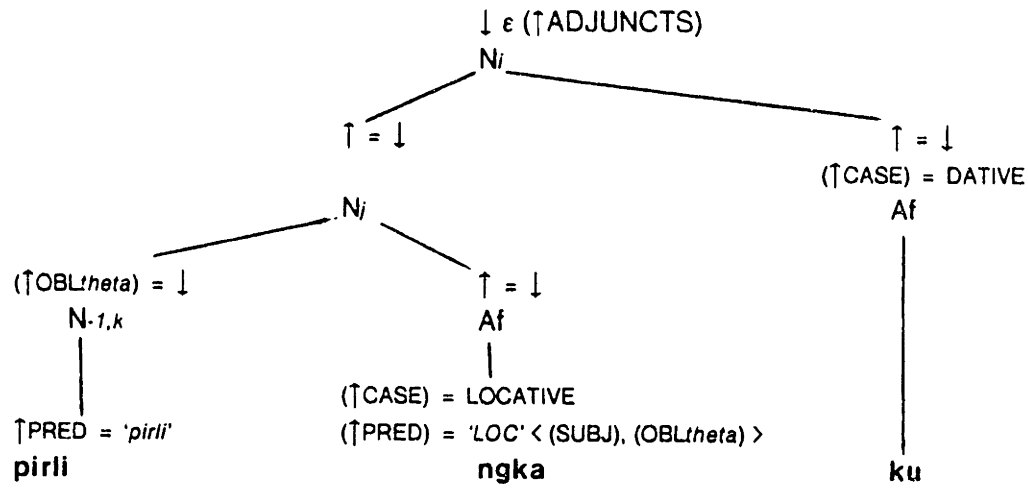
(74)



In (74), by virtue of the equations ↑ = ↓ on $N_{-1,k}$, and on N_j, the node which dominates it, the whole N, N_j has two case equations, DATIVE and LOCATIVE, which clash. Therefore an f-structure built from this c-structure will be inconsistent.

In the account of case-percolation given in Lieber (1980), the case-suffix is the head of a word, and percolates its features to the word. Under such an account, N_j has DATIVE case, and N_j has LOCATIVE case. If N_j also has LOCATIVE case, *consistency* is violated. If N_j does not have LOCATIVE case, it is not clear how the fact that *pirli* (N_k) must have LOCATIVE case is to be captured. This can be verified by looking at (75). (I represent the standard view of feature percolation by the equation (↑CASE) = C for convenience.)

(75)



Therefore, in order to avoid such clashes, I assume that case-suffixes such as LOCATIVE do not percolate their case-feature.

I want now to turn to another issue in the representation of double case-marking. This is the fact that only grammatical case-suffixes can attach to semantic case-suffixes. Semantic case-suffixes cannot attach to grammatical case-suffixes, or to other semantic case-suffixes.[31]

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31. A natural question to ask is: how then is dependence among SCNs represented? For instance, how does one represent *on the table in the garden*, where *in the garden* could be predicated of the table, or of the whole event? As far as I can tell, such a sentence would have two LOCATIVEs in Warlpiri, and whatever principle of semantic interpretation is needed to represent the ambiguity in English presumably could carry over to Warlpiri.

Kajika-npa	*nyuntu*	*yangka*	*warlu-ngka*	*nyina-karla,*	*wuu*
POT-2sg	you-ABS	the	fire-LOC	sit-IRR	interjection
miyi-rlangu	*nga-njarla*	*warlu-ngka-rlu,*	*ngurra-ngka-rlu,*		
food-ABS + E.G.	eat-IRR	fire-LOC-ERG	camp-LOC-ERG		

If you are sitting near the fire say, or eating by the fire in your camp, [jintirrjintirnpa] In this example. location by the fire *warlu*, and in the camp, *ngurra*, are both predicated of the SUBJECT. However, the fire is understood to be in the camp.

SEMANTIC CASE GRAMMATICAL CASE
*SEMANTIC CASE SEMANTIC CASE
*GRAMMATICAL CASE SEMANTIC CASE
?GRAMMATICAL CASE GRAMMATICAL CASE

Leaving aside for the moment the question of whether grammatical case-suffixes can attach to other grammatical case-suffixes, I will first look at what prevents semantic case-suffixes from attaching to other semantic case-suffixes, or to grammatical case-suffixes.

A first guess at why semantic case suffixes cannot attach to grammatical case-suffixes might be that the *function* of an SCN is such that it cannot control another predicate. However, a look at the behaviour of nominals with DATIVE case suggests that nominals with DATIVE case can act as the controllers of secondary predicates no matter what the function of the DATIVE. This argues against using the *controller's function* as the basis of an explanation for why semantic case-suffixes do not attach to other case-suffixes. The examples below illustrate the variety of functions that a nominal with DATIVE case which controls a secondary predicate with semantic case may have. In (76), the LOCATIVE is predicated of a DATIVE OBJECT:

(76) Ngarrka-ngku ka-rlajinta *yankirri-ki* luwa-rni *ngapa-ngka-ku.*
Man-ERG PRES-CON-DAT emu-DAT shoot-NPST water-LOC-DAT.
The man is shooting at an emu at the waterhole.
[The emu is at the waterhole] [Hale, EFW]

In (77), however, the LOCATIVE is predicated of an Adjunct DATIVE, the benefactive:

(77) Purlka-ngku ka-rla *yapa-ku* miyi marda-rni *ngurra-ngurlu-ku.*
old man-ERG PRES-DAT man-DAT food-ABS hold-PRES camp-EL-DAT
The old man is holding food for the person (who is on his way) from camp.
[Survey]

In (78), the LOCATIVE is predicated of a DATIVE directional in an intransitive verb:

(78) *Marna-ngka-ku* -rla yanu-rnu *mirnirri-ki.*
Grass-LOC-DAT -DAT go-PAST mountain-devil-DAT
He came across a mountain-devil in the grass. [Kesteven: ex.42]

In (79) the LOCATIVE is predicated of a DATIVE representing purpose or reason in an intransitive sentence:

(79) *Jungunypa-ku* -ju-lu-rla parnka-ya-rni *ngulya-ngka-ku.*
mouse-DAT 1sg-pl-DAT run-IMP-HERE hole-LOC-DAT
Run here over to me for the mouse which is in the hole. [Survey]

In (80), the LOCATIVE is[32] predicated of a DATIVE purposive which is not even registered in the AUX:

(80) Nyurruwarnu-patu -lpa wapa-ja ngari *manyu-ku* –
old-PL-ABS -PAST go-PAST just play-DAT –
purlapa-rla-ku.
corroboree-LOC-DAT
The people in the old days would go for fun at corroborrees. -- [H66PSJ: 1165]

Furthermore, whereas in English, there is a restriction against predicating location of the indirect object of a ditransitive (**I sent John the money in his wheelchair*), in Warlpiri, location is freely predicated of DATIVEs in ditransitives.

(81) Yurrkunyu-rlu -lpa-ngku yu-ngkarla mangarri manu nalija
police-ERG PAST-2sg give-IRR food-ABS and tea-ABS
rdaku-ngka-ku + ju.
jail-LOC-DAT + EUPH
The police must give you food and tea in jail. [MKJ]

(82) Karnta-ngku ka-rla *kurdu-ku* miyi yi-nyi
Woman-ERG PRES-DAT baby-DAT food-ABS give-NPST
parraja-rla-ku.
coolamon-LOC-DAT
The woman is giving food to the baby (who is) in the coolamon [carrying dish].

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32. Mary Laughren suggests an alternative interpretation in which *purlapa-rla* is the $\text{OBLIQUE}_{locative}$ argument of *manyu*, and the *ku* is the purposive use of the DATIVE attached to an action nominal.

[Survey]

In (82), the DATIVE shows that only the child is in the coolamon. If there is no extra case-marking on *parraja-rla*, the direct object *miyi*, 'food', is understood to be in the coolamon.[33]

(83) Karnta-ngku ka-rla kurdu-ku *miyi* yi-nyi *parraja-rla*.
Woman-ERG PRES-DAT child-DAT food-ABS give-NPST coolamon-LOC
The woman is giving the child food which is in the coolamon [carrying dish].
[Survey]

These examples show that the fact that only GCNs can control SCN secondary predicates does not stem from a restriction on functions, (say, that the controller has to have a certain type of function, perhaps a [+ DIRECT] function). I claim, following Hale (EFW) and Nash (1980), that the restriction is rather a morphological restriction on which cases can receive additional case-marking.

Recall that an SCN secondary predicate has to agree with its controller in CASE, by virtue of the *Agreement Convention*. If adding a semantic case-suffix creates an N, and if semantic case-suffixes can only attach to N^{-1}s, then no word can have two semantic case-suffixes. Therefore, an SCN secondary predicate cannot be controlled by an argument with semantic case, because the secondary predicate cannot be marked with its controller's case.

What shape could this morphological restriction take? At worst, the lexical entry for each semantic case-suffix would have to list all the case-suffixes it *can* attach to. However, it may be possible to simplify this restriction in terms of the *type* of the category to which suffixes attach, given the following assumptions. First, a case-suffix attaches to a root of type *n* to form a stem of type *n + 1*. In particular, a case-suffix attaches to an N^{-1} to form an N, (as I have been tacitly assuming in the morphological structures given). On this assumption, both grammatical case-suffixes, such as the DATIVE *ku*, and semantic

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33. If *parraja-rla* has ERGATIVE case-marking, the sentence has the outlandish interpretation that the woman is in the coolamon.

case-suffixes, such as the LOCATIVE *rla*, will be able to attach to N^{-1}s to form Ns.

Second, grammatical case-suffixes have the further property that they can attach to N^{-1} or Ns, that is, they are not restricted as to the *type* of what they can attach to. Thus, while semantic case-suffixes can only attach to uninflected roots (which rules out their appearance on nominals with either semantic case or grammatical case), grammatical case-suffixes can appear on nominals already inflected for semantic case.[34]

The entry for the LOCATIVE case-suffix follows:

$$]_{N^{-1}}\ rla\ ]_N$$

This is read:

The LOCATIVE suffix attaches to an element with the categorial feature N and the type -1.

The entry for the grammatical case-suffix DATIVE on the other hand, will specify the category, namely [+ N], but not the *type*. DATIVE can attach to an N or an N^{-1}.

$$]_{[+N]}\quad ku\ ]_N$$

It may be a general property of Warlpiri morphology that certain affixes can attach to N as well as N^{-1}, since, as was shown in 3.5, the INCH and CAUS can attach to uninflected nominals or to case-marked nominals. Presumably these derivational suffixes, like the grammatical case suffixes, have the property that they attach to elements with the categorial feature [+ N], but with no specification of the type of the category. This property could well be be parametric: languages will vary as to whether suffixes must attach to elements of a lower type. This parameter will distinguish languages such as Warlpiri and Ngarluma, which allow double case-marking in Warlpiri, from languages such as Finnish and Russian, which do not.

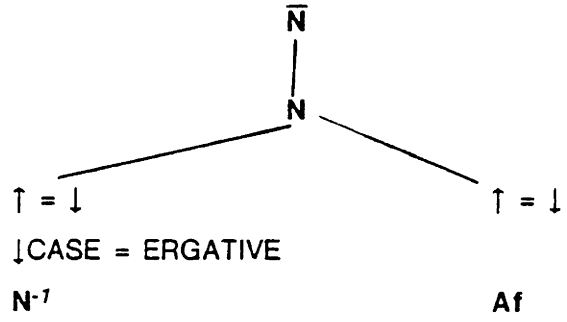
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34. It can legitimately be objected that allowing nominals to specify the *type* of the element to which they attach is a back-door way of introducing boundary information into Lexical Morphology. However, Kiparsky (to appear) makes use of a distinction between *root* categories and *lexical* categories for the application of phonological rules which may cover the same ground as the distinction I am proposing here.

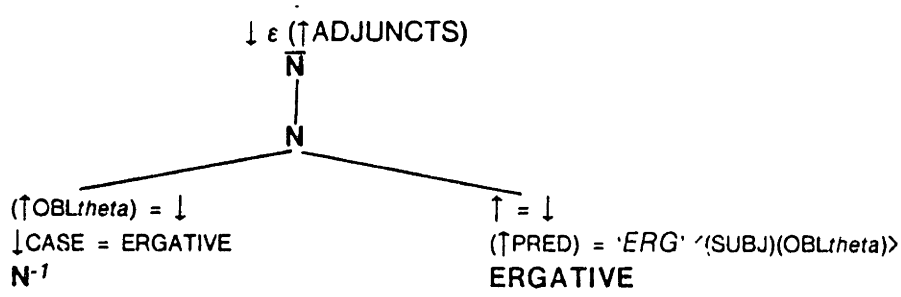
I will now turn to the question of whether grammatical case-suffixes can attach to grammatical case-suffixes. The evidence is divided. The behaviour of the ERGATIVE, and the purposive use of the DATIVE suggests that grammatical case-suffixes cannot attach to other grammatical case-suffixes, while the behaviour of the temporal use of the DATIVE suffix suggests that grammatical case-suffixes can attach to other suffixes. Let us consider the ERGATIVE first.

3.5.2.1 ERGATIVE

The normal morphological assignment of functions to a nominal with ERGATIVE case is as follows:



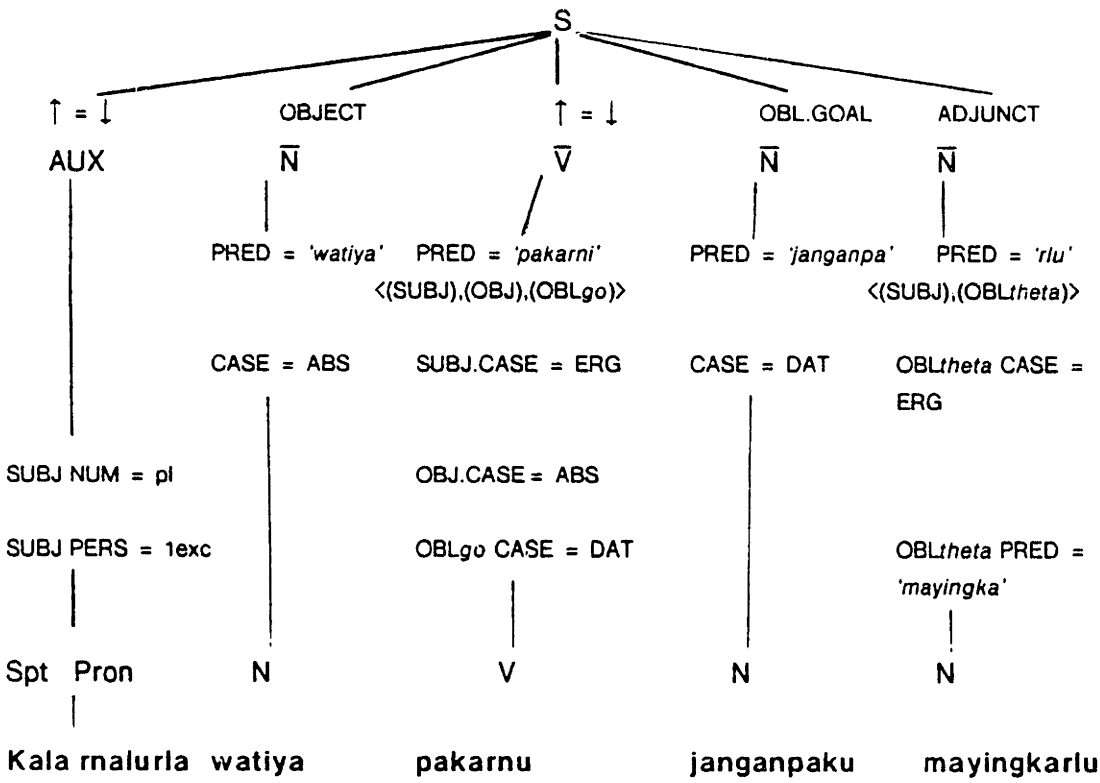
In the *ATP* use of an ERGATIVE, the nominal has the following assignment of functions.



An example was given in 3.2.2 which I repeat for convenience.

(84) Kala-rnalu-rla watiya paka-rnu janganpa-ku *mayingka-rlu.*
USIT-1plex-DAT tree-ABS hit-PAST possum-DAT axe-ERG
We used to chop trees with an axe for possums. [pakarni]

A simplified c-structure for (84) follows, omitting AUX information about overt arguments.



Nash (1980) observes that the *Instrumental* use of the ERGATIVE is only possible in a transitive sentence, when the SUBJECT is ERGATIVE, as in (84). He proposes to explain the distribution by assuming that the *Instrumental* use is an attribute predicated of the SUBJECT, which must agree in case with what it is predicated of. It is a fact about the ERGATIVE case-suffix that no other case-suffixes can follow it. Therefore, the *instrumental* attribute can only be controlled by an ERGATIVE argument, and so can only appear in a clause with an ERGATIVE SUBJECT. This insight can be captured by assuming that the *instrumental* is an ADJUNCT, because of the Adjunct Agreement

Convention.[35]

Of relevance to this discussion is the fact that DATIVE-marked nominals can act as the SUBJECTs of non-finite clauses with the OBLCOMP suffix *rlarni*, as I illustrate in Chapter 6. A speaker with very strong intuitions about the case of SUBJECT-controlled ADJUNCTs in non-finite clauses produced the following judgments (recorded by David Nash).

(85) *Ngarrka-ngku* *nya-ngu* *kurdu,* *karnta-ku*
man-ERG see-PAST child-ABS woman-DAT
i. **watiya-ku* *wirriya* *paka-rninja-rlarni*
stick-DAT boy-ABS hit-INF-OBLCOMP
ii. **watiya-rlu*
stick-ERG
iii. *watiya-kurlu*
stick-PROP
iv. *watiya-kurlu-ku*
stick-PROP-DAT
v. **watiya-kurlu-rlu*
stick-PROP-ERG
The man saw the child while the woman was hitting the boy with a stick.

i. shows that the DATIVE on its own cannot convey the meaning of an instrumental predicate. ii. shows that the ERGATIVE cannot be used in such a clause. As iii. and iv. show, the way to express an instrument in such clauses is to use the PROP suffix. v. shows that an argument modifying the SUBJECT in a clause with a DATIVE-marked SUBJECT cannot have ERGATIVE case. (There is some fluctuation over this). The

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35. However, Mary Laughren informs me that the Instrumental use of the ERGATIVE is restricted to certain classes of verbs; notably, but not exclusively, the verbs of contact. By hypothesis, verbs cannot place restrictions on ADJUNCTS. It may be necessary to assume that, in certain classes of verbs, a lexical rule introduces the Instrumental as an XCOMP which is obligatorily predicated of the SUBJECT. The presence of the ERGATIVE case perhaps could be made to follow from this obligatory predication.

speaker remarked that older speakers would prefer iv.[36] He himself preferred iii.

Under the analysis of case I have given so far, Nash's generalization is not captured, because, as can be seen by inspecting the c-structure tree, the equation ↓CASE = ERGATIVE belongs to the $OBLIQUE_{theta}$, not to the ADJUNCT as a whole. I propose to express Nash's generalization by assuming that, unlike semantic case-suffixes, the ERGATIVE case-suffix always percolates its case-feature to the whole nominal. That is, the ERGATIVE case-suffix not only causes the equation ↓CASE = ERGATIVE to attach to the nominal; it itself has the equation ↓CASE = ERGATIVE, whether it has the *AGR* use or the *ATP* use as an instrumental. Therefore the ERGATIVE case will be visible, and will block an ERGATIVE instrumental from being predicated of an argument with any other case. Adopting this approach suggests that other grammatical case-suffixes will have the same property. For independent reasons, ABSOLUTIVE, I claim, cannot have other case-suffixes attached. The evidence for the other grammatical case-suffix, DATIVE, is mixed, as I show below.

3.5.2.2 **DATIVE**

As I mentioned in 2.3.2, DATIVEs used as argument-taking predicates of ADJUNCTs fall into two main classes: purposives and frequency adverbs. They differ with respect to case-marking. The purposive DATIVEs never receive additional case-marking, even if they are controlled by an ERGATIVE, as (86) shows, while the frequency adverbs, like other time adverbials, do receive additional case-marking, as (87) and (88) show.

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36. iv. is predicted by the account of case-marking I have given, which requires ADJUNCTs to agree in case with the argument they attribute a property to. iii. is less explicable, because the rule of default case assignment will assign it ABSOLUTIVE, which conflicts with the DATIVE of the SUBJECT. (See 3.5.2.3.).

(86) Wati-ngki kurlarda pikirri-rla yirra-rnu, *marlu*
man-ERG spear-ABS spearthrower-LOC put-PAST kangaroo-ABS
panti-rninja-ku.
spear-INF-DAT
The man put the spear on the spearthrower, to spear the kangaroo. [Survey]

(87) Luwa-rnu -rla-jinta *marnkurrpa-ku-rlu* kuyu-ku
shoot-PAST -CON-DAT several-DAT-ERG meat-DAT
He shot at the animal several times [marnkurrpa-ku]

(88) Yangka purlka ngaju-piya-rlu kala para-ja - *wirrkardu-ku*
the old.man I-LIKE-ERG USIT follow-PAST few-DAT
ngurra-patu-ku-rlu.
camp-PL-DAT-ERG
Tnat old man like me followed it -- for several days. [parami]

(This last example is unusual in that the ERGATIVE is only marked on the nominal *ngurra-patu-ku-rlu*, contrary to normal practice with double case-marked nominals.) So, the purposive use behaves like ERGATIVEs, while the frequency use behaves like a semantic case-suffix.

I propose that the purposive use, which is very common, be treated as a genuine use of the DATIVE as an argument-taking predicate, and that it, like the ERGATIVE, has the equation ↑CASE = DATIVE attached, so that no case-suffix can attach to it. In contrast, I propose that the frequency time adverbial be treated as a derivational case-suffix, as a very restricted use of the DATIVE which does not have the equation (↑CASE) = DATIVE attached. Unlike the regular DATIVE, the time DATIVE creates an N^{-1} not an N, I assert this, because *derivational* case-suffixes can attach to the frequency DATIVE, as (89) shows. I assume that derivational case-suffixes, like semantic case-suffixes, can only attach to N^{-1}s.

(89) Purra-nja-rla kala rdipi-ja *wirrkardu-ku-warnu* *ngurra-ku-warnu.*
cook-INF-SEQ USIT go-PAST several-DAT-ASSOC camp-DAT-ASSOC
After cooking it, he would arrive after several days. [rdipimi]

3.5.2.3 ABSOLUTIVE

ABSOLUTIVE case, unlike the other grammatical case-suffixes, is never used as an argument-taking predicate. Unmarked nominals can be used as ADJUNCTS, e.g. *nyurruwiyi* 'in the old days'. I claim that they have ABSOLUTIVE case, but that the functional head (i.e. the element which provides the PRED feature) is the nominal, and not the ABSOLUTIVE case. Intuitively, the inability of ABSOLUTIVE case to act as an *ATP*, that is, as though it had a meaning, seems quite understandable. ABSOLUTIVE case is not a lexical item in the sense that DATIVE or ERGATIVE are; it is just the name given to the *absence* of a case-suffix on nominals bearing certain grammatical functions.

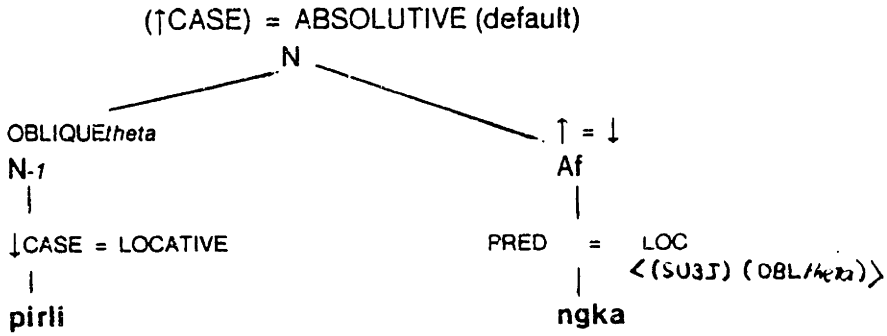
This restriction can be derived if it is assumed that ABSOLUTIVE is a *default* assignment of case. Suppose that ABSOLUTIVE is assigned to N in the syntax. Any N without a CASE feature will be assigned the equation (↑CASE) = ABSOLUTIVE. But this, of course, is assignment of a *functional feature*. There is no meaningful argument-taking predicate (represented by a PRED feature) associated with such a feature. Nor can a rule of syntax insert such a PRED feature, if the suggestion made by Bresnan and Halvorsen, that PRED features must be introduced by lexical items, is taken up. But, if there is no argument-taking predicate associated with the case-feature, then the sentence (90) cannot be interpreted with an Instrumental reading of *watiya*, in which the ABSOLUTIVE is used as a case-suffix and provides the functional head.

(90) *Watiya ka purlka wapa-mi.
stick-ABS PRES old.man-ABS walk-NPST
The old man walks with a stick.

Watiya can only be predicated of *purlka*, if *watiya* itself is the argument-taking predicate: *The old man, being a stick, walks.* Viewing ABSOLUTIVE in this way as simply an *elsewhere* case-feature captures the sense that treating ABSOLUTIVE on a par with other case-suffixes is an unwarranted reification.

Assigning ABSOLUTIVE as a default case in syntax to N means that case-marked nominals such as *pirli-ngka* 'rock-LOC', in which the case-suffix is used as an Argument-Taking Predicate will *also* receive ABSOLUTIVE case (because the LOCATIVE case equation is attached to the $OBLIQUE_{theta}$, not to the ADJUNCT).

(91)



This allows a LOCATIVE nominal, say, to be predicated of other nominals with ABSOLUTIVE case. Default assignment will not apply to ERGATIVE or purposive DATIVEs, because they have their own visible case-suffixes provided by the equations (↑CASE) = ERGATIVE, and (↑CASE) = DATIVE.

Allowing ABSOLUTIVE to be assigned in the syntax to N obviates the difficulty about assigning ABSOLUTIVE case in the morphology, namely that some uninflected nominals can emerge from the lexicon and form part of an $\bar{N}$ with some other case. If default assignment were done in the morphology, it would be rather hard to allow some N^{-1}s to escape it.

Occasionally situations may arise in which all the daughters of $\bar{N}$ have case, $\bar{N}$ itself has no case. I will assume that default assignment of ABSOLUTIVE case applies both to $\bar{N}$ and to N. I will show in Chapter 4, that assigning ABSOLUTIVE case as a default case to both N and $\bar{N}$ obviates the need for case concord rules, because *Consistency* will rule out most of the offending structures.

3.5.3 Summary of case representation

In this section I have proposed a representation for case-suffixes. I have shown that the *ATP* and the *AGR* use of case-suffixes can be distinguished by whether or not the case-suffix has a syntactically relevant meaning (represented by a PRED feature). In this way, the difference between the two uses of case-suffixes parallels the distinction made in English by Bresnan (1980b) for the uses of prepositions in English. The distinction between the syntactically meaningful use of case, and the agreement marker use of case is also analogous to the distinction made by Grimshaw (1980), and Montalbetti (1981) between pronominal clitics which have PREDs (and therefore do not permit clitic-doubling), and pronominal clitics which do not have PREDs (and therefore do allow clitic-doubling). (I owe this observation to Joan Bresnan).

I have argued for the assignment of functions in the morphology in order to prevent a violation of the *Lexical Integrity Hypothesis*. Only this way can we express the fact that a case-marked nominal may be functionally complex, containing both an argument-taking predicate and an OBLIQUE_{theta} of that predicate. I have shown that assigning functions in the morphology leads to a simple account of double case-marking. There are, however, constraints on which case-suffixes can undergo double case-marking that are morphological in nature, rather than derivable from functional assignment. On the basis of these constraints I have argued for two morphological distinctions between grammatical and semantic case-suffixes: first, whether or not the suffix can attach to a category of type N, and second, whether or not the suffix obligatorily percolates its own case-feature up. In the final section I will discuss the status of derivational case-suffixes, and their position with respect to these morphological distinctions.

3.6 Derivational Case

The derivational cases are an interesting topic, in part because they have no counterparts in familiar European languages, which make a much sharper division between inflectional and derivational morphology. I repeat the list of major derivational cases given in 3.1.

Derivational

ASSOC	associative, perfective	-warnu
DENIZ	denizen of	-ngawurrpa
INHAB	inhabitant of	-wardingki
LIKE	as, like, simile-former	-piya
PERL	perlative: 'along'	-wana
POSS	possessive	-kurlangu
PRIV	privative, negative	-wangu
PROP	proprietive, having	-kurlu, -parnta
SOURCE	elative of source	-jangka

This is a rather heterogenous group, and the criteria for classifying suffixes as *derivational cases* rather than as *semantic cases* on the one hand, and *derivational clitics*[37] on the other, are vague. I have taken the properties listed below to be the defining properties of derivational case-suffixes. (I will ignore the default assignment of ABSOLUTIVE case in most of the examples.)

1. The ability to act as a seemingly independent secondary predicate. In (92) the POSS suffix *kurlangu* creates an ADJUNCT which gives a *cause*, while the SOURCE suffix *jangka* in (93) indicates the material from which something is made.

(92) Yapa ka-lu mirrmirr-karri *pirriya-kurlangu*.
Person-ABS PRES-3pl shiver-stand-NPST cold-POSS
People shiver from the cold. [mirrmirr]

(93) *Purdurru-jangka* + jala majardi ka-lu ngurrju-ma-ni.
hairstring-SOURCE + CLEARLY pubic.tassle-ABS PRES-3pl make-NPST
They make pubic tassles from hairstring. [majardi]

---

37. *Derivational clitics* include suffixes such as *rlangu* E.G., which can occur on nominals and verbs, like other clitics, but which either precede or follow case-suffixes.

(94) and (95) show that a DCN can control another DCN.

(94) Kala-lu *rdaka-kurlu + ju* *miyalu-wana-kurlu* purla-ja.
USIT-3pl hand-PROP + EUPH stomach-PERL-PROP shout-PAST
They would cry out with their hands across their stomachs. [Nyurnu-kurlangu]

(95) Nyampu ka-rna yirra-rni manngi-nya-nja-karra-rlu
this PRES-1sg put-NPST think-see-INF-SSCOMP-ERG
Jilpirli-wana-kurlu, *Jakamarra-kurlu.*
Jipirli-PERL-PROP Jakamarra-PROP
Thinking about him, I am telling this (story) about the one (buried) at Jilpirli, about Jakamarra. [MLJ]

Clearly, in (94) and (95), *Jilpirli-wana* and *miyalu-wana*, whether or not they are in the same $\overline{N}$ as the other *kurlu* nominal (since neither appears before the AUX, there is no evidence for their constituency), must be interpreted as ADJUNCTs of some nominal with the case-suffix *kurlu*.[38]

2. The ability to be followed by a semantic-case suffix, a complementizer suffix, or another derivational case-suffix. In (96), the SOURCE suffix *jangka* is attached to the PRIV suffix *wangu*. In (97), the semantic case-suffix ALLATIVE is attached to the SOURCE suffix *jangka*. In (98), the PROP suffix *kurlu* attaches to the POSS suffix *kurlangu* (which is in turn attached to a possessive kinship nominal). In (99) the LOCATIVE suffix *rla* attaches to the POSS suffix *kurlangu*.

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38. The semantic case-suffix *rla* has also occasionally been found in such structures, as i. illustrates.

i. *'Yurnungka + ju'* *ka-rnalu-jana* *ngarri-rni* *karnta + nya*
pregnant + EUPH PRES-1plex-3pl call-NPST woman-ABS + EMPH
yi-ka-lu wapa-mi *kurdu-kurlu* *miyalu-rla-kurlu.*
REAS-PRES-3pl walk-NPST child-PROP stomach-LOC-PROP
We call 'pregnant' women with babies in their stomachs. [yurnungka]

In this example the LOCATIVE acts as an attribute of a nominal with derivational case. See Chapter 4 for more discussion.

(96) Jurru ka-lu maljarlawurlawu karri *ngapa-wangu-jangka.*
hair-ABS PRES-3pl sticks.out-ABS stand-NPST water-PRIV-SOURCE
Their hair gets stiff and sticks out from lack of water, (from not being washed). [maljarlawurlawu]

(97) Ngari ka kutu-yuka-mi ngulya-pardu *wardapi-jangka-kurra.*
just PRES anyway-enter-NPST burrow-DIM goanna-SOURCE-ALL
It simply enters any old goanna's burrow. [marakata]

(98) ngaju-ku-pirdangka-*kurlangu-kurlu* *kurdu-kurlu*
I-DAT-same.gen.kinsman-POSS-PROP child-PROP
having my sister's child. [Nash: 1980: 180]

(99) Panu ka-lu wangka *ngajukupalangu-kurlangu-rla.*
mob-ABS PRES-3pl talk-NPST I-DAT-kinterm-POSS-LOC
There's a big group of them talking at my father's place. [yani]

This property distinguishes *derivational cases* from *semantic cases.* For instance, whether or not the PERLATIVE should be included as a derivational suffix is doubtful, because it is primarily used as an ADJUNCT, as in (100).

(100) *Manja-wana* ka nyina jurlpu manirtirrpirtirrpi
mulga-PERL PRES sit-NPST bird-ABS bird sp.-ABS
wita-nyayirni.
small-VERY-ABS
The "manirtirrpirtirrpi" is a very small bird found in the mulga. [manirtirrpirtirrpi]

But, by this suffixation test, *wana* must be a derivational case-suffix, as it can be followed by a derivational case-suffix, or a complementizer.

(101) Kurdu yaliji ka karri-mi miirnta-kurlu
child-ABS that-REM PRES stand-NPST mucus-PROP
mulyu-wana-kurlu.
nose-PERL-PROP
That child is standing there with mucus coming through his nostrils. [miirnta]

(102) Wardapi ka nga-rni lingka-ngku – – *ngulya-wana-kurra.*
goanna-ABS PRES eat-NPST snake sp.-ERG burrow-PERL-OCOMP
The King Brown eats goannas in their burrows. [lingka]

3. Case-concord. This property distinguishes derivational cases from derivational affixes in languages such as Icelandic and Russian. In these languages nominals agree in case, but not with respect to derivational suffixes. (103) illustrates concord with *kurlu*. It is clear that *panu* 'many' is interpreted as an attribute of *jilkarla* 'prickle, spine'. (104) is a more complex example involving a number of PROP-marked nominals.

(103) Yinarlingi ka karri *jilkarla-kurlu* *panu-kurlu*.
echidna-ABS PRES stand-NPST prickle-PROP many-PROP
The echidna has many spines. [jilkarla]

(104) Manja ngulaju watiya *ngurlu-kurlu* manu *miyi-kirli*
mulga-ABS that-ABS tree-ABS seed-PROP and fruit-PROP
yirdi-kirli *larrunka-kurlu*, manu *pama-kurlu + yijala* *kurnpu-kurlu*.
name-PROP larrunka-PROP, and sweet-PROP + ALSO sap-PROP
The mulga is a tree with seeds and fruit called 'larrunka' and edible sap too. [manja]

A concomitant ability is the ability to form a single constituent with an N^{-1}. In 2.5.1 I showed that $\overline{N}$ could consist of uninflected nominals (N^{-1}s) followed by case-marked nominals. Such an $\overline{N}$ can have a derivational case-suffix as its case-marker. (105) shows a PROP-marked nominal followed by an unmarked nominal followed by a PROP-marked nominal. The PROP suffix is acting as an Argument-Taking Predicate, and the unmarked nominal is clearly an attribute of the $OBLIQUE_{theta}$ of the PROP suffix. (Such constructions will be discussed at greater length in Chapter 4).

(105) Watiya *miyi-kirli* *wita-wita* *yalyu-yalyu-kurlu*.
tree-ABS fruit-PROP small-small blood-blood-PROP
The tree has small edible red berries. [marntayiki]

This test also suggests that *piya* is a derivational case. As a clitic meaning *like*, *piya* can occur on any category, as in (106). But, because of examples such as (107) and (108), I assume it has a double subcategorization, as a clitic and as a derivational case.

(106) Kari *ya-nu-piya.*
ASSERT go-PAST-LIKE
Maybe she went. [H60Dial: 7.8]

(107) --yangka kuja ya-ninja-ya-nu maljarlawurlawu - - *kuyu*
the-ABS REL go-INF-go-PAST outstretched-ABS meat
pulalypa-piya.
lizard sp.-LIKE-ABS
(..) like when he (dingo) went along with them (claws) outstretched like a perentie. [maljarlawurlawu]

(108) Pinti ka nyina *ngapurlu* *wiri-jarra-piya.*
skin-ABS PRES sit-NPST breast big-DU-LIKE-ABS
The husk is like two big breasts. [mungilypa]

By this test, the PROP suffix *parnta* is in fact a derivational case in the Lander and Eastern Warlpiri dialects.[39] In (109) *kulu* and *wiri* form a single constituent marked with *parnta* and the ERGATIVE.

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39. That *parnta* is also a derivational suffix is shown by the following lexicalized examples taken from the *Warlpiri Dictionary*.

jinti-parnta	vulva-PROP:	fungi sp.
jilka-parnta, jiri-parnta	prickle-PROP:	spiny anteater, echidna
majardi-parnta	pubic.tassle-PROP:	person wearing a pubic tassle.
para-parnta	subincision-PROP:	subincised boy
parnka-parnta	(??run-PROP):	murderer
wanya-parnta	down-PROP:	emu
karlangu-jarra-parnta	diggingstick-DUAL-PROP:	scorpion

I do not know for certain whether all of these are also to be found in Lander and Eastern Warlpiri. It appears that *parnta* corresponds more to a derivational suffix in Southern Warlpiri, and *kurlu* takes over its role as a PROPRIETIVE derivational case.

An interesting lexicalized use of the suffix *parnta* occurs when the PROP is suffixed to a body-part. Instead of meaning that someone <u>has</u> a particular bodypart, it receives the interpretation that the bodypart is <u>defective</u> in some way.

lirra-parnta	mouth-PROP:	sore mouth
paniya-parnta	eye-PROP:	blind
milpa-parnta	eye-PROP:	impaired eye(-sight), bad eye, blind,
mirdi-parnta	knee-PROP:	person with injured knee

(109) Kajika-ngalpa panti-rni lalji-lalji-rli *kulu* *wiri-parnta-rlu*.
POT-1plin spear-NPST stirred.up-ERG anger big-PROP-ERG
He is liable to spear us in anger as he is very stirred up. [lalji-lalji]

4. Like derivational suffixes, and unlike semantic case-suffixes, the derivational case-suffixes can appear as attributes of a head in a single nominal constituent. (This failure of SCNs to appear as ADJUNCTs within an $\overline{N}$ will be discussed more in Chapter 4). Warlpiri does not in general have constituents corresponding to the English *The man from Yuendumu*, where the English *from* translates a semantic case-suffix in Warlpiri: **ngarrka Yurntumu-ngurlu*. However, if the argument-taking predicate of the ADJUNCT is a derivational case-suffix and not a semantic case-suffix, then it can occur within an $\overline{N}$ as an ADJUNCT, as the examples below illustrate. In (110) a nominal with the SOURCE derivational case (which overlaps in meaning with the ELATIVE), appears as part of a single constituent with an ERGATIVE nominal.

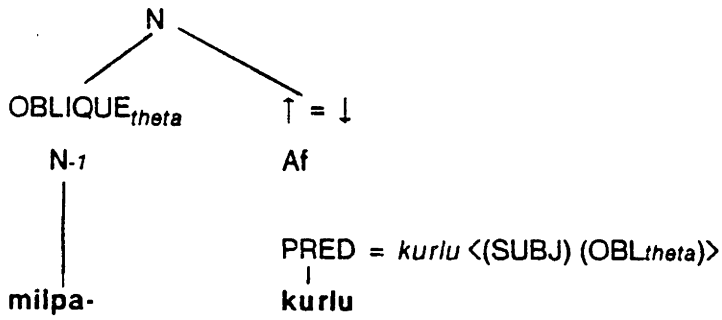
(110) *Kurlarni-jangka-rlu* *payi-ngki* ka-ngalpa mirrmirrmarli-yi-nyi.
south-SOURCE-ERG wind-ERG PRES-1plin shiver-give-NPST
The wind from the south makes us shiver. [mirrmirrmarli]

In (111), the N^{-1} *malpa* and its attribute *milpa-kurlu* form a single pre-AUX nominal constituent. Similarly, in (112), *yapa-kurlangu* and *jurnarrpa-rlangu-ku* form a single constituent, shown by the DATIVE case on *jurnarrpa-rlangu-ku* which has scope over *yapa-kurlangu*.

(111) *Malpa* *milpa-kurlu* ka-lu waraly-waraly-karri-mi watiya-rla
Pod-ABS seed-PROP PRES-3pl hang-stand-NPST tree-LOC
pirliyi-rlangu-rla.
acacia-E.G.-LOC
Pods full of seeds hang down all over trees like the *Acacia cuthbertsonii*. [malpa]

(112) *Yapa-kurlangu* *jurnarrpa-rlangu-ku* ka-jana-rla liji-yirra-rni
person-POSS thing-E.G.-DAT PRES-3pl-DAT covet-NPST
nyanungu-rlu milpa-nyangu-rlu.
the-ERG greedy-ERG
That greedy person is always coveting people's things for example. [milpa-nyangu]

Let us now turn to the representation of these properties. The first property, the use of derivational case-suffixes as ADJUNCTs, in which the derivational suffix itself acts as the functional head, will be represented in the same way as the *ATP* use of other case-suffixes is represented, namely by allowing the suffix optionally to introduce a predicate which selects an $OBLIQUE_{theta}$.



Observe that, like other case-marked nominals, a DCN acting as an ADJUNCT agrees in case with its controller. The two sentences in (113) show agreement of a DCN with SOURCE case, first agreeing with an ERGATIVE SUBJECT, then agreeing with the same referent expressed as a DATIVE argument.

(113) Kapi-li marda kuyu ka-nyi-rni. *Wirlinyi-jangka-rlu.*
FUT-3pl PROB meat-ABS carry-NPST + HERE. hunting-SOURCE-ERG.
They probably carry game back here. From hunting.
Nyina-mi yi-rlipa-jana nyampu-rla + juku. *Wirlinyi-jangka-ku.*
sit-NPST REAS-1plin-3pl here-LOC + STILL. hunting-SOURCE-DAT
We sit here for them, (returning) from hunting. [Hale notes (typed): 0315]

The second property, the fact that the derivational case-suffixes can have semantic, grammatical or derivational case-suffixes attached, suggests that they can form an N^{-1} rather than an N. (Recall that I claimed that semantic and grammatical case-suffixes create Ns, not N^{-1}s). However, in order for the derivational case to act as the predicate of a free ADJUNCT, it must also be an N, since the $\overline{N}$ expansion rule does not allow for an $\overline{N}$ to exhaustively dominate an N^{-1}. Therefore the addition of a derivational case-suffix creates either an N or an N^{-1}. In this, derivational case-suffixes contrast with semantic case-suffixes, which can only create Ns. When a derivational case suffix is an N, a

grammatical case suffix can attach to it, (in particular, it can receive default ABSOLUTIVE case). But when it is an N^{-1}, semantic case-suffixes as well as other derivational case-suffixes can attach to it. Further evidence for the ability of derivational cases to be N^{-1}s comes from the fact that they can act as real derivational suffixes in forming nominals which are then used referentially., such as *ngangkayi-kirli/parnta*: healing-powers-PROP 'shaman, doctor'. The represention of derivational case as either N^{-1} or N is essentially the solution presented in Nash (1980: 23).

The third property is the ability of derivational case suffixes to appear on several nominals and to form single constituents in which one nominal acts as an attribute to the $OBLIQUE_{theta}$ of the predicate denoted by the derivational case-suffix. This follows in part from the ability of derivational case-suffixes to act as ADJUNCTs which subcategorize $OBLIQUE_{theta}$s, just as other case suffixes do. The fourth property is the ability of DCNs to co-occur with GCNs in the same constituent. These two properties will be discussed in the light of the proposals for assigning functions to parts of $\overline{N}$ in the next chapter.

4. Discontinuous expressions

4.1 Introduction

Observe that in (1) the attribute *wita-jarra-rlu*, construed with the SUBJECT nominal *kurdu-jarra-rlu*, appears separated from *kurdu-jarra-rlu*. This attribute can be interpreted in at least two ways, which correspond roughly to restrictive and non-restrictive readings.

(1) *Kurdu-jarra-rlu* ka-pala maliki wajili-pi-nyi *wita-jarra-rlu.*
Child-DU-ERG PRES-2du dog-ABS chase-NPST small-DU-ERG
(The) two small children are chasing the dog.
(The) two children are chasing the dog and they are small.

However, the ERGATIVE case-marker on *wita-jarra* ensures that it is construed as an attribute of the ERGATIVE SUBJECT *kurdu-jarra-rlu*, rather than of the ABSOLUTIVE OBJECT *maliki*.

Hale (PWT:1) claims that, in a sentence such as (1), all possible ways of combining SUBJECT Nominal (*kurdu-jarra-rlu*), ADJUNCT of SUBJECT Nominal (*wita-jarra-rlu*), OBJECT Nominal (*maliki*) and Verb (*wajili-pi-nyi*) are acceptable (provided that the AUX is in second position.)

Furthermore, with the exception of the situation in which the two nominals *kurdu-jarra-rlu* and *wita-jarra-rlu* form a single constituent, the ADJUNCT *wita-jarra-rlu* may have either interpretation. The two types of interpretation are called the *merged* and the *unmerged* interpretations in Hale (PWT) and Nash (1980). They are illustrated by the two glosses given to (1). The *merged* interpretation (a.) covers at least restrictive modification, and perhaps some types of non-restrictive modification. The *unmerged* interpretation (b.) covers non-restrictive attribution of properties (e.g. *The philosophical Greeks*), apposition (*My friend, Mr Leakey*), as well as a number of other types (See Chapter 5).

Hale calls the first interpretation *merged* because it appears to be the only interpretation available for nominals forming an $\overline{N}$. For example, in (2) *kurdu* and *wita-jarra-rlu* form a single $\overline{N}$.

(2) *Kurdu wita-jarra-rlu* ka-pala maliki wajili-pi-nyi
Child small-DU-ERG PRES-2du dog-ABS chase-NPST
The two small children are chasing the dog.

It seems that in such a situation, *wita-jarra-rlu* must have the *merged* interpretation.

Similarly, since, by the AUX second constraint, a sequence of nominals with the same case-suffix preceding the AUX must form an $\overline{N}$, the claim is that only the *merged* interpretation will be available for these too.

(3) *Kurdu-jarra-rlu* *wita-jarra-rlu* ka-pala maliki wajili-pi-nyi.
Child-DU-ERG small-DU-ERG PRES-2du dog-ABS chase-NPST
The two small children are chasing the dog.

The intuition is that non-adjacent ADJUNCTs can have the same semantic interpretation as the normal interpretation of ADJUNCTs within an $\overline{N}$, and that ADJUNCTs within an $\overline{N}$ can *only* have that interpretation. [1] In more familiar languages, attributes *normally* have the *merged* interpretation if they occur within the same constituent as the

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1. As Hans Uszkoreit pointed out to me, this makes the prediction that, if Warlpiri has intensional adjectives such as *former* and *alleged*, these should be generable either within the $\overline{N}$ or as separate constituents. Thus Warlpiri would contrast with English, in which such adjectives must appear prenominally:

the alleged counter-examples. **The counter-example is alleged.*
The former Queen. **The Queen is former.*

Further work is needed to discover such adjectives in Warlpiri. Hale suggests that the demonstratives *yangka* and *nyanungu* may be considered intensional adjectives, in which case, since they can appear separated from the nominals they modify, Uszkoreit's prediction may be borne out. However, further investigation of the semantics of *yangka* and *nyanungu* is required before this can be treated as more than speculation. Note that the meanings of certain English intensional adjectives can be expressed in Warlpiri using clitics attached to nominals, or particles, which appear to have to be adjacent to the nominal in order to have scope over it (See Laughren (1982a) for a discussion of such particles.)

element to which they attribute a property (unrestrictive attributes such as *the philosophical Greeks* being assumed exceptional). If modifiers are not in the same constituent as the argument to which they attribute a property, they normally have an *unmerged* interpretation. There is a close association between phrase structure position and type of interpretation. However, Warlpiri shows an *asymmetry* in interpretation, since, although only one interpretation is open to members of a single constituent, non-adjacent ADJUNCTs can receive either the *merged* or the *unmerged* interpretation.

How is the relation of constituent-structure position to interpretation to be expressed in Warlpiri? Suppose that a rule of semantic interpretation, sensitive to constituency, always interprets ADJUNCTs within an $\overline{N}$ as *merged*, and interprets non-adjacent ADJUNCTs as *unmerged* in English, but as either *merged* or *unmerged* in Warlpiri. Such a rule is difficult to express in Lexical Functional grammar, since the input to semantic interpretation is functional structure, not constituent structure, and $\overline{N}$ is a c-structure category not reflected in the functional structure.[2] An alternative way of capturing these intuitions, and one, moreover, adopted by other scholars working on Warlpiri, is to assume that at some level the non-adjacent ADJUNCT and the element it modifies form a constituent. This level will be the level relevant for semantic interpretation, (whether it actually is the level of semantic interpretation, or whether it provides the input to semantic interpretation). Thus, for the purposes of semantic interpretation, both an ADJUNCT within the same constituent as the nominal it modifies, and a non-adjacent ADJUNCT can be treated alike. Essentially, this approach considers *merged* non-adjacent attributes and the elements that they modify to be *discontinuous nominal expressions.*

Scholars differ as to the level at which these expressions form a single constituent. Hale (PWT), and Nash (1980) suggest that the right level is the level of *logical form*, or *semantic interpretation*. They propose two sets of rules, a set of labelling rules which operate at the level of syntax, and provide words with a *categorial signature* (composed of

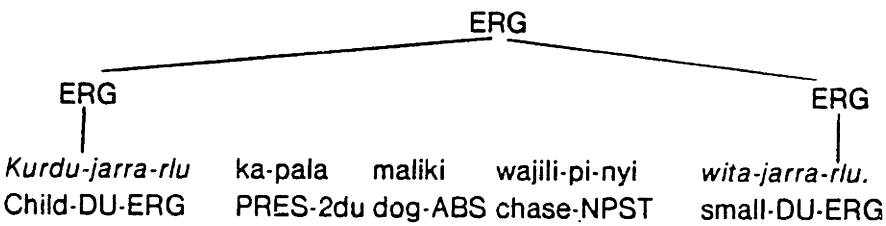
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2. It is possible to encode linear precedence in the f-structure, and so it would probably be possible to express the difference between a ADJUNCT within an $\overline{N}$, and a non-adjacent ADJUNCT. But I doubt that this could lead to an elegant or natural description.

features such as case and number), and a set of rules optionally *merging* non-adjacent nominal constituents with identical categorial signatures at the level of logical form (or semantic interpretation). These rules cover both constituents, and discontinuous expressions. On Hale's and Nash's accounts, *kurdu-jarra-rlu* and *wita-jarra-rlu* are labelled ERGATIVE and DUAL in the syntax, and optionally merge into a single constituent at the level of logical form. Single constituents, it is suggested, receive the *merged* interpretation.

Van Riemsdijk (1981) argues that having two distinct types of syntactic representation ($\bar{X}$ theory on the one hand, and labelling together with a logical form process of merger on the other) complicates universal grammar. He suggests instead the possibility of forming constituents from non-adjacent elements by *projection* onto another tier, along the lines of autosegmental phonology.[3] *Kurdu-jarra-rlu* and *wita-jarra-rlu* both have the features ERGATIVE and DUAL. These features are projected onto another tier, and at this tier the two can form a single constituent.

(4) **Van Riemsdijk's autosegmental model**



Observe that separate tiers will be required for each case-suffix. What prevents the projection of the feature DUAL only, to form a constituent which consists of all the DUAL-marked nominals, regardless of their case-features? This is prevented by the assumption that what is projected is the *categorial signature*, rather than individual features. The categorial signature may consist of several features (case and number). (This restriction contrasts with the use of autosegmental theory in phonology, in which

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3. He suggests that all languages make use of both $\bar{X}$ theory and projection, but have different trade-offs. Warlpiri makes limited use of the resources of $\bar{X}$ theory, but great use of the projection possibilities.

single features may readily project). Presumably logical form has access to constituents formed at all tiers. The interpretation rule must obligatorily assign a merged interpretation to ADJUNCTS within $\overline{N}$. If projection is optional, then the interpretation rule can be written so as to apply obligatorily to ADJUNCTS within any constituent, whether formed by projection or not. ADJUNCTS which are not within the same constituent as the argument they attribute a property to will receive the *unmerged* interpretation.

In LFG, the relevant level for semantic interpretation to operate on is assumed to be *functional structure*. I shall argue that it is possible to derive from the constituent structure, functional structures which represent the distinction between ADJUNCTS which must receive the merged interpretation, and ADJUNCTS which may receive the merged interpretation. Most of the rules in this derivation have already been justified.

At this point, a note of caution is in order. As Hale (PWT) points out, there are gaps in our knowledge of Warlpiri word-order. For instance, we do not have much information about complex crossings of discontinuous nominal expressions. Can one scramble completely freely, getting b. from a. for instance?

(5) In the faded picture, the small man is looking from a dead tree at a fat bullock in the big river.
picture-LOC-(ERG) AUX man-ERG tree-EL faded-LOC-(ERG) big-LOC look dead-EL bullock-ABS small-ERG river-LOC fat-ABS.

And if (5) is unacceptable, is this due to processing difficulties, or is it a real fact about the grammar of Warlpiri? Will it be possible to write rules stating the degree of complexity in discontinuity? Van Riemsdijk, for instance, notes that his account does place a constraint on scrambling, by virtue of the autosegmental thesis. An important tenet of autosegmental theory is that lines associating tiers cannot cross. Applying this to the syntactic projection, this predicts that, if there are several constituents C_1, C_2, C_3, marked with the same case, the parts of C_1, C_2 and C_3 cannot be interspersed. Thus consider the following sentence:

(6)	Maliki-rli	ka	kurdu	kartirdi-rli	yarlki-rni	wita-ngku.
	dog-ERG	PRES	child	tooth-ERG	bite-NPST	small-ERG

Van Riemsdijk claims that it can only mean *The dog bites the child with its small teeth*, and that it cannot mean *The small dog bites the child with its teeth*. However, the status of (6) is not known for certain. Moreover, Van Riemsdijk also notes that if a sentence has two DATIVEs, one being a DATIVE OBJECT, and the other an Adjunct DATIVE, interspersion is known to take place. which is not predicted by his account:

(7)	*Karli-ki*	ka-rna-rla-jinta	*ngajuku-pirdangka-ku*	warri-rni
	boomerang-DAT	PRES-1sg-DAT-DAT	I-KIN-DAT	seek-NPST
	kiriparnta-ku.			
	hoarse/fluted-DAT			

I am looking for a boomerang for my brother who has a sore throat.
(>*kiriparnta* = 'hoarse') *predicted* by Van Riemsdijk.
I am looking for the fluted boomerang for my brother.
(>*kiriparnta* = 'fluted') *not predicted* by Van Riemsdijk.

The account I will present cannot capture the locality effect in (6). I allow complete freedom of interspersion, as do Hale's and Nash's accounts. Our accounts claim then that, if there are constraints on interspersion, these will be attributable to factors external to the grammar. There is some support for this claim of freedom. David Nash informs me that his preliminary work suggests that double and triple crossings are quite possible, and, moreover, that one speaker reacted to questioning about sentences involving such crossings, as though they were quite obviously acceptable.

I will show that the representation of *discontinuous expressions* follows from the interaction of three rules of Warlpiri grammar, together with the conventions on the well-formedness of f-structures discussed in Chapter 2. The first two rules have already been introduced, namely the general rule assigning grammatical functions freely at the level of S, and the general rule allowing argument-taking predicates to introduce null pronominals to represent selected grammatical functions. The third is a rule assigning the equation $\uparrow = \downarrow$ freely at the level of $\bar{N}$. The ADJUNCT Agreement Convention, introduced in the last chapter, together with the general conventions on the well-formedness of f-structures, rule out most incorrect assignments created by the free

assignment of functions.[4] I will also address the question of why other non-configurational languages, such as Malayalam, do not have discontinuous nominal expressions. I attribute the difference to parametric variation with respect to the annotation of c-structures with functional equations. In languages such as Warlpiri, a node annotated with a function G may dominate exhaustively a node which is labelled with information about some other function. That is, a node labelled with the function G does not have to dominate a node labelled with G's PRED feature. In languages such as Malayalam, a node labelled with a function G must dominate a node labelled with G's PRED feature, i.e. must have a *functional head*.

The chapter is organized as follows. First, I discuss the assignments of functions within $\overline{N}$ to nominals with Argument-Taking Predicate and Agreement case-suffixes. Then, I show how to represent discontinuous expressions sharing an Agreement case-suffix. Then I show how to represent discontinuous expressions sharing an *ATP* case-suffix.

4.2 ADJUNCTS within $\overline{N}$

I will first look at attributes within $\overline{N}$ which have *AGR* case, and then look at attributes with *ATP* case.

4.2.1 ADJUNCTS within *AGR* nominals

An attribute within an $\overline{N}$ with *AGR* case can be an N or an N^{-1}. In both instances it can act semantically as an attribute of the head. I assume it has the syntactic function ADJUNCT. How does it acquire this function? Syntactic assignment of functions to the N^{-1} and N within $\overline{N}$ could be done by annotations on the phrase structure rule for $\overline{N}$ given in 2.5.1.

$\overline{N} \quad \rightarrow \quad N^{-1}\bullet \qquad\qquad N\bullet \qquad\qquad N$

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4. The solution for discontinuous expressions described here derives from the one presented in Bresnan (1982a).

A preliminary rule for the syntactic assignment of functions within $\overline{N}$ (which will be revised in the discussion of the *ATP* use of case-suffixes) follows:

(8) **Preliminary rule for assigning functions within $\overline{N}$**

Assign the function ADJUNCT and the unmarked equation $\uparrow = \downarrow$ *freely to daughters of* $\overline{N}$.

This rule allows any N or N^{-1} in $\overline{N}$ to be an ADJUNCT.

In the structure *kurdu wita-ngku*, ('child small-ERG'), *kurdu*, which is an N^{-1}, can act as the functional head, and *wita-ngku*, which is an N, can act as an ADJUNCT. Equivalently, in the structure *wita kurdu-ngku*, ('small child-ERG') the N^{-1} *wita* can be an ADJUNCT, and the N *kurdu-ngku* can be the functional head. Observe that *Consistency* will block $\uparrow = \downarrow$ from being assigned to more than one nominal, within $\overline{N}$, whereas there is no restriction on the number of ADJUNCTs.

This assignment of functional equations does *not* express the fact that Warlpiri prefers heads to precede modifiers in $\overline{N}$, a preference observed in Hale (PWT). It seems clear for instance, that within an $\overline{N}$, the preferred place for the determiner and ADJUNCT is after the noun, while possessives may appear before or after the nominal.[5] The preference is so strong that in the *Survey* a speaker considered violations to be ill-formed in pre-AUX position:

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5. Interestingly, the preference for head-first is also seen in certain types of noun-noun compounds, where the second noun is interpreted as an attribute of the first noun.

milpa-puunpa:	(lit. eye-reddish)	spectacled hare-wallaby
munga-wiri:	(lit. night-big)	from sunset to sunrise
mulyu-rlinji:	(lit. snout-dry)	perentie lizard
mulyu-nyarnarrku:	(lit. nose-upturned)	of person with ski-jump nose.
mulyu-maru:	(lit. nose-black)	person with very dark black skin.

This contrasts with compounds involving agentive deverbal nominals, which are head-final:

marna-nga-rnu grass-eat-AGENT grass-eater.

See Nash, 1980: 37 for a sketch of compounding possibilities in Warlpiri.

(9) *Yalumpu jarntu wiri-ngki +ji yarlku-rnu.
that.near dog big-ERG -1sg bite-PAST
That dog bit me.

This preference could be encoded in the phrase structure rule, either in terms of categories, or in terms of functional feature annotations. Let us consider categorial encoding first. There is no real evidence for a syntactic category 'attribute' or 'determiner', or 'possessive' distinct from nominals in Warlpiri. Determiners and possessives can all occur in isolation, having the functions of full nominals. Therefore it would be unmotivated to encode this preference in terms of an expansion of $\overline{N}$ into *categories* DET, POSS, ADJ etc. An alternative to categorial encoding is *functional equation* encoding. The $\overline{N}$ expansion could contain initially an optional N with the features [+ SPEC], [+/- NEAR] etc. However, I suspect that the resulting phrase structure would have to be very complicated in order to account for all the different combinations of determiner, possessive, attribute and head. I have chosen, therefore, to accept Hale's statement that the order within $\overline{N}$ is merely a *preference* which need not be encoded in the phrase structure.[6] This choice has implications for the internal structure of the $\overline{N}$, but, as far as I can tell, the account of discontinuous constituents which I give is not affected by whether one stipulates that, if there are both a head and a [+ SPEC] element, the latter follows the former, or whether one allows some principle of semantic or pragmatic interpretation to represent this preference.

I will now turn to the representation of ADJUNCTs within $\overline{N}$. Consider the following example:

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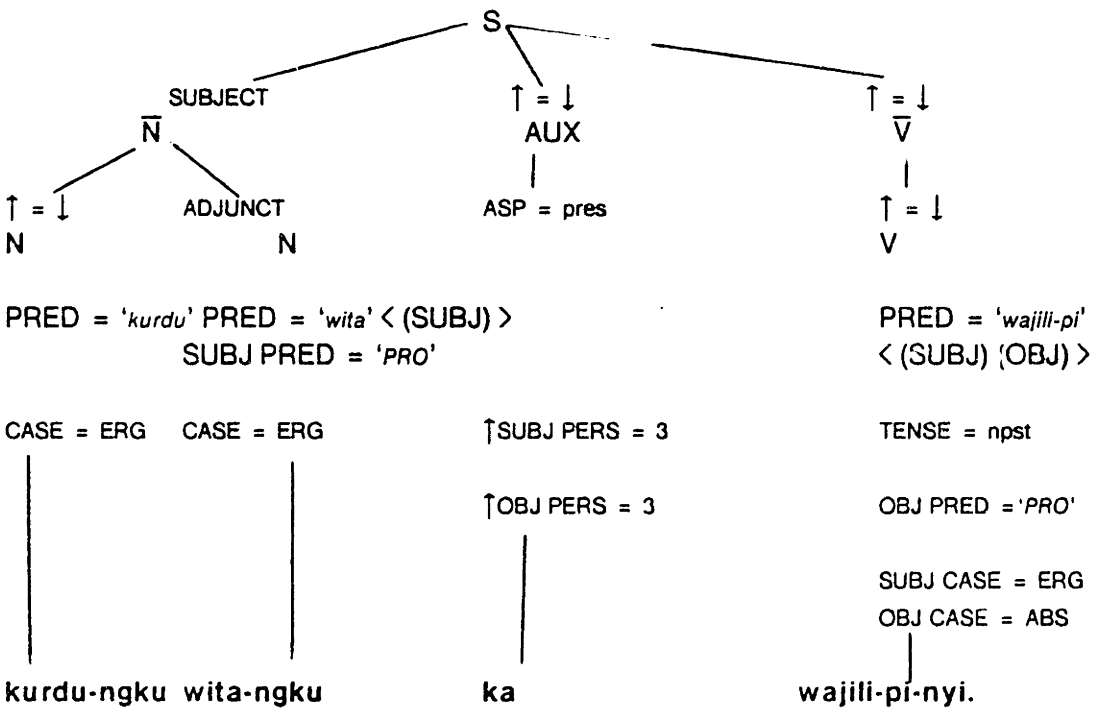
6. It is possible that semantic scope enters into the order of the elements of a noun-phrase, as has been demonstrated for Japanese (Whitman (1981)), and for Chinese (Huang (1982), Simpson (1981)).

(10) *Kurdu-ngku wita-ngku* ka wajili-pi-nyi.
child-ERG small-ERG PRES chase-NPST.
a. The small child is chasing it.
b. The childish small thing is chasing it.

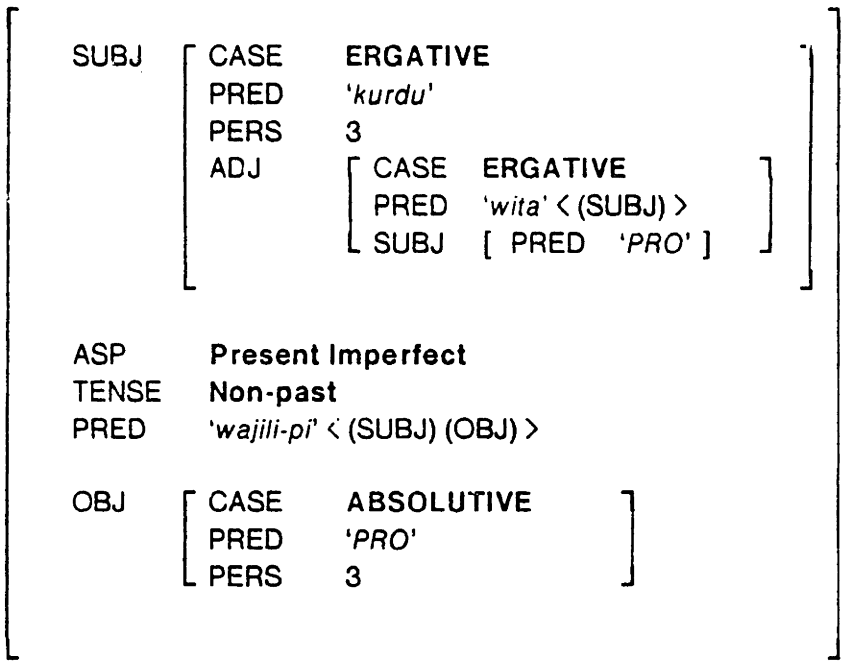
The nominal *kurdu-ngku* can be assigned the equation (↑SUBJ) = ↓, in which case the sentence will have the a. interpretation. Or it can be assigned the equation ↓ ∈ (↑ADJUNCTS), in which case, if the nominal *wita-ngku* is assigned the equation (↑SUBJ) = ↓, the sentence will have the b. interpretation. On either interpretation, the case-suffix is no more than an agreement-marker. The ADJUNCT agreement convention ensures that they cannot disagree in case.

On the a. interpretation, (10) will have the annotated c-structure tree given in (11), and the f-structure given in (12).

(11)



(12)



In this section I have discussed a nominal with an *AGR* suffix (ERGATIVE), which acts as an ADJUNCT predicated of an argument. The *ATP* of the ADJUNCT is provided by the nominal. The nominal selects a SUBJECT and introduces a null pronominal to represent that SUBJECT. The null pronominal is anaphorically controlled by some argument of the matrix.

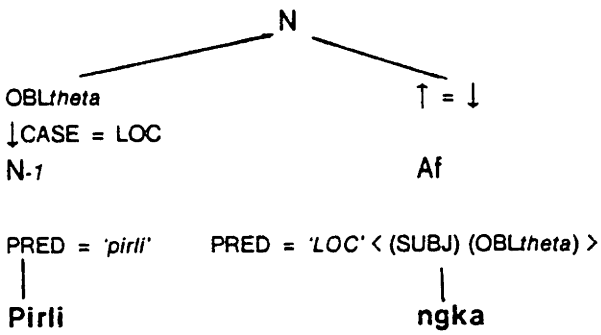
4.2.2 ADJUNCTs within *ATP* nominals

Suppose that an $\overline{N}$ acts as an ADJUNCT, and that a case-suffix provides the argument-taking predicate for the ADJUNCT. Now suppose that the $\overline{N}$ consists of several case-marked nominals: *pirli-ngka wita-ngka* 'rock-LOC small-LOC'. Only one of the case-suffixes can provide the argument-taking predicate for the ADJUNCT. Otherwise *consistency* would be violated. The other case-suffixes must act just as *AGR* suffixes.

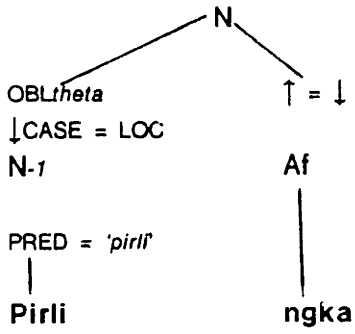
A nominal within an $\overline{N}$ bearing an *ATP* case-suffix can act either as an OBLIQUE*theta* of the argument-taking predicate denoted by the case-suffix, or as an ADJUNCT of that OBLIQUE*theta*. I have shown in 3.5.1 how the assignment of OBLIQUE*theta* and OBLIQUE*theta* ADJUNCT can be done in the morphology, creating the following structures:

(13)

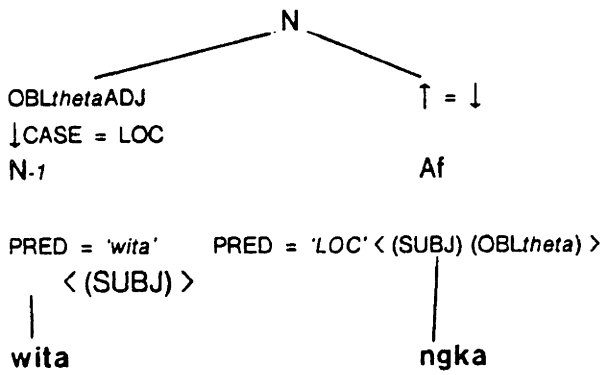
1. OBL*theta*; *ATP* case-suffix



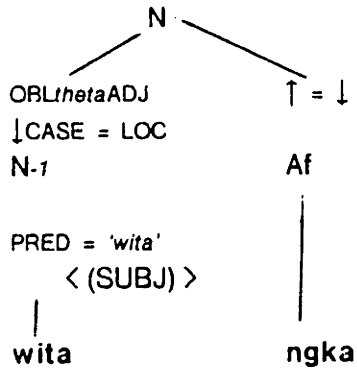
2. OBL*theta*; *AGR* case-suffix



3. OBL*theta* ADJ; *ATP* case-suffix



4. OBL*theta*ADJ; *AGR* case-suffix



Morphological assignment accounts for the assignment of the functions OBLIQUE*theta* and OBLIQUE*theta* ADJUNCT to *case-marked* nominals (Ns) within $\overline{N}$. However, it does not account for the assignment of these functions to *non-case-marked* nominals (N^{-1}s) within $\overline{N}$, e.g. the assignment of OBLIQUE*theta* to *pirli* in *pirli wita-ngka* ('rock small-LOC'). Morphological assignment as discussed in 3.5.1 only operated in the context of a

word-formation rule adding a case-inflection to an N^{-1}. It did not operate on bare N^{-1}s.

Loosely, the semantic logical structure of the $\overline{N}$ *pirli wita-ngka* (rock small-LOC) is as follows:

OBL*theta*	OBL*theta* ADJ	↑ = ↓	
[pirli	**wita]**	**ngka**	'on the small rock'

How should this modification be represented? The syntactic rule (8) which I proposed for determining function-assignment within grammatically-case-marked $\overline{N}$s will not suffice. A nominal in an $\overline{N}$ containing an *ATP* case-suffix acts as an OBLIQUE*theta*s or an OBLIQUE*theta* ADJUNCT, not as a functional head or an ADJUNCT, which are the only functions mentioned in (8).

Suppose the assignment of functions to daughters of $\overline{N}$ is extended, so that a daughter of $\overline{N}$ can also have the function OBLIQUE*theta* or the function OBLIQUE*theta* ADJUNCT. In that event, there are three levels of function assignment:

[1] Assign GFs freely to the daughters of S.

[2] Assign ↑ = ↓, ADJUNCT, OBLIQUE*theta*, and OBLIQUE*theta* ADJUNCT freely to the daughters of $\overline{N}$.

[3] Assign OBLIQUE*theta* and OBLIQUE*theta* ADJUNCT to N^{-1} in the morphology when a case-suffix attaches to that N^{-1}.

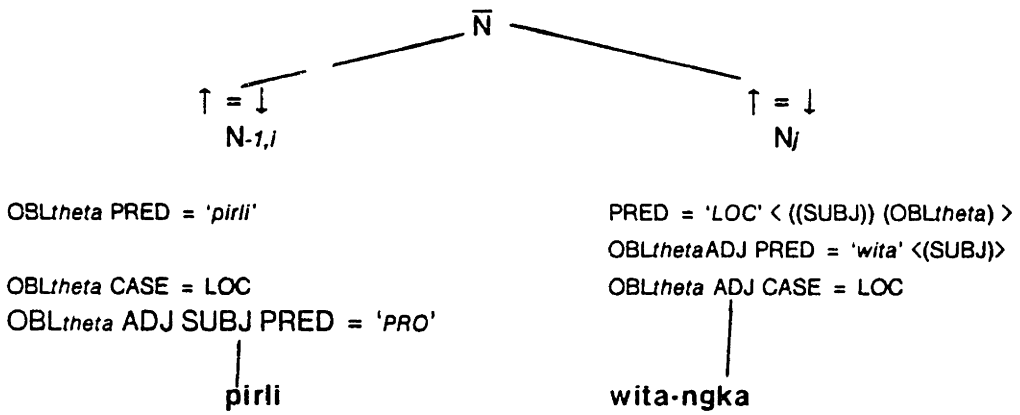
As is apparent from the list, the assignment of functions involves some redundancy. Let us consider how it could be reduced.

First, OBLIQUE*theta* and OBLIQUE*theta* ADJUNCT are assigned both in the morphology and to daughters of $\overline{N}$. Perhaps this redundancy can be eliminated. It is clear that OBLIQUE*theta* and OBLIQUE*theta* ADJUNCT must be assigned in the morphology, as I argued in 3.5.1. Can we eliminate assignment of OBLIQUE*theta* and OBLIQUE*theta* ADJUNCT to daughters of $\overline{N}$? Suppose we claimed that in the morphology any N^{-1}, whether or not it has a case-suffix attached, can be assigned the function OBLIQUE*theta* or OBLIQUE*theta* ADJUNCT. This amounts to claiming that assignment of functions in the morphology is independent of affixation, which perhaps allows too much freedom for

function assignment. However, as I will show, it has advantages over the multi-level assignment.

On this approach then, a caseless nominal, such as *pirli*, in the structure *pirli wita-ngka*, is labelled with information about the OBLIQUE*theta* by virtue of morphological assignment. If a case-marked nominal, such as *wita-ngka* in *pirli wita-ngka*, is assigned ↑ = ↓ as a daughter of $\overline{N}$, and is morphologically assigned the function OBLIQUE*theta* ADJUNCT, the correct result will also be obtained. The information attached to N as a result of morphological assignment is given in (14).

(14)



(Recall that an equation such as OBL*theta* ADJ SUBJ PRED = *'PRO'* is a derived equation, representing two distinct equations, ↑OBLIQUE*theta* ADJUNCT = ↓, and (↑SUBJ PRED) = 'PRO'. On their own, the two equations do not violate *functional locality*. The derived equation would violate *functional locality*, except that derived equations are not subject to functional locality – see 3.5.1.)

The equation ↑ = ↓ attached to N*j* exhaustively dominates information about the OBLIQUE*theta* ADJUNCT. Therefore information about the OBLIQUE*theta* ADJUNCT dominated by N*j* is also information about the OBLIQUE*theta* of the whole $\overline{N}$. This permits the construction of a corresponding well-formed f-structure, as in (15).

(15)

$$\text{ADJUNCT} \quad \begin{bmatrix} \text{PRED} = \textit{'LOC'} \langle (\text{SUBJ})), (\text{OBL}_{\textit{theta}}) \rangle \\ \\ \text{OBL}_{\textit{theta}} \quad \begin{bmatrix} \text{PRED} = \textit{'pirli'} \\ \text{CASE} = \textbf{LOC} \\ \text{ADJ} \quad \begin{bmatrix} \text{PRED} = \textit{'wita'} \\ \text{SUBJ}\,[\text{PRED} = \text{'PRO'}] \\ \text{CASE} = \textbf{LOC} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

This leaves us with only the functional head and ADJUNCT equations being assigned to the daughters of $\bar{N}$. Since an N^{-1} can be an ADJUNCT, as for example *wita* in *wita pirli-ngki* 'small rock-ERG',[7] we could assume that the function ADJUNCT is also assigned in the morphology to N^{-1}s. What, however, of case-marked nominals acting as ADJUNCTs within $\bar{N}$?

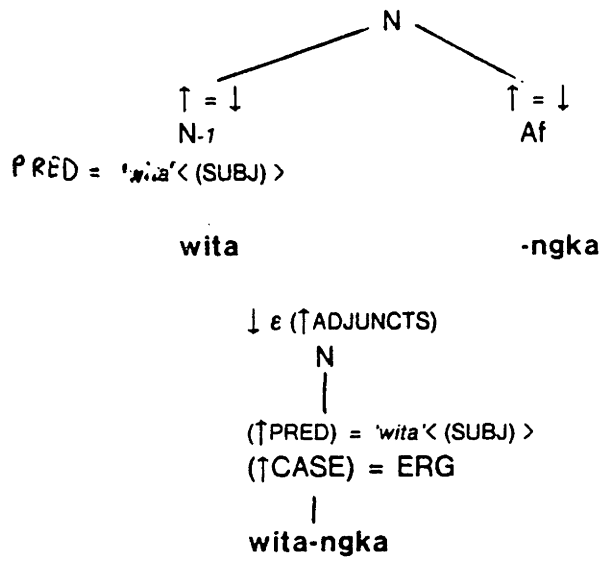
Consider the $\bar{N}$ *pirli wita-ngku* 'rock small-ERG'. *Pirli* acts as the head, and *wita-ngku* as the ADJUNCT. *Wita-ngku* consists of an N^{-1} and ERGATIVE case. The N^{-1} is the functional head. Suppose that this N^{-1} receives the ADJUNCT function in the morphology. In (16) I give 2 trees, one in which the N has been labelled as an ADJUNCT in the syntax (a.), and the other in which the N has been labelled as a functional head in the syntax, but the N^{-1} of that N has been labeled ADJUNCT in the morphology (b.).

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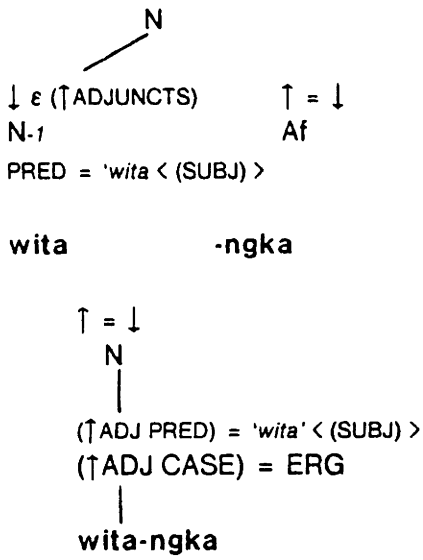
7. Recall that this order with the head following the attribute is highly marked.

(16)

a.



b.



From the information provided in the abbreviated trees above, these structures will create the same f-structures, given in (17).

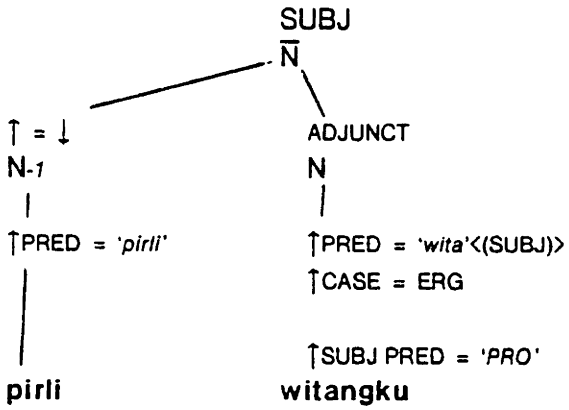
(17)

$$\text{ADJUNCT} \quad \begin{bmatrix} \text{PRED} = \textit{'wita'} < (\text{SUBJ}) > \\ \text{CASE} = \text{ERG} \end{bmatrix}$$

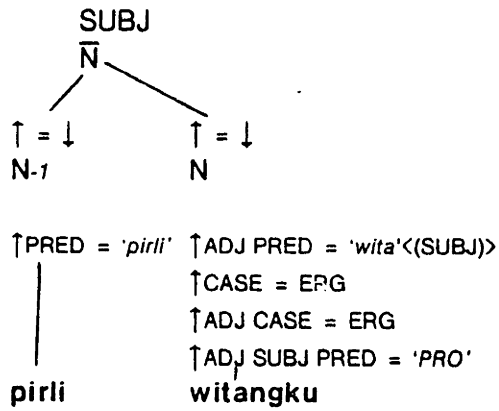
There is an empirical difference between the two proposals which favours assigning the ADJUNCT function to N^{-1} in the morphology. Consider the annotated tree structures for an $\bar{N}$ *pirli wita-ngku* 'rock small-ERG' acting as the SUBJECT under the two proposals.

(18)

Syntactic assignment



Morphological assignment



The morphological and syntactic assignments of ADJUNCT differ as to whether or not the whole $\overline{N}$ acquires case. If the function ADJUNCT is assigned to N^{-1} morphologically, then there are two sets of equations attached to a case-marked nominal with a grammatical case such as ERGATIVE. One set of equations gives information about the ADJUNCT. This includes the information that the ADJUNCT's case is ERGATIVE. It is ERGATIVE by virtue of the equation ↓CASE = ERGATIVE which is attached to the N^{-1} as part of the word-formation rule which attaches a case-suffix such as ERGATIVE to an N^{-1}. The other equation is the equation (↑CASE) = ERGATIVE attached to the case-suffix. This is information about *up*, NOT about the ADJUNCT. *Up* in this instance happens to be the SUBJECT. If on the other hand, the N is assigned ↓ ε (↑ADJUNCTS) in the syntax, then the information that its case is ERGATIVE applies ONLY to the ADJUNCT, and not the $\overline{N}$. But if the $\overline{N}$ has no case-feature, then, by virtue of the default case assignment rule discussed in 3.5.2.3, the whole $\overline{N}$ will have ABSOLUTIVE case. Therefore the SUBJECT of the sentence must have ABSOLUTIVE case. But this is an undesirable result, since no nominal with ERGATIVE case can ever appear in a sentence with an ABSOLUTIVE SUBJECT. (19) shows the f-structures derived from (18).

(19)

Syntactic assignment of ADJUNCT

SUBJECT
$$\left[\begin{array}{l} \text{PRED} = \text{'}kurdu\text{'} \\ \text{CASE} = \textbf{ABSOLUTIVE (default)} \\ \text{ADJ} \left[\begin{array}{l} \text{PRED} = \text{'}wita\text{'} \langle(\text{SUBJ})\rangle \\ \text{SUBJ PRED} = \text{'PRO'} \\ \text{CASE} = \textbf{ERG} \end{array}\right] \end{array}\right]$$

Morphological assignment of ADJUNCT

SUBJECT
$$\left[\begin{array}{l} \text{PRED} = \text{'}kurdu\text{'} \\ \text{CASE} = \textbf{ERGATIVE} \\ \text{ADJ} \left[\begin{array}{l} \text{PRED} = \text{'}wita\text{'} \langle(\text{SUBJ})\rangle \\ \text{SUBJ PRED} = \text{'PRO'} \\ \text{CASE} = \textbf{ERG} \end{array}\right] \end{array}\right]$$

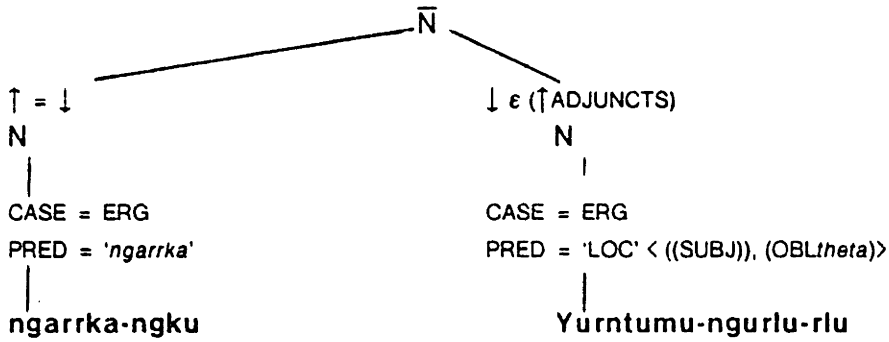
I conclude therefore that, at the level of $\overline{N}$, only the equation $\uparrow = \downarrow$ is assigned, and that in the morphology, the functions ADJUNCT, OBLIQUE*theta* and OBLIQUE*theta* ADJUNCT are freely assigned. One may consider $\uparrow = \downarrow$ to be a default assignment in the morphology.

Assigning ADJUNCT in the morphology, rather than the syntax, also provides a first step towards a solution to a rather difficult problem; namely why some semantic case-suffixes cannot occur as ADJUNCTs in $\overline{N}$, that is, why (20) is apparently ill-formed as a single constituent.

(20) *Ngarrka-ngku Yurntumu-ngurlu-rlu AUX
man-ERG Yuendumu-EL-ERG
the man from Yuendumu

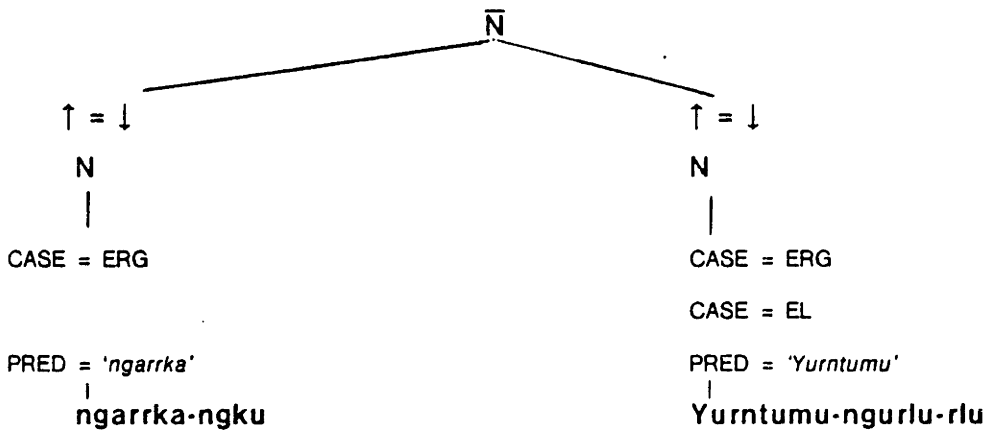
If ADJUNCTS are assigned freely at the $\overline{N}$ level, then nothing blocks assigning the ADJUNCT function to *Yurntumu-ngurlu-rlu* in (20), and assigning functional head status to *ngarrka*. The c-structure is given in (21).

(21)



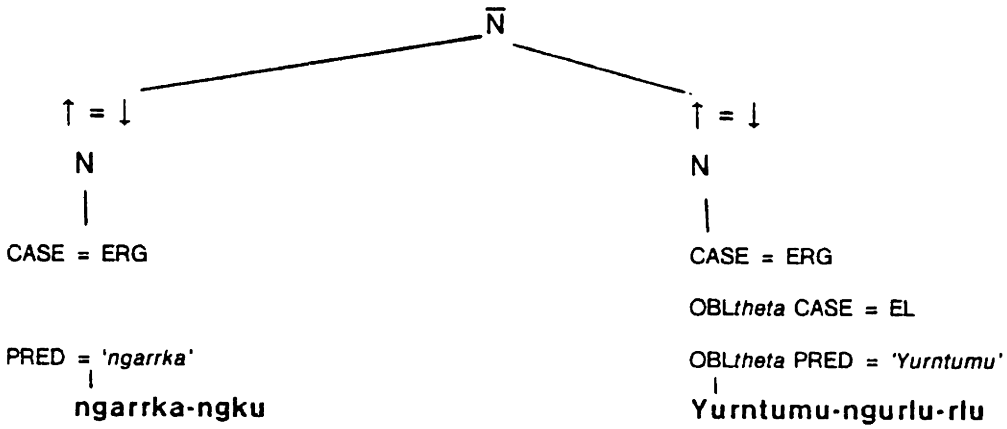
There is a well-formed f-structure corresponding to (21). Therefore some other means is needed to block (20). The problem stems from free assignment of the ADJUNCT function. If , however, only ↑ = ↓ can be assigned in the syntax, then the assignment depicted in (21) does not arise. For, suppose that a nominal with a semantic case-suffix such as the ELATIVE *ngurlu* is generated in the same N̄ as a nominal with ERGATIVE case. Then there are three possible situations. First, as depicted in (22) , the nominal *Yurntumu* of *Yurntumu-ngurlu-rlu* acts as the functional head, in which event *consistency* of case-suffixes will rule the structure out. *Yurntumu-ngurlu-rlu* has two case equations, one asserting that the case is ERGATIVE, the other that it is ELATIVE.

(22)



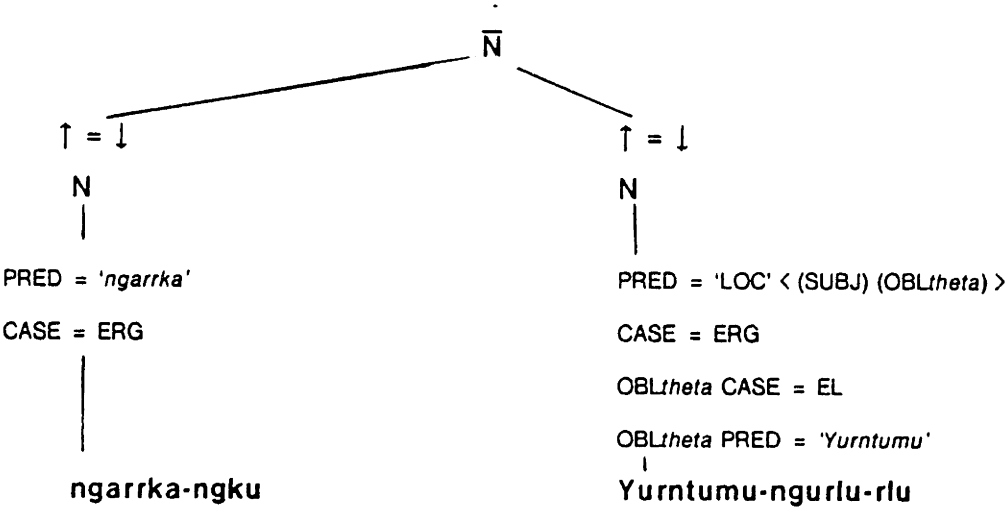
Second, the N^{-1} has the function OBLIQUE*theta*, or OBLIQUE*theta* ADJUNCT, and the case-suffix merely acts as an agreement marker, in which case *coherence* will rule the f-structure out: the SUBJECT function does not contain an argument-taking predicate selecting the OBLIQUE*theta*.

(23)



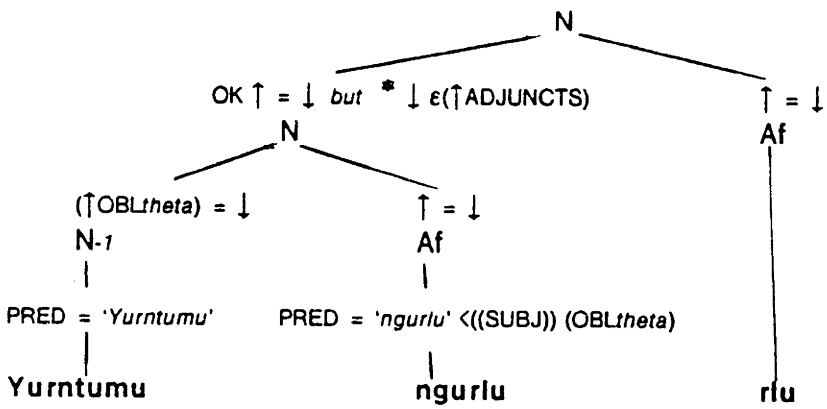
Third, the case-suffix acts as the functional head, in which event the N̄ will have two PREDs, the PRED of the case-suffix, and the PRED of the ERGATIVE nominal. In this situation the f-structure will be *inconsistent.*

(24)



Why doesn't the same structure arise with the free assignment of ADJUNCT in the morphology? The answer is that the corresponding situation could only arise if the whole N *Yurntumu-ngurlu* were assigned the ADJUNCT function, as in (25). But I claimed that the functions are assigned only to *caseless* nominals, i.e. N^{-1}s, in the morphology, not to *case-marked* nominals, i.e. Ns.

(25)



4.2.2.1 Derivational case-suffixes

An interesting problem arises with derivational case-suffixes. Unlike most semantic case-suffixes, DCNs apparently CAN occur as attributes of a nominal within an $\bar{N}$, as (26) illustrates. (My impression is that, with the exception of the POSS suffix *kurlangu*, these are much less frequent than examples in which the DCN is a free attribute modifying an argument not in the same constituent.) The ambiguity of (26) is discussed in Hale (PWT), and Nash (1980).

(26) kurdu wita-kurlu
child small-PROP
with a small child
child with something small.

Further examples are given in (27) through (30). The fact that in (27) both the *kurlu* nominal and the nominal it modifies appear before the AUX suggests that they form a single constituent. Similar remarks hold of (28) and (29). The fact that in (28) only the last

element is marked with ERGATIVE case provides further evidence that the DCN and the nominal it modifies form a constituent, as does the fact that in (30) only the last element is marked LOCATIVE.

(27) *Kurlarda* *yangka* *ngarnngu-kurlu* ka-lu pikirri-kirra
spear the hook-PROP-ABS PRES-3pl spear.thrower-ALL
yirra-rni...
put-NPST
They put the hunting spear with that hook onto the spear thrower.. [mangulpa]

(28) *Yangka* *purlka* *ngaju-piya-rlu* kala para-ja - wirrkardu-ku
the old.man I-LIKE-ERG USIT follow-PAST few-DAT
ngurra-patu-ku-rlu.
camp-PL-DAT-ERG
That old man like me followed it -- for several days. [parami]
(Note that this example is unusual in that the DATIVE-marked time adverbial has ERGATIVE on the last element and not on the first.)

(29) *Kuyu* *yalyu-parnta + wiyi* kala pi-nja-ya-nu.
meat blood-PROP-ABS + BEFORE USIT hit-INF-PROG-PAST
He killed an animal with (fresh) blood in it. [yalyu]

(30) Yiji-pu-ngu minjirnpa maliki-rli *jurnarrpa*
urinate-PAST urine-ABS dog-ERG belongings
yapa-kurlangu-rla.
person-POSS-LOC.
The dog urinated on the people's things. [minjirnpa]

It seems that the $\overline{N}$ rule must be modified so as to allow one N to be assigned the function ADJUNCT. (I do not know of examples where more than one DCN appears in an $\overline{N}$ and both are used as ADJUNCTs)

(31) **Revised $\overline{N}$ expansion rule**

$$\overline{N} \rightarrow N\text{-}1^{*} \qquad N^{*} \qquad \left\{ \begin{array}{l} N \\ \downarrow \in (\uparrow \text{ADJUNCTS}) \\ \\ N \end{array} \right\} \qquad N^{*}$$

I have had to use the disjunction of an $\overline{N}$ annotated with the function ADJUNCT and an ordinary N to capture the facts that the ADJUNCT can be, but need not be final, and that an $\overline{N}$ must have a case-marked N finally. (Recall that N* means "as many Ns as desired, including none").

However, if one N can be assigned the function ADJUNCT, nothing prevents an SCN from acting as an ADJUNCT, thus permitting structures such as **Ngarrka Yurntumu-ngurlu-rlu*. I suggest in Chapter 6 that semantic case-suffixes are distinguished from both derivational case-suffixes, grammatical case-suffixes, and ordinary nominals by a feature of *dependent tense*, and that, among other properties, this prevents SCNs from acting as ADJUNCTs within $\overline{N}$. As a first approximation, we can represent this by a negative constraint equation accompanying the equation $\downarrow \in$ (↑ADJUNCTS).

$$\neg (\downarrow \text{TENSE})$$

This constraint equation requires that the N have no tense feature, thus preventing SCNs from appearing as ADJUNCTS within $\overline{N}$.

The next section is a speculative digression. I suggest that this ability of DCNs to appear as an ADJUNCT within an $\overline{N}$ correlates with two other somewhat marginal properties of DCNs, the ability to have ADJUNCTs of their own within $\overline{N}$, and the ability to sanction a limited violation of category order in the $\overline{N}$ rule.

4.2.2.1.1 Speculations

(32) shows the first marginal property of DCNs, that a DCN acting as an ADJUNCT in an $\overline{N}$ may occasionally have its own ADJUNCT. Consider the following elicited examples from the *Warlpiri Survey*:

(32)	*Maliki*	*kurdu yali-kirlangu-rlu*	ka	wajili-pi-nyi	mutukayi.
	dog	child that.rem-POSS-ERG	PRES	chase-NPST	car-ABS
	The dog of that child is chasing the car.				

(33)	*Kurdu yali-kirlangu*	*maliki-rli*	ka	wajili-pi-nyi	mutukayi.
	child that.rem-POSS	dog-ERG	PRES	chase-NPST	car-ABS
	The dog of that child is chasing the car.				

In both (32) and (33), the SUBJECT *maliki-rli* 'dog-ERG' is modified by a possessive attribute, which consists of the possessor *kurdu* 'child', and a demonstrative *yali*.[8] The fact that the whole complex precedes the AUX, and the fact that in both examples the ERGATIVE case is present only on the last item, show that the whole complex is treated as a single constituent.

Another less clear case is given in (34).

(34) *Wati-ngki* *yali-rli* *karnta* *jirrama-kurlu-rlu,* ngulaju
man-ERG that.rem-ERG woman two-PROP-ERG, that
kinki + ji nya-ngu jukurrpa-rlu
devil-ABS + EUPH see-PAST dream-ERG
That man with the two wives saw the devil in a dream. [jirrama]

In (34) two nominals with ERGATIVE case, *wati-ngki* and *yali-rli*, are modified by a DCN *karnta jirrama-kurlu-rlu*. In turn, the OBLIQUE*theta* of the derivational case-suffix *kurlu*, namely *karnta* ('woman'), is modified by the attribute *jirrama* ('two'). It is not absolutely clear that *Wati-ngki yali-rli karnta jirrama-kurlu-rlu* is acting as a single constituent, but if it is, then this is an example of a DCN with an ADJUNCT of its own acting as an ADJUNCT in an $\overline{N}$.

(35), which was elicited, is apparently also a single constituent, and contains an ADJUNCT of an ADJUNCT.

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8. Observe that in each instance the head of the ADJUNCT, *kurdu* 'child', precedes the demonstrative *yali*, in accordance with the the head-first principle. This preference allows for the disambiguating of the following sentence, also from the Survey.

Maliki	*yali*	*kurdu-kurlangu-rlu*	*ka*	*wajili-pi-nyi*	*mutukayi.*
dog	that.rem	child-POSS-ERG	PRES	chase-NPST	car-ABS

That dog of the child is chasing the car.

The demonstrative *yali* follows *maliki*, and precedes *kurdu*, and is therefore interpreted as an ADJUNCT of *maliki* rather than of *kurdu*.

(35) *yujuku* *maliki-kirlangu* *kurdu-kurlangu-kurlangu*
shelter dog-POSS child-POSS-POSS
The child's dog's shelter. [Survey]

Such double POSS case-marking has not been recorded in natural speech, and so the status of the construction is in doubt. Presumably (35) has the semantic logical structure given below.

[yujuku [maliki-*kirlangu* [[kurdu-*kurlangu*] *kurlangu*]]]]

That is, *kurdu-kurlangu-kurlangu* is acting as an ADJUNCT of *maliki* which is in turn acting as an ADJUNCT of *yujuku*.

The second type of exceptional behaviour that DCNs show is illustrated in (36). Recall that the $\overline{N}$ rule as given does not allow for the interspersion of case-marked nominals with N^{-1}s. But, as Nash (1980) points out, such interspersion can occur just in case the $\overline{N}$ has a derivational case-suffix.

(36) *karnta-kurlu* *wita* *kurdu-kurlu*
woman-PROP small child-PROP
'with a small girl'

The PROP derivational case-suffix, *kurlu*, acts as an *ATP* for the whole N.

It seems that a limited amount of recursion is needed within the $\overline{N}$ rule.[9] Tentatively, I suggest that an $\overline{N}$ can contain one $\overline{N}$, and that this $\overline{N}$ is optionally assigned the function ADJUNCT, unlike other daughters of $\overline{N}$ which are only assigned $\uparrow = \downarrow$.

(37) **Speculative revision of the $\overline{N}$ rule**

$$\overline{N} \rightarrow N^{-1*} \qquad N^* \qquad \left\{ \begin{array}{l} \overline{N} \\ (\downarrow \in (\uparrow \text{ADJUNCTS})) \\ \\ N \end{array} \right\} \qquad N^*$$

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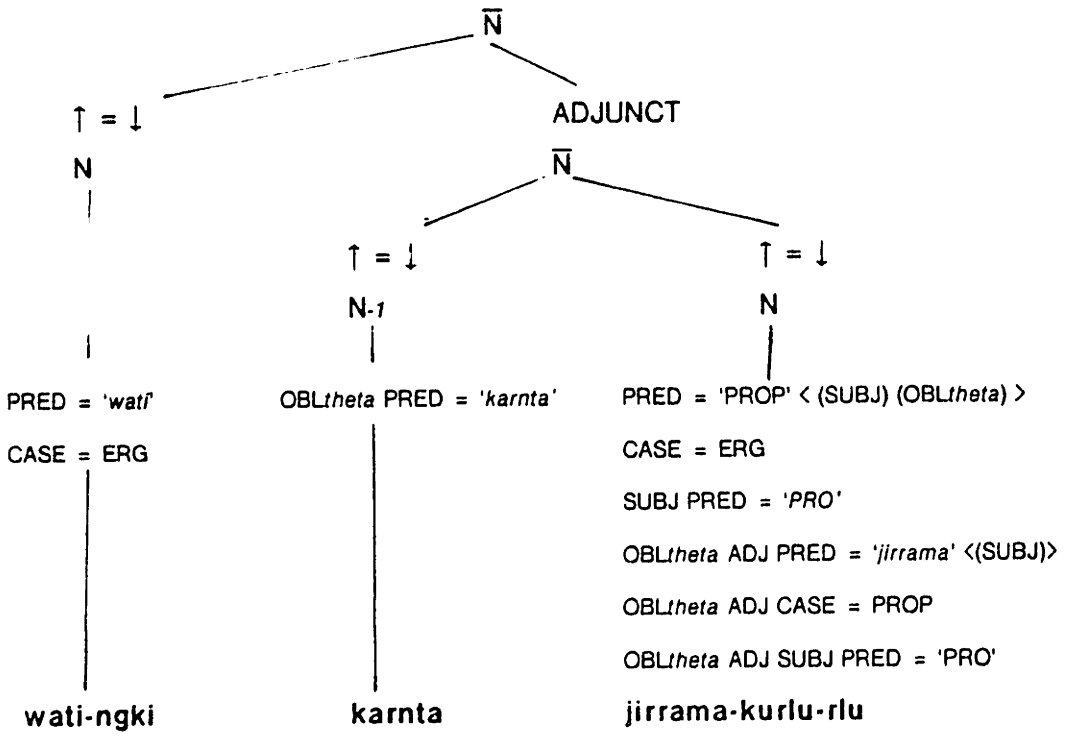
9. Whether recursion can extend to ADJUNCTs of ADJUNCTs of ADJUNCTs is a matter for investigation. The rarity of ADJUNCTS of ADJUNCTs makes it seem improbable.

Thus, the fact that a DCN can apparently act as an ADJUNCT within an $\bar{N}$ will be expressed by assuming that DCNs can be generated under an $\bar{N}$ which can have the function ADJUNCT within another $\bar{N}$. Allowing $\bar{N}$ to expand to another $\bar{N}$ with the function ADJUNCT also permits the representation of ADJUNCTs which have their own ADJUNCTS. Finally, this $\bar{N}$ may also be assigned $\uparrow = \downarrow$, to account for the apparent violation of the order of N^{-1}s and Ns within $\bar{N}$. In the next section I will outline the c-structures and f-structures created by the speculative $\bar{N}$ rule.

4.2.2.1.2 Application of the N-bar rule

In this section the c-structures and f-structures for several of the $\bar{N}$s containing other $\bar{N}$s are given in order to show the efffect of these rules. (38) and (39) show the c-structure and f-structure for (34) *watingki karnta jirramakurlurlu*, 'the man with two wives', in which an ADJUNCT 'with a wife', is further modified by the numeral *jirrama* 'two'.

(38) **C-structure for an ADJUNCT of an ADJUNCT**

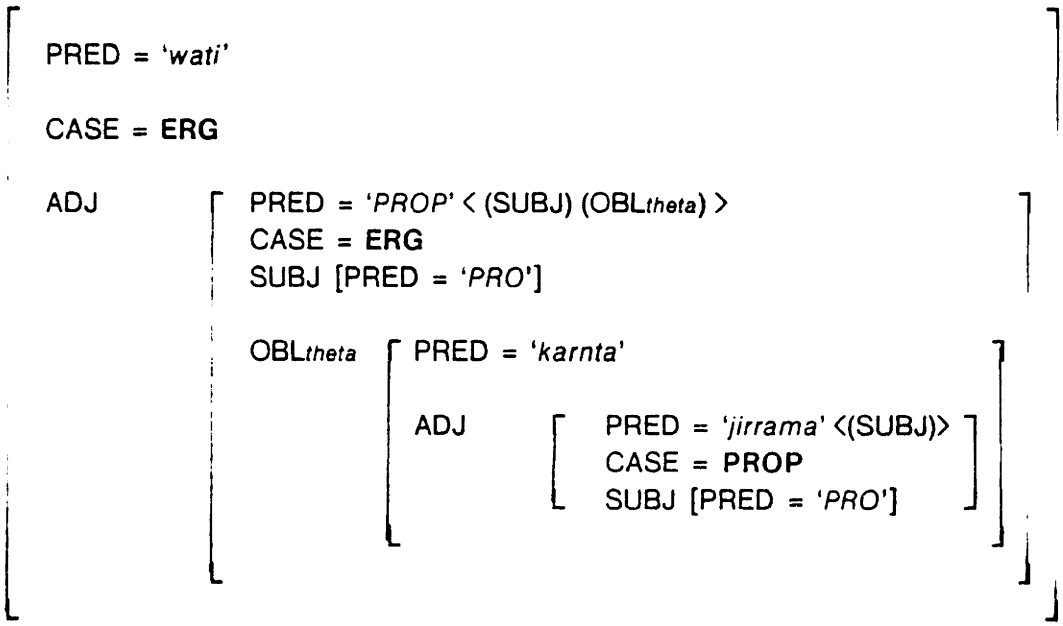


'The man with two wives.'

The $\bar{N}$ is assigned the function ADJUNCT by (37). The argument-taking predicate of the ADJUNCT is provided by the derivational case-suffix *kurlu*. This argument-taking predicate selects a SUBJECT, which is filled by an anaphoric null pronominal, and an OBLIQUE*theta*, which is satisfied by the nominal *karnta*. The nominal *jirrama* acts as an ADJUNCT of *karnta*. The whole ADJUNCT *karnta jirrama-kurlu-rlu* attributes a property to *wati-ngki*, and so has ERGATIVE case in agreement.

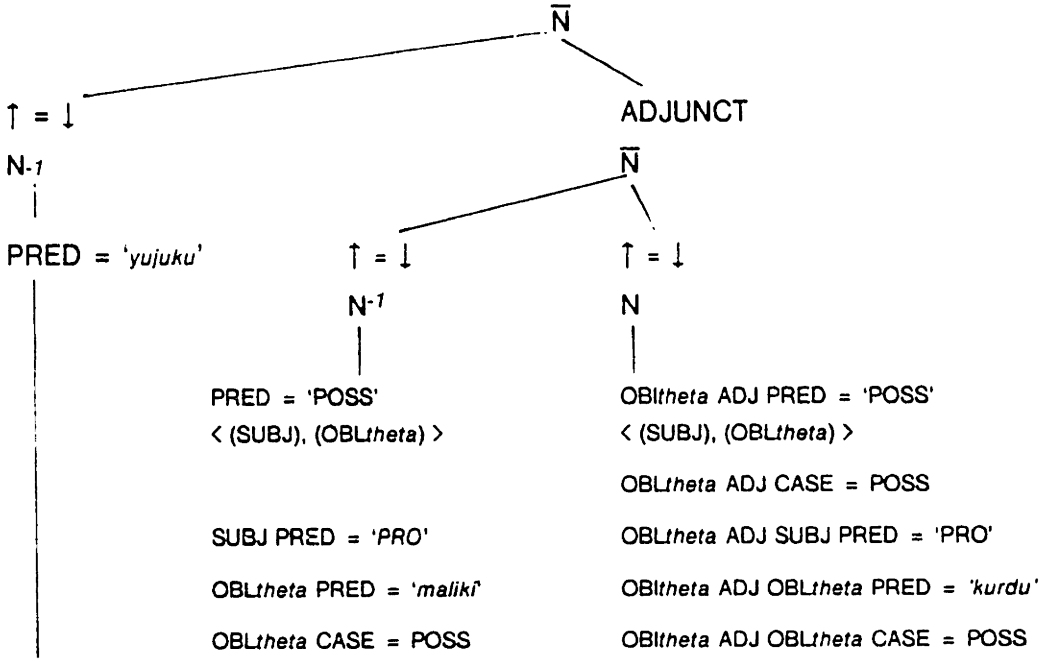
The f-structure derived from (38) follows:

(39) **F-structure for an ADJUNCT of an ADJUNCT**



The c-structure and f-structure for (35), *yujuku malikikirlangu kurdukurlangukurlangu* which has an ADJUNCT of an ADJUNCT with two case-suffixes, are given below.

(40) C-structure for doubly case-marked ADJUNCTS



'The child's dog's house'

As in the previous example, the internal $\bar{N}$ is assigned the function ADJUNCT. The PRED of the ADJUNCT is the Possessive suffix *kurlangu*, which selects a SUBJECT and an OBLIQUE*theta*. The SUBJECT is represented by a null pronominal, which is controlled by the functional head of the whole $\bar{N}$, the nominal *yujuku*. The OBLIQUE*theta* of the *ATP* is the nominal *maliki*. This nominal is in turn modified by an ADJUNCT, *kurdu-kurlangu-kurlangu*. The PRED of this ADJUNCT is also the POSS case-suffix *kurlangu*. *Kurlangu* takes a SUBJECT (represented by a null pronominal), and an OBLIQUE*theta* (represented by the nominal *kurdu*). The null pronominal is controlled by *maliki*. *Kurdu-kurlangu-kurlangu* has two case-suffixes, one which acts as the argument-taking predicate of the ADJUNCT, and the other of which acts as an agreement marker with *maliki*.

Observe that the internal $\bar{N}$ has no case. I proposed in 3.5.2.3 that ABSOLUTIVE should be assigned as a default case to N and $\bar{N}$. This of course also covers internal $\bar{N}$s. Therefore, the internal $\bar{N}$ has ABSOLUTIVE case. The internal ADJUNCT is predicated of the N-*ɨ yujuku*, which has no CASE. Therefore there is no case clash, and the Adjunct Agreement Convention is not violated.

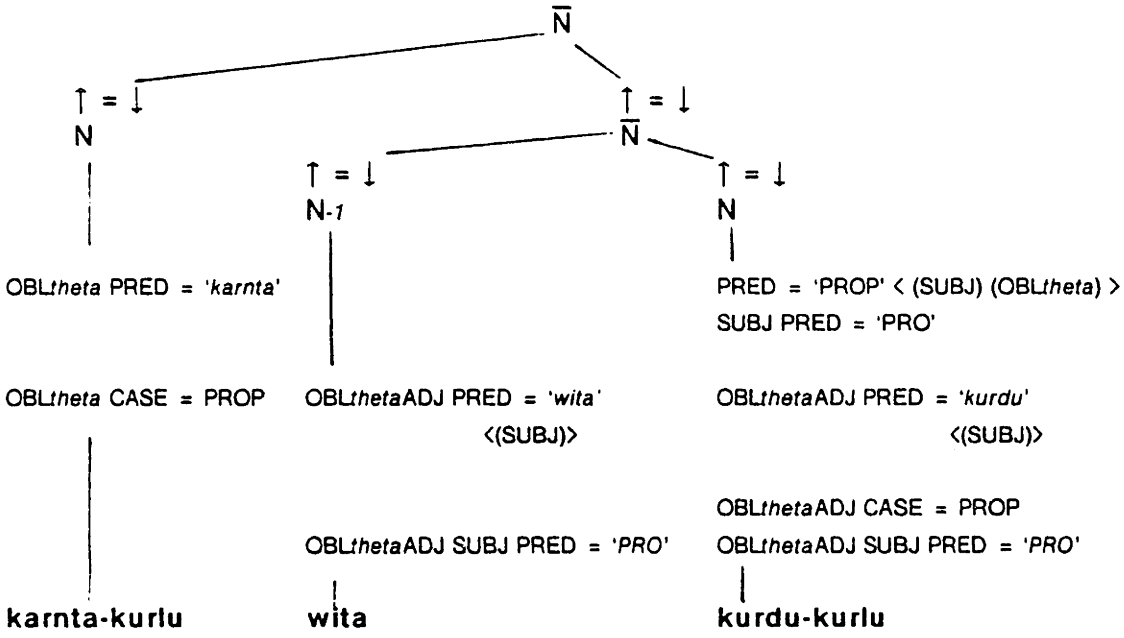
The f-structure for this example is given below.

(41) **F-structure for doubly case-marked ADJUNCTS**

$$
\begin{bmatrix}
\text{PRED} = \text{'}yujuku\text{'} \\
\text{CASE} = \text{ABS (default)} \\
\text{ADJ} \left\{ \begin{bmatrix}
\text{PRED} = \text{'}POSS\text{'} \langle (\text{SUBJ}) (\text{OBL}_{theta}) \rangle \\
\text{CASE} = \text{ABS (default)} \\
\text{SUBJ PRED} = \text{'}PRO\text{'} \\
\text{OBL}_{theta} \begin{bmatrix}
\text{PRED} = \text{'}maliki\text{'} \\
\text{CASE} = \text{POSS} \\
\text{ADJ} \left\{ \begin{bmatrix}
\text{PRED} = \text{'}kurlangu\text{'} \langle (\text{SUBJ}) (\text{OBL}_{theta}) \rangle \\
\text{CASE} = \text{POSS} \\
\text{SUBJ} \quad [\text{PRED} = \text{'}PRO\text{'}] \\
\text{OBL}_{theta} \begin{bmatrix} \text{PRED} = \text{'}kurdu\text{'} \\ \text{CASE} = \text{POSS} \end{bmatrix}
\end{bmatrix} \right\}
\end{bmatrix}
\end{bmatrix} \right\}
\end{bmatrix}
$$

The last example to look at is (36) *Karntakurlu wita kurdukurlu*, which contains conjoined ADJUNCTs: *kurdu* 'child' and *wita* 'small'.

(42) C-structure for conjoined ADJUNCTS



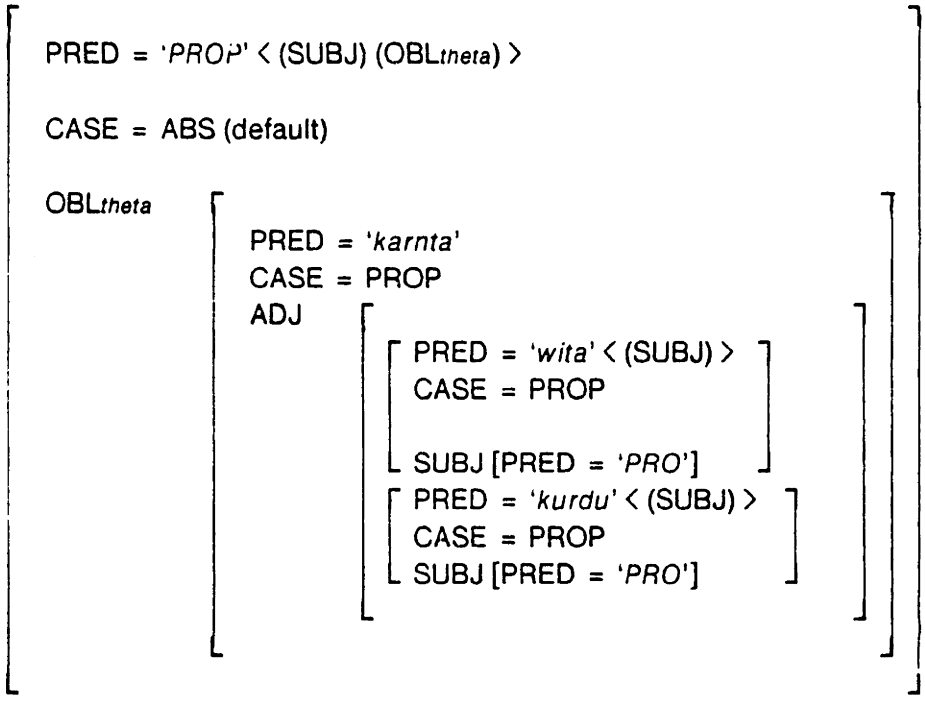
with a small girl

The whole N̄ acts as an ADJUNCT, whose argument-taking predicate is the suffix *kurlu*. *Kurlu* selects a SUBJECT and an OBLIQUE*theta*. The SUBJECT is represented by a null pronominal. The OBLIQUE*theta* is the nominal *karnta*. This OBLIQUE*theta* is modified by two ADJUNCTs, *wita* and *kurdu*. These two ADJUNCTs form the internal N̄, which is assigned ↑ = ↓ rather than ADJUNCT.[10] The f-structure is given below.

---

10. This analysis is somewhat doubtful. As it stands, one might expect to find all derivational case-suffixes in such structures, and also the semantic case-suffix LOCATIVE, which shares derivational case properties. We do not have the data on these. It may be necessary to restrict the assignment of ↑ = ↓ just to, say, nominals with PROP case, and to assume that ADJUNCT is the normal assignment to N̄.

(43) **F-structure for coordinated ADJUNCTS**



As is clear, *wita* and *kurdu* can both act as ADJUNCTs by virtue of the fact that the function ADJUNCT is evaluated by a set of f-structures, and not by a single f-structure. The entire $\overline{N}$ has ABSOLUTIVE case by virtue of the default assignment of ABSOLUTIVE case, which applies to both the internal and the external $\overline{N}$.[11]

In the next two sections, I will tie up some loose ends before summarizing the representation of function assignment within $\overline{N}$.

---

11. This predicts that a nominal such as *karnta wita-kurlu kurdu-kurlu-rlu* would be ungrammatical by virtue of *consistency*. *Karnta wita-kurlu* would receive ABSOLUTIVE case by default assignment (being an $\overline{N}$), which would clash with the ERGATIVE case of *Kurdu-kurlu-rlu*. This has yet to be checked.

4.2.2.2 LOCATIVE

In the previous section I have shown how the fact that a DCN can act as an ADJUNCT within an $\overline{N}$ can be represented. Here I will discuss the occasional use of the semantic case-suffix LOCATIVE as an ADJUNCT within an $\overline{N}$. An example follows:

(44) *Pirli-ngka-rlu* *wati-ngki* -nganpa luwa-rnu.
rock-LOC-ERG man-ERG -1plex shoot-PAST
The man on the hill shot us.

(45) *Wati* *pirli-ngka-rlu* -nganpa luwa-rnu.
man-ABS rock-LOC-ERG -1plex shoot-PAST
The man on the hill shot us. [Data sent by David Nash, April 1983.]

The SCN *pirli-ngka-rlu* can act as an attribute of the ERGATIVE SUBJECT *wati-ngki* in the same $\overline{N}$, whether it precedes or follows *wati*. (Thus, the LOCATIVE behaves like a possessive, rather than like a determiner, in its freedom of position). In this respect, the LOCATIVE acts like a derivational case-suffix, rather than a semantic case-suffix. Observe too that, like DCNs, nominals with the LOCATIVE are sometimes found as matrix predicates (see 3.4.2), whereas other SCNs are not. In fact, rather than there being two separate categories SCNs and DCNs, perhaps there is a continuum:

(46) **Derivational**

1. suffixes which are closely related to derivational affixes, such as *parnta* PROP and *kurlangu* POSS. These can act as argument attributes (i.e. provide the *ATP* for an argument-modifying ADJUNCTs), but rarely, if ever, act as sentential ADJUNCTs.

2. suffixes such as *wana* PERL and *jangka* SOURCE which are often found acting as the argument-taking predicate of a sentential ADJUNCT. For instance, a nominal + *wana* can denote the path of an action, while a nominal + *jangka* can denote the reason for an action. In such instances, it seems unlikely that they should be construed as modifying an argument, rather than the event.

3. the LOCATIVE. Like a semantic case-suffix, it can act as a sentential ADJUNCT. Like derivational case-suffixes, it can act as a matrix predicate or as an ADJUNCT within an $\overline{N}$,

4. the semantic cases such as *kurra* which never act as matrix predicates, or as the ADJUNCT within an $\bar{N}$.

Semantic

In Chapter 6, I will attempt to draw together these observations about the ability of the LOCATIVE and DCNs to act as matrix predicates, and to appear in the same constituent as a nominal which they modify, and relate it to a feature [dependent tense].

4.2.2.3 Double case-marking and concord

There are strong restrictions on the appearance of double case-marking within $\bar{N}$. The only allowable forms are:

1.	*pirli*	*wita*	*-ngka*	*-rlu*
	rock	small	-LOC	-ERG

2.	*pirli*	*-ngka*	*-rlu*	*wita*	*-ngka*	*-rlu*
	rock	-LOC	-ERG	small	-LOC	-ERG

The following are unacceptable:

3.*	*pirli*	*-ngki*	*wita*	*-ngka*	*-rlu*
	rock	-ERG	small	-LOC	-ERG

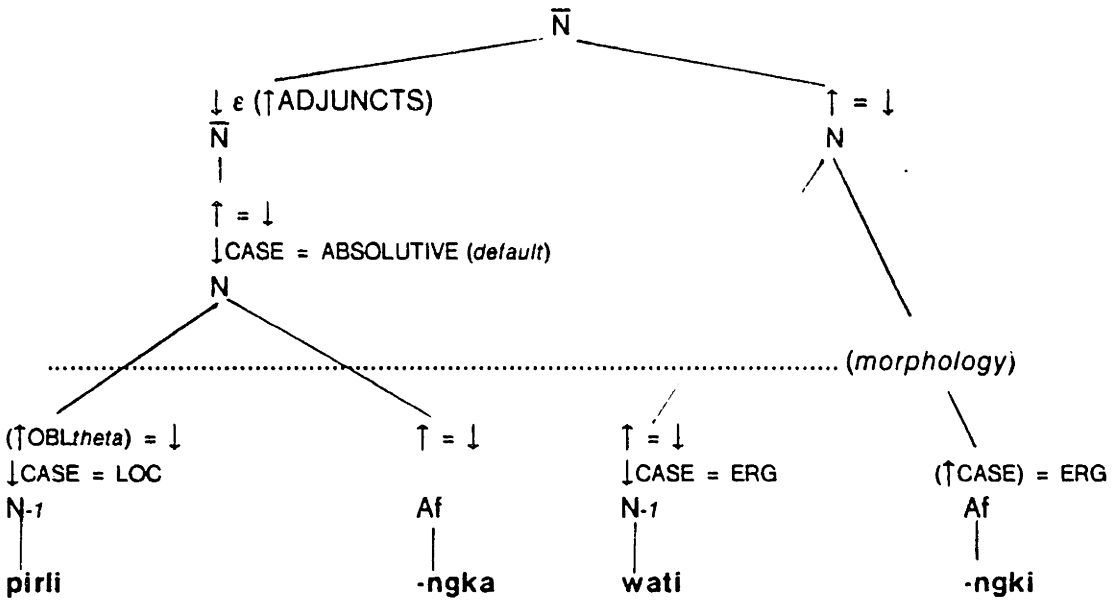
4.	**Pirli-ngka*	*wati-ngki*	-nganpa	luwa-rnu.
	rock-LOC	man-ERG	-1plex	shoot-PAST

The man on the hill shot us. [data sent by David Nash, April, 1983]

5.*	*pirli*	*-ngka*	*wita*	*-ngka*	*-rlu*
	rock	-LOC	small	-LOC	-ERG

3. is ruled out by the Adjunct Agreement Convention, because *pirli*, the OBLIQUE$_{theta}$ of the predicate LOCATIVE, has ERGATIVE case, whereas *wita*, the OBLIQUE$_{theta}$ ADJUNCT, has LOCATIVE case, and adjuncts must not disagree in case with the argument they attribute a property to. 4. and 5. are ruled out by case conflicts resulting from default case-assignment of ABSOLUTIVE. Let us examine this more closely. In 4. a LOCATIVE acts as an ADJUNCT modifying a nominal with ERGATIVE case. In 5. the whole $\overline{N}$ acts as an ADJUNCT with ERGATIVE case whose argument-taking predicate is the LOCATIVE case. Both would be acceptable if the first LOCATIVE-marked nominal had extra ERGATIVE marking. This suggests that the unacceptability of 4. and 5. is due to a clash of cases, between the ERGATIVE and the default case ABSOLUTIVE. Recall that in 3.5.2. I suggested that semantic case-suffixes differed from grammatical case-suffixes in that, while grammatical case percolates (via the equation (↑CASE) = C attached to the affix), semantic case does not percolate, unless the nominal is the functional head of the N. In neither 4. nor 5, is the nominal the functional head of the N; in 4, the case suffix is the function head of the LOCATIVE N, while in 5, the LOCATIVE N has no functional head. In 3.5.2.3. I suggested that ABSOLUTIVE case is assigned to Ns and $\overline{N}$s without case-features. The LOCATIVE Ns in 4. and 5. have no case-features, and so are assigned ABSOLUTIVE case by default. The c-structure for 4. is given in (47). (I have omitted all information about PREDs).

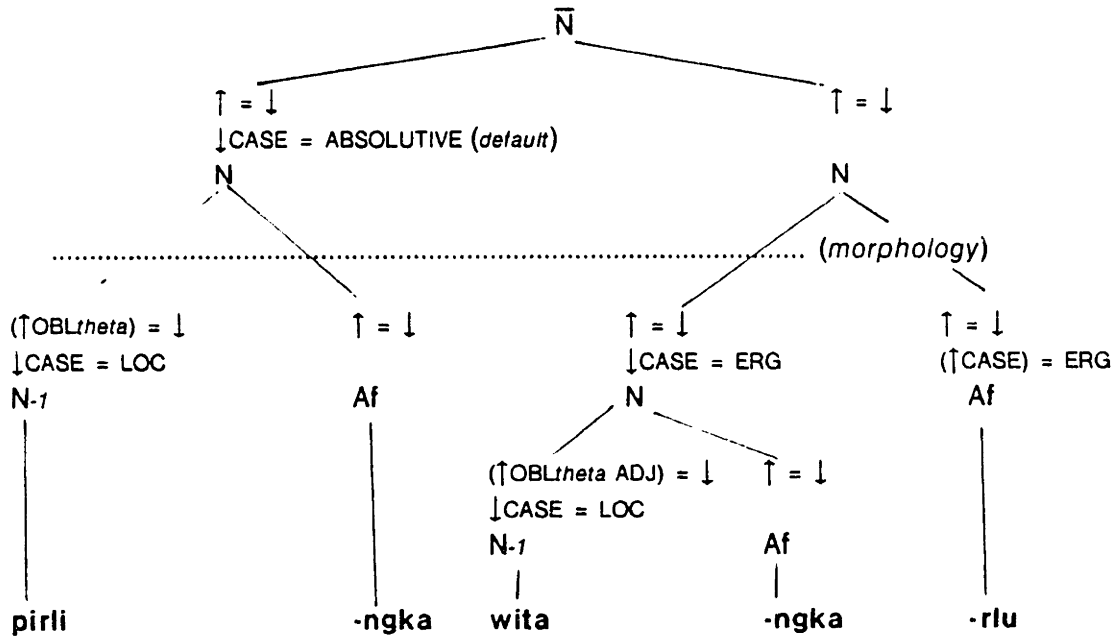
(47)



To be interpetable, *pirli-ngka* must be an ADJUNCT modifying *wati-ngki*. *Wati-ngki* has ERGATIVE case. By default assignment, *pirli-ngka* has ABSOLUTIVE case. By the Adjunct Agreement Convention, ADJUNCTs must not disagree in case with the element they modify. Therefore the f-structure resulting from (47) will be ill-formed.

The c-structure for 5. is given below.

(48)



Again *pirli-ngka*, being an N, receives ABSOLUTIVE case by the default assignment. The f-structure from this tree will be *inconsistent*, because the one function will have two case features, ABSOLUTIVE, from *pirli-ngka*, and ERGATIVE from *wita-ngka-rlu*.

That is, no case-concord rule is needed to determine agreement within nominals in Warlpiri. The independently needed principles of Adjunct Agreement, and ABSOLUTIVE case assignment provide the necessary constraints, together with the requirements of *consistency, coherence* and completeness. I list below the possible situations.

[1] N-*1* N-CASE: *Kurdu wita-ngku* 'child small-ERG (↑CASE) = ERGATIVE is attached to the ERGATIVE affix. *Kurdu*, being an N-*1*, does not receive default CASE.

[2] 2 GCNs: *Kurdu-ngku wita-ngku* 'child-ERG small-ERG' (↑CASE) = ERGATIVE is attached to the ERGATIVE affixes. Therefore default assignment of ERGATIVE case does not apply.

[3] 2 SCNs: *Pirli-ngka wita-ngka* 'rock-LOC small-LOC' Both are SCNs. Therefore Case does not percolate. Both are Ns, and will be assigned ABSOLUTIVE by default. The ABSOLUTIVEs do not class with each other.

[4] 2 DCNS:
If a DCN is used as an N or an $\overline{N}$ with the ADJUNCT function, it will receive ABSOLUTIVE by default. If, however, it is simply a single attribute, then it may well be generated as an N_{-1}, in which event it will not receive ABSOLUTIVE case. The prediction then is that, while *Kurdu-kurlu karnta-ngku* (child-PROP woman-ERG) 'woman with a child' may be acceptable as a single constituent, *Kurdu wita-kurlu karnta-ngku* (child small-PROP woman-ERG) 'woman with a small child' will not be acceptable. This has yet to be tested.

4.2.3 Summary

The rules for assigning functional equations and functional features presented so far are:

(49) $S \rightarrow AUX\ X\ X^*$
Assign grammatical functions freely in S.

(50) *Assign* $\uparrow = \downarrow$ *in* $\overline{N}$ *freely*

Assign ADJUNCT optionally to one N (or possibly $\overline{N}$*), subject to some condition on dependent tense.*

Assign ABSOLUTIVE case to any N or $\overline{N}$ *without a case equation.*

(51) *Assign in the morphology, ADJUNCT, OBLIQUE*$_{theta}$*, or OBLIQUE*$_{theta}$ *ADJUNCT, to* N^{-1} *freely. The default is to assign* $\uparrow = \downarrow$.

Assign $\uparrow = \downarrow$ *to all case-suffixes. (This follows if they are the morphological head of case-marked nominals).*

Assign $\downarrow CASE = C$ *to an* N^{-1} *when a case-suffix C is attached.*

Assign $(\uparrow CASE) = C$ *to a grammatical case-suffix C.*

4.3 Discontinuous expressions

I will first look at nominals with *AGR* case-suffixes, and then look at nominals with *ATP* case-suffixes.

4.3.1 Discontinuous expressions with *AGR* case.

As I mentioned in the introduction to this chapter, Hale (PWT) claims that, in a sentence such as (52), the modifier *wita-jarra-rlu* can have two main types of semantic interpretation.

(52) *Kurdu-jarra-rlu* ka-pala maliki wajili-pi-nyi *wita-jarra-rlu.*
Child-DU-ERG PRES-2du dog-ABS chase-NPST small-DU-ERG
a. (The) two small children are chasing the dog. *merged*
b. (The) two children are chasing the dog and they are small. *unmerged*

Following the AUX, a sequence of nominals with the same case may either form a single $\overline{N}$, and thus have the *merged* interpetation, or else form several $\overline{N}$s, and have either a *merged* or an *unmerged* interpretation, just as non-adjacent $\overline{N}$s have. When *wita-jarra-rlu* forms a single constituent with *kurdu-jarra-rlu*, it can only have the *merged* interpretation.

Since Warlpiri allows zero pronominalization for grammatical functions, *no overt* referential nominal has to be present for an ADJUNCT to modify. In (53), for example, *wita-jarra-rlu* can be interpreted with *wita* as a referential nominal *the two small ones*, or it can be interpreted as an attribute with the *unmerged* interpretation of an understood null pronominal.

(53) Maliki ka-pala *wita-jarra-rlu* paka-rni.
Dog-ABS PRES-2du small-DU-ERG hit-NPST
The two small ones are striking the dog.
They two are striking the dog and they are small. [PWT:(33a)]

I assume that differentiating between the *merged* and *unmerged* interpretations is the province of semantic interpretation. However, since semantic interpretation in LFG takes functional structure as its input, and since whether an element has, or has not, a *merged interpretation* depends in part on its c-structure position, it follows that

f-structures should represent elements, which appear in the same $\overline{N}$ as the argument which they modify, in such a way that semantic interpretation rules can give them a *merged* interpretation. This representation must be obligatory for elements in the same $\overline{N}$, and optional for elements not in the same $\overline{N}$ as the argument they attribute a property to. This forces the former to have the *merged* interpretation, and allows the latter to have either a *merged* or an *unmerged* interpretation.

I propose to use differences in the f-structure locations of ADJUNCTS to distinguish the *merged* and the *unmerged* interpretations. ADJUNCTS *inside* the f-structure of their controller will be interpreted as *merged*; ADJUNCTS *outside* the f-structure of their controller will be interpreted as *unmerged*. The difference between the two f-structures should be sufficient to allow the formalization of semantic interpretation rules creating the *merged* and *unmerged* interpretations, although I will not attempt this formalization here.[12]

I will first discuss the assignment of functions within $\overline{N}$ where the case-suffix has an *ATP* use, and where the case-suffix has an *AGR* use. I will then show how discontinuous expressions can be created by the general rule *Assign grammatical functions freely to all daughters of S*, and how ADJUNCTs can be generated inside and outside the f-structures of their controllers.

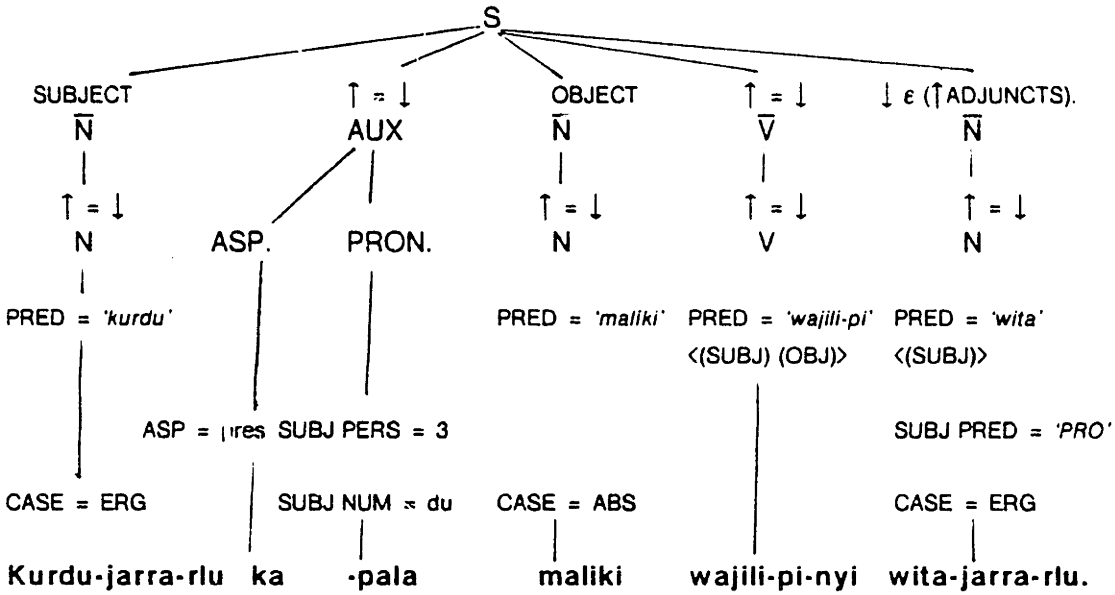
4.3.1.1 The unmerged interpretation

The c-structure and f-structure for (52) with the *unmerged* interpretation are given below.

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12. See Halvorsen (to appear) for an explicit proposal for the semantic interpretation of a lexical-functional grammar. See Andrews (1982b) for a discussion of semantic interpretation with respect to Warlpiri.

(54)



$$
\begin{bmatrix}
\text{SUBJ} & \begin{bmatrix} \text{CASE} & \textbf{ERGATIVE} \\ \text{PRED} & \textit{'kurdu'} \\ \text{NUM} & \textbf{du} \\ \text{PERS} & 3 \end{bmatrix} \\
\text{ADJ} & \begin{bmatrix} \text{CASE} & \textbf{ERGATIVE} \\ \text{PRED} & \textit{'wita'}\ \langle(\text{SUBJ})\rangle \\ \text{NUM} & \textbf{du} \\ \text{SUBJ} & [\text{PRED} = \textit{'PRO'}] \end{bmatrix} \\
\text{ASP} & \textbf{Present Imperfect} \\
\text{TENSE} & \textbf{Non-past} \\
\text{PRED} & \textit{'wajili-pinyi'}\ \langle(\text{SUBJ})\ (\text{OBJ})\rangle \\
\text{OBJ} & \begin{bmatrix} \text{CASE} & \textbf{ABSOLUTIVE} \\ \text{PRED} & \textit{'maliki'} \\ \text{NUM} & \textbf{sg} \\ \text{PERS} & 3 \end{bmatrix}
\end{bmatrix}
$$

The regular algorithm for building f-structures from annotated c-structures causes the ADJUNCT to have its own f-structure which is immediately contained within the f-structure of the sentence. Since it is outside the f-structure of the SUBJECT, semantic interpretation rules can assign it an *unmerged* interpretation.

4.3.1.2 The merged interpretation

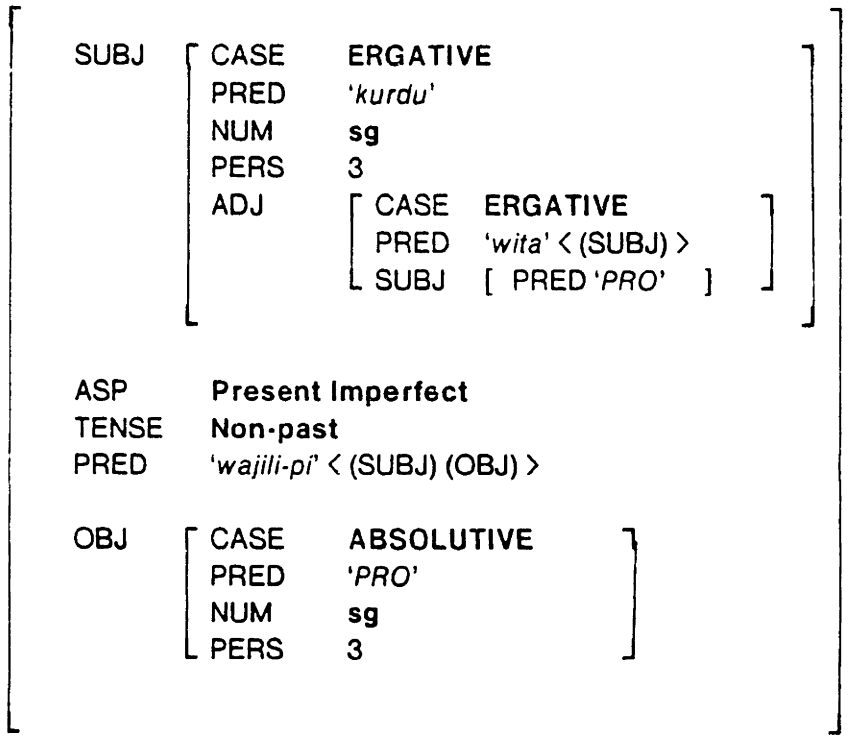
In this section, I will show how the *merged* interpretation is obtained. I will start by looking at nominals forming a single constituent which must have the *merged* interpretation, and then turn to *non-adjacent nominals* which receive a *merged* interpretation.

A sentence containing an $\bar{N}$ which can be construed as containing a SUBJECT and an ADJUNCT of that SUBJECT is given below.

(55) *Kurdu* *wita-ngku* ka wajili-pi-nyi.
child small-ERG PRES chase-NPST.
The small child is chasing it.

In 4.2.1, I gave the c-structure and f-structure for (55) (namely (11) and (12)). I repeat the f-structure here. In the c-structure given, the function SUBJECT labels an $\bar{N}$, inside which there is a head (with the equation $\uparrow = \downarrow$) and an ADJUNCT. The nodes within $\bar{N}$ are labelled by the $\bar{N}$ rule. Because the node labelled ADJUNCT is dominated by a node labelled SUBJECT, the f-structure built from this tree must have the ADJUNCT inside the f-structure of the SUBJECT. This contrasts with the f-structure for the *unmerged* interpretation, in which the ADJUNCT appears outside the subject's f-structure.

(56)



I will now show how non-adjacent nominals can receive a *merged* interpretation. Consider the following sentence:

(57) *Kurdu-ngku* ka wajili-pi-nyi *wita-ngku.*
Child-ERG PRES chase-NPST small-ERG
The small child is chasing it.
The child is chasing it and he is small.

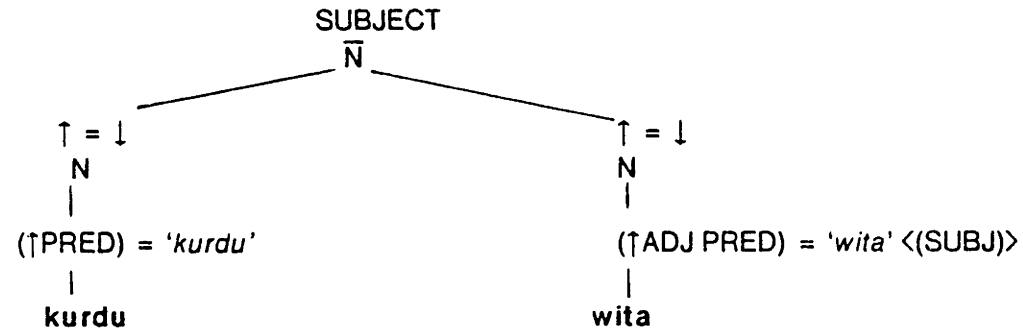
The element *wita-ngku* has been given the *merged* interpretation in the translation.

The *unmerged* interpretation, *The child is chasing it, and he is small*, is obtained by assigning *wita-ngku* the function ADJUNCT. *Wita-ngku* is then generated *outside* the f-structure of what it modifies. An ADJUNCT assigned to an N^{-1} within $\overline{N}$ labelled with a function F, by contrast, is generated *within* the f-structure of F.

A non-adjacent attribute can appear inside the f-structure of a function F *if the attribute is assigned as its label the function F.*[13] The rule *Assign grammatical functions freely* allows this.

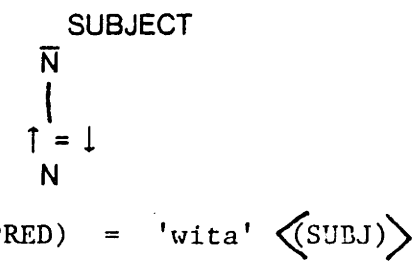
This assignment of SUBJECT to two nominals does not violate *consistency*, because one of the nominals is an ADJUNCT. As I showed in the $\overline{N}$ rule, $\overline{N}$ not only can dominate N and N^{-1} with the equation ↑ PRED = 'Y' but can also dominate an N or an N^{-1} with the equation ↑ADJUNCT PRED = 'Z' etc. If that $\overline{N}$ has itself the function SUBJECT, the node labelled (↑SUBJ) = ↓ can dominate nodes labelled with the equations ↑PRED = 'Z', and ↑ADJ PRED = 'Z'. This creates structures of the form in (58).

(58)



Non-adjacent nominals with the *merged* interpretation are simply $\overline{N}$s with some grammatical function, such as (↑SUBJ) = ↓, exhaustively dominating an N labelled with information about the ADJUNCT function.

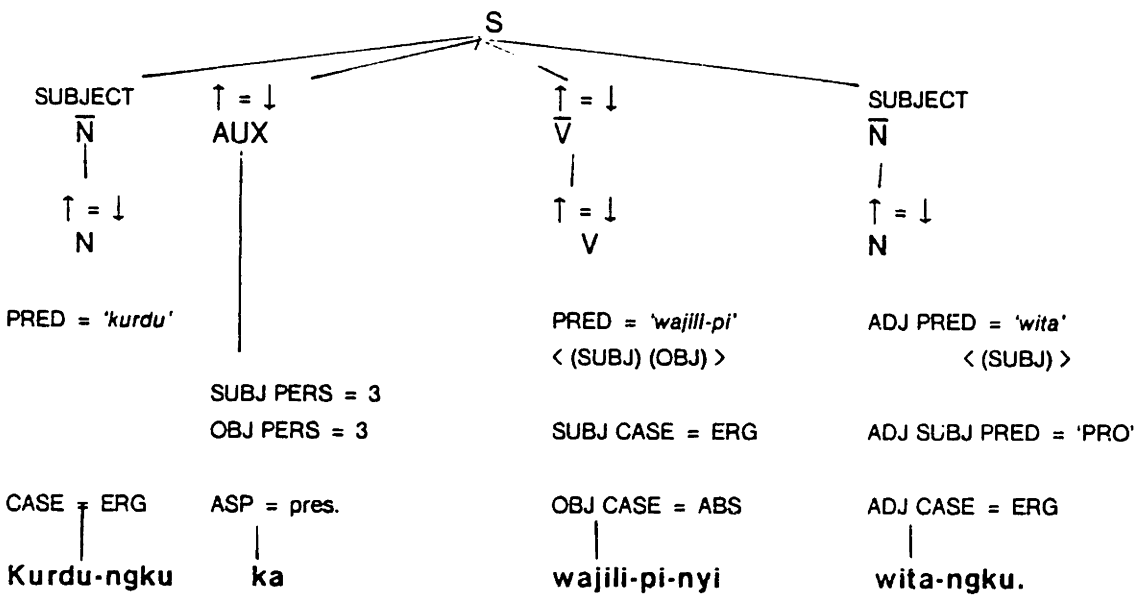
(59)



13. The solution given here was suggested to me by Ronald Kaplan, and was suggested independently in Andrews (1982b), although Andrews does not consider it necessary to make a syntactic difference between the *merged* and *unmerged* interpretations.

The c-structure tree for (57) follows:

(60)



Naturally, information about an ADJUNCT attached to a node labelled SUBJECT will be treated as information about the ADJUNCT of that SUBJECT, and will therefore be placed inside the f-structure of the SUBJECT. From such a c-structure, an f-structure will be built which is identical to that created from a c-structure tree in which the attribute is adjacent to the head (e.g. for *kurdu wita-ngku*), and forms a single constituent with it. That is the f-structure will be identical to the f-structure given in (56).

Hence, both non-adjacent nominals, and adjacent nominals, can have the same form in functional structure for semantic interpretation to operate on. Non-adjacent nominals, however, do not have to appear in the same functional structure as the nominal they are predicated of, while nominals forming a single constituent must do so.

Whether in c-structure a node labelled with any grammatical function G, (such as SUBJECT, OBJECT etc.), has to dominate a node labelled with the PRED of the functional head of that G, or whether it can exhaustively dominate a node labelled with information about an ADJUNCT of G, may be a parameter distinguishing languages.[14] In languages with discontinuous expressions, such as Warlpiri, a node labelled SUBJECT can exhaustively dominate a node labelled with information about an ADJUNCT of the SUBJECT. In English, on the other hand, a node labelled SUBJECT must dominate a node labelled with information about the PRED of the SUBJECT. A language may even have free *constituent* order by virtue of a rule assigning grammatical functions freely to daughters of S, but still disallow discontinuous nominal expressions, by virtue of requiring a functional head for each $\overline{N}$. Such a language might be Malayalam (Mohanan, 1981a, 1982c).

In conclusion, I have shown that the semantic difference between merged and the unmerged interpretations of discontinuous constituents can be reflected in functional structure by the difference between whether an ADJUNCT is generated within the f-structure of its controller (the *merged* interpretation) or outside the f-structure of its controller (the *unmerged* interpretation). The existence of *unmerged* attributes follows from the general rule assigning functions within S (*Assign grammatical function freely*) which allows any nominal to be an ADJUNCT, together with the principle that allows any argument-taking predicate to introduce a null pronominal representing a grammatical function selected by that argument-taking predicate. The existence of the *merged* attributes follows from the general rules of function assignment within $\overline{N}$ which allow any N or N^{-1} to have the equation $\uparrow = \downarrow$, and from allowing an $\overline{N}$ labelled with a function F to exhaustively dominate nodes which contain no information about F's PRED.

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14. This proposal is due to Avery Andrews.

4.3.2 Discontinuous expressions with *ATP* case-suffixes

I now turn to the situation in which a nominal N_j with an *ATP* case-suffix is predicated of a nominal with the same case which is not in the same constituent. I will only examine the situation where N_j has the function ADJUNCT; I believe that the solution can extend to nominals with *ATP* case-suffixes used as XCOMPs, although some modifications are necessary.

Consider the following sentence:

(61) Karli ka *pirli-ngka* nguna-mi *wita-ngka.*
Boomerang-ABS PRES rock-LOC lie-NPST small-LOC.
A boomerang is lying on a small rock. *merged*
A boomerang is lying on a rock, a small one. *unmerged*

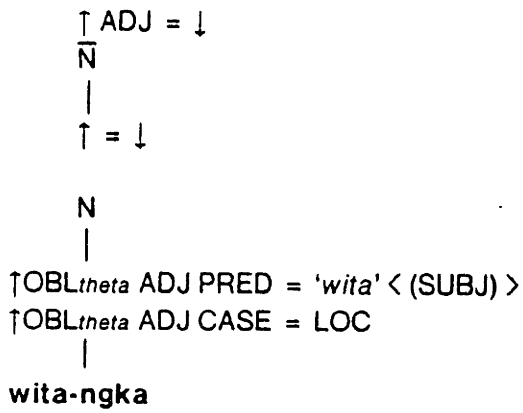
Wita-ngka can be a *merged* or *unmerged* attribute of *pirli-ngka*.

I will assume here that *ngunami* in Warlpiri does not subcategorize an XCOMP of location, and that therefore *pirli-ngka* is a locative ADJUNCT. I will further assume that *pirli-ngka* is a sentential ADJUNCT, and therefore that the argument structure for the LOCATIVE *ATP* contains no SUBJECT: *ngka* < (OBL*theta*) >

The *merged* reading *on the small rock* is obtained in essentially the same way as the *merged* reading of a nominal with an *AGR* case-suffix. Both *pirli-ngka* and *wita-ngka* are assigned the function ADJUNCT. But one of these adjuncts (say, *wita-ngka*) is *NOT* an ADJUNCT of the verb. Rather, it attributes a property to an argument internal to the other ADJUNCT, the OBLIQUE*theta* of the argument-taking predicate of that ADJUNCT.

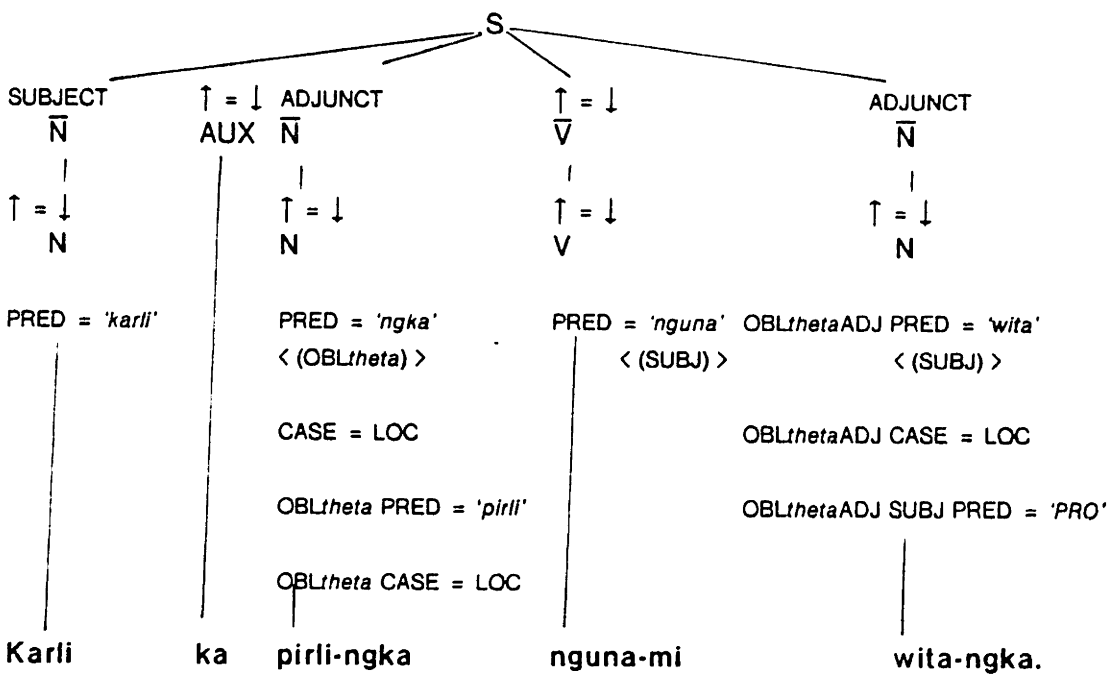
Free assignment of grammatical functions allows the assignment of the ADJUNCT function to $\overline{N}$. Free morphological assignment of the function OBLIQUE*theta* ADJUNCT allows an N^{-1} to be an OBLIQUE*theta* ADJUNCT. Since any case-suffix can act as an agreement marker, the $\overline{N}$ can dominate exhaustively a nominal which is labelled only with information about an OBLIQUE*theta* ADJUNCT.

(62)



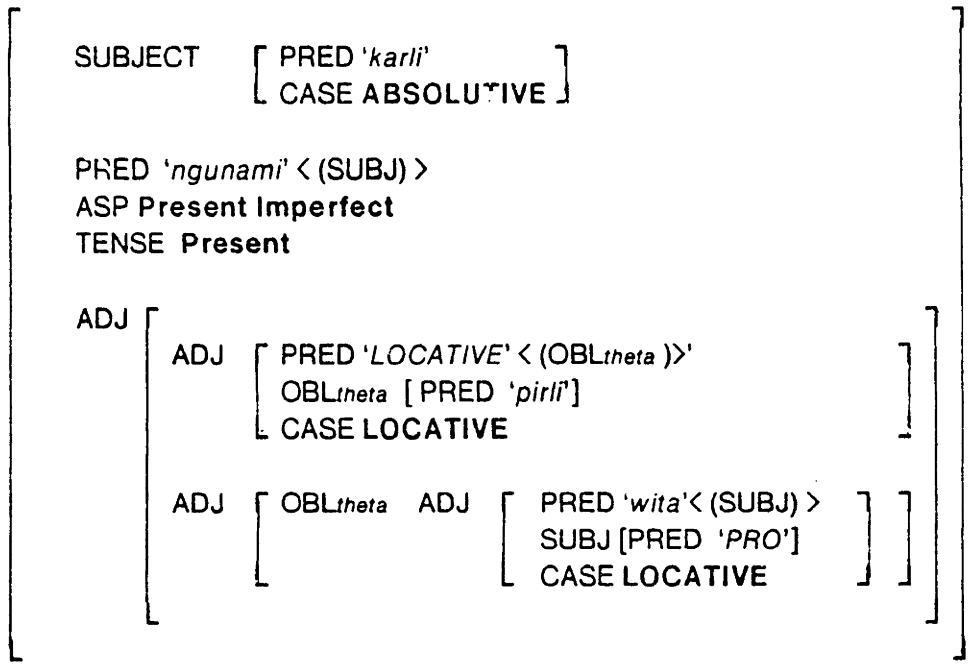
A abbreviated annotated tree for (61) follows:

(63)



An f-structure corresponding to this c-structure which is constructed according to the normal algorithm for constructing functional structures will be incoherent, as can be seen by looking at (64).

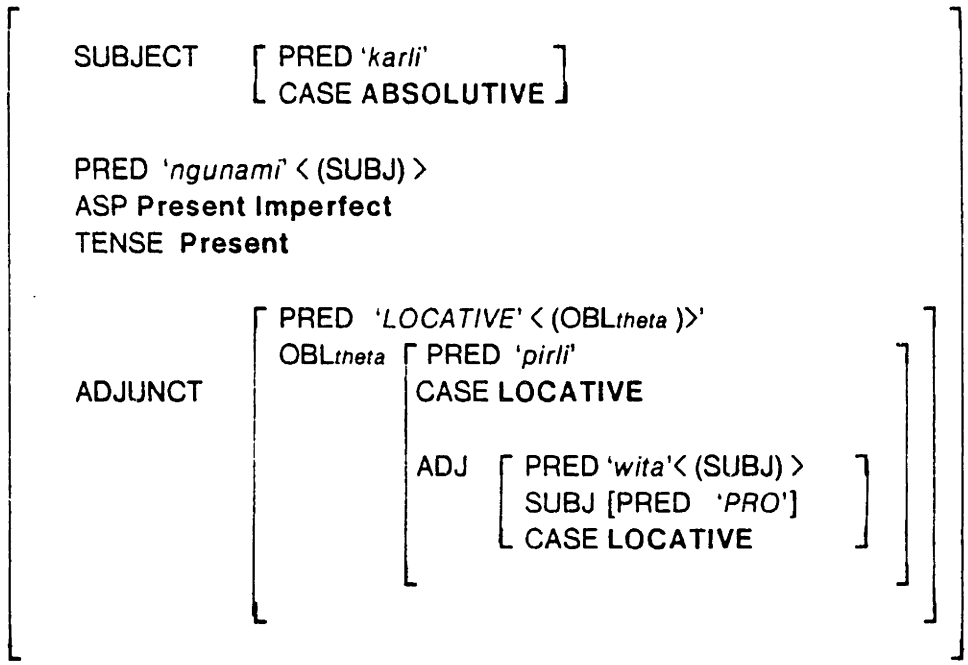
(64) *



The structure is incoherent because there is an ADJUNCT containing an OBLIQUE*theta* ADJUNCT which has nothing to modify. For a sentence containing the annotated tree just given to have a *coherent* f-structure, there must be an available OBLIQUE*theta* in the f-structure for the OBLIQUE*theta* ADJUNCT to modify. Suppose the sentence has an OBLIQUE*theta*. The OBLIQUE*theta* ADJUNCT cannot be predicated of an OBLIQUE*theta* of the sentence, because the OBLIQUE*theta* ADJUNCT is contained within an ADJUNCT. The OBLIQUE*theta* ADJUNCT can only be predicated of an OBLIQUE*theta* of that ADJUNCT. But that ADJUNCT has no OBLIQUE*theta*. However, in the set of ADJUNCTS in (64), there is another ADJUNCT present, with an OBLIQUE*theta*, namely *pirli-ngka*. The OBLIQUE*theta* and the OBLIQUE*theta* ADJUNCT have the same case, LOCATIVE, and so the *Agreement Convention* is not violated.

We need therefore to be able to construct an f-structure like the one given in (65), which *combines* the two ADJUNCTS into a single ADJUNCT.

(65)



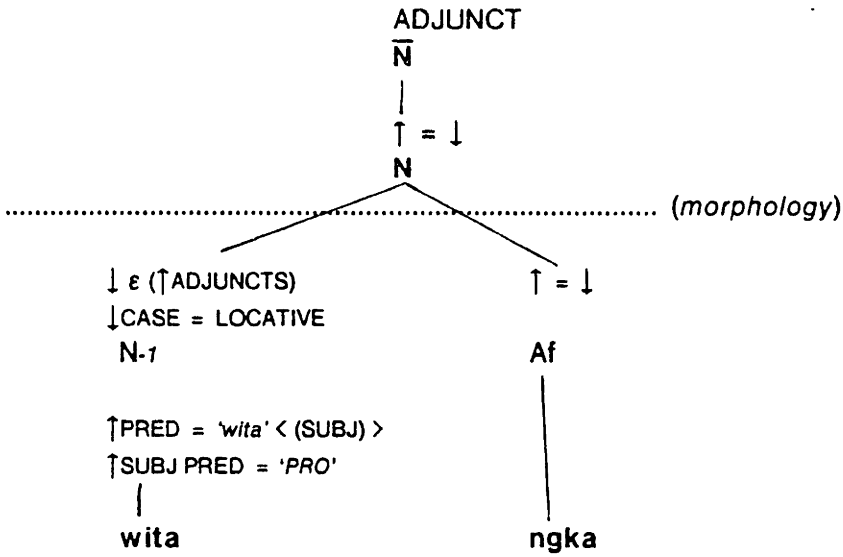
This f-structure is *not* derived by the normal algorithm for creating f-structures given in Kaplan and Bresnan (1980). However, it is a valid f-structure corresponding to the c-structure given. I will assume that the algorithm can be modified to accommodate the derivation of this f-structure.

Essentially, I am claiming that, given two ADJUNCT f-structures within the set of f-structures that provide a value for the ADJUNCT function, those two ADJUNCTS can be combined to form a single f-structure. They must be so combined, if the f-structure would otherwise violate the *coherence* condition.

Two ADJUNCTS can combine only if one of them has no predicate – otherwise *consistency* is violated. In the c-structure given in (63), only one of the ADJUNCTS immediately dominates a predicate – namely *pirli-ngka*, which has a LOCATIVE predicate subcategorizing an OBLIQUE*theta*. *Wita-ngka* dominates an ADJUNCT predicated of an OBLIQUE*theta*. In this example, since *wita-ngka* is generated inside the f-structure of the OBLIQUE*theta*, it must have the *merged* reading. But *wita-ngka* can also have an *unmerged* reading. The *unmerged* reading is also derived when *pirli-ngka* and *wita-ngka* are assigned the function ADJUNCT.

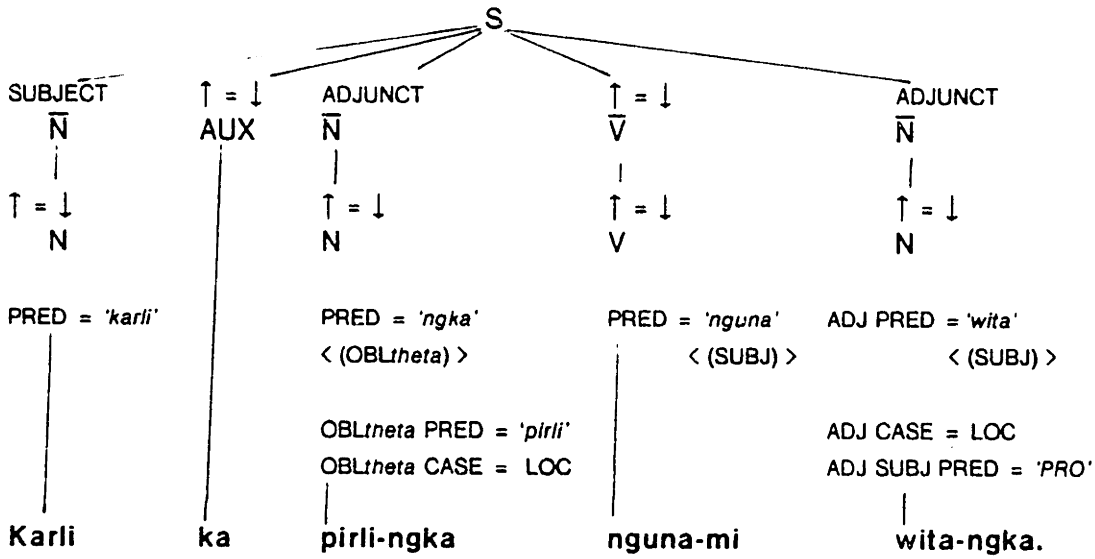
Pirli-ngka has *pirli* as an OBLIQUE*tneta*. For *wita* to receive the *unmerged* interpretation as an attribute of *pirli-ngka* (*on a rock, a small one*) it must appear outside the f-structure of the OBLIQUE*tneta*. An annotated c-structure tree is given in (66).

(66)



In effect this allows for the generation of an ADJUNCT within an ADJUNCT. The internal ADJUNCT has LOCATIVE case. The Case-marker on the internal ADJUNCT is not the predicate for the whole; the nominal is. The nominal has a PRO SUBJECT. In (67), I give a simplified annotated c-structure for the unmerged interpretation of (61), to show both the ADJUNCT *pirli-ngka*, and the ADJUNCT's ADJUNCT *wita-ngka*.

(67)



In (68) I give the ADJUNCT section of the f-structure built from this c-structure. Because the function ADJUNCT is evaluated by a set of f-structures, all the instances of ADJUNCTs are generated within a single large f-structure labelled ADJUNCT.

(68)

$$
\text{ADJ} \left[\begin{array}{ll}
\text{ADJ-}1 & \left[\begin{array}{ll}
\text{PRED} & \textit{LOCATIVE} \langle (\text{OBL}_{\textit{theta}}) \rangle \\
\text{CASE} & \text{ABSOLUTIVE (default)} \\
\text{OBL}_{\textit{theta}} & \left[\begin{array}{ll} \text{PRED} & \textit{'pirli'} \\ \text{CASE} & \text{LOCATIVE} \end{array} \right]
\end{array} \right] \\
\text{ADJ-}2 & \left[\begin{array}{ll}
\text{PRED} & \textit{'wita'} \langle (\text{SUBJ}) \rangle \\
\text{CASE} & \text{LOCATIVE} \\
\text{SUBJ} & [\text{PRED} \quad \textit{'PRO'}]
\end{array} \right]
\end{array} \right]
$$

Two ADJUNCTs are given in the set of f-structures. Both are complete and coherent. The PRO SUBJECT of ADJUNCT-2 can be anaphorically controlled by some argument with LOCATIVE case. The OBLIQUE*theta* argument of ADJUNCT-1 is such an argument. Therefore ADJUNCT-2 can be interpreted as an attribute of this argument. Since it is

generated outside the f-structure of the OBLIQUE$_{theta}$ of ADJUNCT-$_1$, it must be given an *unmerged* interpretation.

4.3.2.1 *ATP* nominals as merged attributes.

One loose end needs to be tied up. In 4.2.2. I noted that SCNs could not in general appear in the same constituent as the argument they modify, unlike DCNs. So they cannot have a *merged* interpretation from being in the same constituent as the argument they modify. The question then is, can they have a *merged* interpretation when they appear as *non-adjacent* modifiers of a nominal? Unfortunately, the evidence is unclear. It seems likely that LOCATIVE *ATP* nominals can have the merged interpretation, as (69) through (71) show.[15] But then, the LOCATIVE CAN behave like a DCN in appearing in the same constituent as the nominal it modifies. No evidence has been found to determine whether non-LOCATIVE semantic case-suffixes, such as ALLATIVE and ELATIVE, can have a *merged* interpretation.

(69) Miri + nya ka-rnalu *mawu-ngka* *kankarlarni + ji*
pubis-ABS + EMPH PRES-1plex bladder-LOC-ABS above + EUPH
ngarri-rni.
tell-NPST
The pubis is what we call the part above the bladder. [miri]

Here *mawu-ngka kankarlarni + ji* is predicated restrictively of a null pronominal, the OBJECT of *ngarrirni*.

(70) Muju + nya ka-rnalu yangka + ju *kuna-ngka* *kutu*
tailbone-ABS + EMPH PRES-1plex the-ABS anus-LOC-ABS close-ABS
ngarri-rni.
tell-NPST
Tailbone is what we call that which is near the anus. [muju]

---

15. A restrictive interpretation for certain argument-taking predicates can be obtained by suffixing the suffix *pirdinypa*, as I illustrated in 2.4.

Here, *kuna-ngka kutu* is predicated restrictively of the demonstrative *yangka + ju* which acts as the OBJECT of the verb *ngarrirni*.

(71) Kula-lpa-lu-jana yirdi-ma-ntarla wirriya-wirriya *yuwurrku-rla*
not-PAST-3pl-3pl name-CAUS-IRR boy-boy-ABS bush-LOC-ABS
karnta-karnta-rlu.
woman-woman-ERG.
Women cannot say the names of the boys in the bush (for initiation). [mamiji].

It seems likely that even this use of LOCATIVE as a *merged* attribute is highly restricted. I return to the discussion of the interpretation of semantic case in Chapter 6.

4.4 Summary

In this chapter, I have outlined a way of expressing the fact that in Warlpiri non-adjacent attributes may have the same type of semantic interpretation as attributes within the same $\overline{N}$ as the argument they modify. To do this, I first showed how to represent the assignment of functions within $\overline{N}$, and argued that this is best captured by extending the morphological assignment discussed in Chapter 3. Attributes occurring within the same $\overline{N}$ as the argument they modify will automatically be placed within the f-structure of that argument. I proposed that this position could form the basis for distinguishing between the *merged* interpretation, (which attributes within the same $\overline{N}$ as their head must have), and the *unmerged* interpretation (which non-adjacent attributes may have). I then showed how to represent non-adjacent attributes (whether attributing properties to *ATP* nominals or to *AGR* nominals), so as to allow them to have either the *merged* or the *unmerged* interpretation.

In the course of this discussion, I showed how case-concord within an $\overline{N}$ falls out of the default rules for assigning ABSOLUTIVE case. I also speculated that certain properties of derivational case-suffixes stemmed from a limited amount of recursion in the $\overline{N}$ rule.

From the discussion, it is clear that most properties of the representation of discontinuous expressions follow straightforwardly from other properties which I claim Warlpiri has. These include:

[1] The free assignment of grammatical functions to daughters of S, which permits any $\overline{N}$ to have any function F, including the ADJUNCT function.

[2] The ability for any nominal to select a SUBJECT, and introduce a null pronominal to express that SUBJECT. This permits any nominal to act as the *ATP* for an ADJUNCT.

[3] Morphological assignment of functions, which allows a word to carry information about several functions.

What distinguishes Warlpiri from free word-order languages which do not allow discontinuous nominal expressions is that Warlpiri allows non-adjacent attributes to be generated inside the f-structure of the argument which they modify. In a language such as Warlpiri, a node labelled SUBJECT need not dominate a node labelled with the SUBJECT's PRED feature. In a language such as Malayalam, it appears that a node labelled with a function F must dominate a node labelled with F's PRED.

5. Nominal predicates

5.1 Introduction

Secondary predication is a widespread process in Warlpiri grammar, with few syntactic and semantic constraints. In this chapter I will illustrate the freedom of secondary predication in Warlpiri in contrast to English. I will suggest that a number of properties of Warlpiri grammar interact to create this freedom. These include: the free introduction of null pronominals; the use of case rather than phrase structure position to determine what may be a secondary predicate, or what may be the controller of a secondary predicate; the fact that Warlpiri only has two major categories, N and V; and finally, different strategies in word-formation, and different lexical rules.

I will start by briefly reviewing the account of secondary predication given so far. In the preceding two chapters, I have shown two types of secondary predicate: nominal predication, and case-suffix predication.

When the nominal itself acts as the functional head of a secondary predicate, it attributes some quality or property to an argument of the sentence, as in (1), in which *nyurnujarra* ascribes the state of being dead to the SUBJECT of the sentence.

(1) Jarnku-wanti-ja -pala *nyurnu-jarra + ju.*
each-fall-PAST -2du dead-DU-ABS + EUPH
They each fell down dead. [ML: Num. 45]

Following Hale (PWT) and Nash (1980), I claimed that nominal predicates could have either a *merged* or an *unmerged* interpretation.

In the second type of predication, a suffix acts as the argument-taking predicate, or functional head, of a secondary predicate. The nominal to which the suffix is attached acts as the OBLIQUE_{theta} of the argument-taking predicate represented by the case-suffix. So, in (2), *wini* 'burnt-off ground' is the OBLIQUE_{theta} of the semantic case-suffix *ngka*.

(2) Ngula kala-lu *wini-ngka-rlu* kuyu + ju
that USIT-3pl burnt.ground-LOC-ERG meat-ABS + EUPH
kuwaly-paka-rnu.
bash-PAST
After that they'd hunt the game on the burnt-off ground. [NM:12]

Case-concord determines which argument an ADJUNCT is predicated of. In (2), the fact that *wini-ngka* has ERGATIVE case indicates that the controller of the ADJUNCT must also have ERGATIVE case. Similarly, in (1), *nyurnu-jarra* can be assumed to have ABSOLUTIVE case, agreeing with the understood SUBJECT of the sentence.

The representation of nominal-headed predication follows from the account of nominal-headed *matrix* clauses which I gave in 2.4. In order to act as matrix predicates, nominals must optionally select SUBJECTS (depending of course on the meaning of the particular nominal). Since nominal-headed sentences can have non-overt SUBJECTS, (e.g. *Ngarrka* 'He is a man'), nominals selecting a SUBJECT must be able to introduce a null pronominal to fill that SUBJECT. This is exactly what the rule of PRO-introduction given in 2.2.8 allows.

(3) **Rule of PRO-introduction**

If an argument-taking predicate selects a grammatical function G, it may optionally introduce a null pronominal to represent that function, by introducing a PRED feature equation: (↑G PRED) = 'PRO'.

Therefore, any nominal can introduce the equation (↑SUBJ PRED) = 'PRO'.

Furthermore, the general rule of function assignment, *Assign grammatical functions freely to all daughters of S*, allows any nominal to be assigned any function. If a nominal selects a SUBJECT, and introduces a null pronominal for that SUBJECT, its SUBJECT can be anaphorically controlled by some argument of the sentence. Assigning the function ADJUNCT to a nominal which selects a SUBJECT automatically creates *unmerged* ADJUNCTS. Assigning other functions, (including the function OBLIQUE_{theta} ADJ) to nominals selecting SUBJECTs optionally creates *merged* ADJUNCTS, depending on the morphological assignment of functions to the nominal.

ATP case-suffixes, like any argument-taking predicate, can optionally introduce null pronominals for grammatical functions which they select. If the *ATP* case-suffix introduces a null-pronominal SUBJECT (by means of the equation (↑SUBJ PRED) = 'PRO'), then the *ATP* case-suffix can be anaphorically controlled by some argument of the sentence, since, like the nominal predicates, *ATP* case-suffixes can have the ADJUNCT function.

To express the fact that an ADJUNCT must agree in case with its controller, I assumed a general convention on the well-formedness of f-structures, ensuring case-agreement.

These principles for the representation of secondary predication in Warlpiri predict that it should be relatively free of syntactic constraints, that is, that any nominal anywhere in a sentence should be capable of acting as a predicate, provided that the meaning of the nominal is appropriate. *Position* is irrelevant to determining what may be a secondary predicate, and what its controller may be.

In this chapter, I will try to show that this prediction is correct. However, I want also to claim that two other factors contribute to the lack of syntactic, and semantic, constraints on secondary predicates in Warlpiri. One factor is categorial: there are only two categories, N and V. Hence, the apparent categorial restrictions on secondary predicates visible in English do not manifest themselves in Warlpiri. The other factor concerns lexical entries. In English, secondary predicates are often expressed as XCOMPs, which form part of the lexical entry of a verb. Since they are part of the lexical entry, the verb can place semantic and syntactic restrictions on the XCOMP. Warlpiri, however, makes much less use of the function XCOMP. Secondary predicates are either realized as ADJUNCTs, or are incorporated morphologically into verbs as preverbs; i.e. verbs and secondary predicates form complex verbs.

Since secondary predication is an area which has received comparatively little attention within the literature on generative syntax,[1] I will outline some important syntactic

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1. See Chapter 1 Footnote 29 for some references.

and semantic constraints on secondary predicates in English. Only by comparison can one really appreciate the difference between Warlpiri and English.

The chapter is organized as follows. In 5.2., I outline the use of *phrase structure position* in English in determining certain properties of secondary predicates, and compare it to Warlpiri. I also discuss classification of secondary predicates in terms of *use* and *meaning*. In 5.3, I review apparent categorial restrictions on secondary predicates in English, which I claimed in Chapter 1 can be attributed to the semantic interpretation of *categories*, and show that, although Warlpiri does not have the categorial distinctions, one of the semantic restriction seems to hold. In 5.4, I discuss the different strategies in English and Warlpiri for expressing resultative and depictive attributes, including the role of the lexicon.

5.2 Phrase structure position

Phrase structure position is important in three respects in English. First, what *function* a secondary predicate can have, including XCOMPs and ADJUNCTS, is determined by phrase structure position. Second, position determines in part the *semantic interpretation* of secondary predicates acting as ADJUNCTs. Third, the *controller* of an ADJUNCT is determined primarily by position.

5.2.1 Phrase structure position and XCOMPs in English

The XCOMP function is assigned on the basis of phrase structure position. The position immediately following the OBJECT (or OBJECT 2 if there is one) is assigned the XCOMP function,[2] as I mentioned in 1.3.1.2.

---

2. A consequence of the association of a position with a function is that elements directly following the OBJECT, such as intransitive prepositions, tend to be interpreted as XCOMPs, even though it is often unclear what the state predicated of the OBJECT actually is. In the sentence *He broke the engagement off* , there is a vague sense that the engagement is somehow *off*. In Warlpiri, by contrast, there is no position which gets routinely associated with predication.

$$\begin{array}{lcccc} VP \rightarrow & V & (NP) & (NP) & (XP) \\ & \uparrow = \downarrow & (\uparrow OBJ) = \downarrow & (\uparrow OBJ\ 2) = \downarrow & \uparrow XCOMP = \downarrow \end{array}$$

This is exemplified in: *The children kept the dog amused*, where *amused* is an XCOMP predicated of the OBJECT *the dog*.

Since XCOMPs are associated with only one phrase structure position, neither their semantic interpretation nor their controller can be determined by phrase structure position. The interpretation is determined by the verb. For instance, in (4) a. the XCOMP *to be weak-willed* represents, as the thing known, the present state of an object (*the King*), while in (4) b, the XCOMP represents as the object of desire, the future state of an object (*the King*).

(4) a. Strafford knew the King *to be weak-willed.*
b. Parliament wanted the King *to be weak-willed.*

The difference in interpretation of the XCOMP depends on the verb. Similarly, the controller of the XCOMP is determined by the verb. Thus, the verbs *promise* and *persuade* have the same c-structure representation; in both, the predicate acting as the XCOMP immediately follows the nominal acting as the OBJECT. But the lexical entry for *promise* states that the controller of the XCOMP is the SUBJECT, whereas lexical entry for *persuade* states that the controller of the XCOMP is the OBJECT.

(5) a. Parliament persuaded the King *to execute Strafford.*
b. The King promised Parliament *to execute Strafford.*

Warlpiri has very few XCOMPs indeed, and position appears to be irrelevant to determining whether a secondary predicate is an XCOMP. I will return to the discussion of XCOMPs in 5.4.

5.2.2 Phrase structure position and ADJUNCTs

ADJUNCTs in English have several uses, and represent a number of different types of semantic relation. as (6) illustrates.

(6) That man, *in the corner over there*, is one of my closest friends.

(7) *In such a run-down city*, you can hardly expect her not to plan for the revolution.

(8) a. He was shot *on a hill called Babylon.*
b. Solomon Grundy was born *on Monday.*

In each of these sentences the PP has the same type of semantic relation, namely *location*. However, the use is different in each example. In (6), the PP is used to identify a particular person. In (7), the PP gives the reason for an action. In (8) the PP is more transparent; it simply sets the location of the event in time or space.

I will concentrate here on ADJUNCTs which are predicated of arguments, ignoring uses such as those in (8), in which the ADJUNCT is predicated entirely of the event. The two uses that I will be most concerned with are *appositional* (as in (6)) and *circumstantial* uses (as in (7)).[3] The semantic relations I will be most concerned with are *equative* relations, in which one element is *equated* with another, and *attributive* relations, in which a property is attributed to an element. However, in 5.2.3.3.1 I will briefly discuss certain other semantic relations which play a more important role in Warlpiri secondary predication than in English secondary predication.[4]

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3. The term *circumstantial* is due to Halliday, 1967.
4. As far as I can tell, ADJUNCTs seem only to involve semantic relationships which demand some degree of identity (including class membership) between the two related items. A major type of semantic relationship mentioned in Lyons (1977) *semantic opposition* [antonymy (gradable opposition), converseness (non-gradable e.g. husband/wife), complementarity (non-gradable e.g. male/female), privative (absence/presence of property), equipollent (positive properties: male/female)] is apparently not used for ADJUNCTS.

Appositionals include both secondary predicates which *identify* referents (i.e. equate a referent with some known element), and secondary predicates which *attribute* properties to arguments. I call the former *identifying apposition* and the latter *attributive apposition*. They are illustrated in (9) and (10).

(9) We are sitting at a table with Jerome Zipkin, *the man-about-town*. The New Yorker 11/29/82

(10) (...)I had to depend on my own creative intelligence, *modest though I am sure it was*. The New Yorker 11/29/82

In (9) a secondary predicate identifies *Jerome Zipkin* as some known *man-about-town*, while in (10), a secondary predicate attributes a particular property to the speaker's intelligence.

Circumstantials are mostly used with attributive relations; they ascribe a property to an argument of the sentence, but at the same time qualify the proposition expressed by the sentence.[5] They provide the time (11), reason (12), or condition (13), etc for the proposition.

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5. Appositionals can also be used to provide new information which is indirectly relevant to the proposition expressed in the sentence. However, the relevance to the proposition is less explicit than with circumstantials. In i., the appositional *something secondary in his eyes* does not provide a reason, condition, time etc for the proposition. Instead, it is used to explain the use of the word *contrast*. The writer is contrasting the loss of the spirit of Zionism, which was primary, with the survival of the institution, which was secondary.
i. *By contrast, the institutional framework of Zionism, something secondary in his eyes, survived. The Economist* 20/3/82
Similarly, in ii, giving the number of the Soviet casualties allows for an evaluation of the statement that they are not high.
ii. *Soviet casualties, at around 3,000 killed, have not been high. The Economist* 26/12/81

(11) You shouldn't have taught John the alphabet *so young*.
(John was young) *time*

(12) John didn't arrive, *drunk as usual*. (He didn't arrive at all) *reason*

(13) People are so strange. I couldn't sell the books *cheap*; they wouldn't buy them. But when I jacked up the price, they bought them all up. *conditional*

However, the *reason* and *condition* readings[6] are sufficiently peripheral not to be usable as replies to questions about time, reason or manner. For instance, in the sentence *Fond of Russians, Jack went to Moscow*, *Fond of Russians* gives an implicit reason for his journey. But it cannot act as a answer to a question about his reason for going.

(14) a. Why did Jack go to Moscow?
b. **Fond of Russians*, he went there.
c. *He went to Moscow *fond of Russians.*

(These examples are due to J.R. Ross).

Syntactically, *appositionals* can be predicated of any argument, whether an argument of a verb, or an argument of a preposition.[7] (15) shows an attributive appositional *unburdened by abstract thought* predicated of the object of the preposition *by*. (16) shows two identifying appositionals, *Mr Johannes Virolainen*, and *the speaker of the parliament* predicated of the object of the preposition *to*.

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6. For some reason the *time* circumstantials are more readily questioned.
When did you teach John the alphabet?
?I taught him the alphabet young.

7. This distinguishes them from *depictive attributes*, which, as Williams (1980) shows, cannot in general be predicated of the objects of prepositions:
**I presented him with the possum dead.*

(15) (..) the dreams are not nearly so unsettling or effective as the dreams devised by Lewis Carroll, *unburdened by abstract thought*, for Alice.

(16) Mr Ahti Karjalainen. the man the Russians would most like to see as President, lost by a humiliating two-to-one vote to his old rival, *Mr Johannes Virolainen, the speaker of the parliament.* The Economist 5/12/81

Appositionals follow[8] the argument they are predicated of (with the possible exception of the SUBJECT).[9]

Further evidence that apposition is associated with the structural position in English comes from the fact that *appositionals* cannot be predicated of null pronominals. Consider the following sentences:

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8. Usually *appositionals* immediately follow the nominal they are predicated of, but occasionally, when sentence-final, they can be predicated of arguments that do not immediately precede them.

?Yesterday, Lucy kissed John for the first time, the man she had been in love with for years.

Yesterday, Lucy kissed John, the man she had been in love with for years, for the first time.

?They told Tom Dooley to leave, a man who had worked for the company all his life.

They told Tom Dooley, a man who had worked for the company all his life, to leave.

9. J.R. Ross provided the following example which shows this.

Friend of many presidents, Billy Graham likes jelly beans.

**Why don't we invite friend of many presidents, Billy Graham?*

They decided to invite Billy Graham, friend of many presidents.

The following sentence is unacceptable because the *appositional* predicated of the OBJECT, *the chairman of the company*, is not adjacent to it.

**They gave the chairman of the company the bad news, John Brown.*

They gave the chairman of the company, John Brown, the bad news.

Similarly, an *appositional* predicated of the OBJECT cannot appear initially.

**John Brown, she married your lover.*

She married your lover, John Brown.

Nor can an *appositional* predicated of the SUBJECT intervene between the OBJECT and the OBJECT 2 in a ditransitive.

**Mary gave him, your wife, the bad news.*

Mary, your wife, gave him the bad news.

(17) a. I signalled to the men, *the ones in white hats*, [to leave].
b. I signalled [to leave].
(arbitrary PRO as SUBJECT of *to leave*)

(18) a. *I signalled [*the ones in white hats* to leave.]
(only marginally acceptable with referential reading).
b. *I signalled [to leave, *the ones in white hats*.]
c. *I signalled [to, *the ones in white hats*, leave.]

(17) shows that the verb *signal* can have an overt argument controlling the infinitive *to leave*, or an understood null pronominal with abritrary reference acting as the SUBJECT of *leave*. In the former case, the overt argument can have an appositional modifier, *the ones in white hats*. (18) shows that the null pronominal with arbitrary reference cannot have an appositional modifier. (19) shows that whereas the controller of *translate* can have an appositional modifier, the understood null pronominal SUBJECT of *translate* cannot have such an appositional modifier.

(19) a. His brother, *a Presbyterian elder*, wants [to translate *Job*].
b. *His brother wants [to translate *Job*, *a Presbyterian elder*].
c. *His brother wants, [*a Presbyterian elder*, to translate *Job*.]
d. *His brother wants [to, *a Presbyterian elder*, translate *Job*].

Whether the null pronominal has an arbitrary referent as in (18), or is SUBJECT-controlled, as in (19), it cannot control an appositional. Recall that in Chapter 1 I mentioned Principle 6, the proposed Null Element Constraint, which effectively prevents there from being null elements (such as empty NPs) in constituent-structure. If, as seems likely, appositionals in English have c-structure positions dependent on some other c-structure position (the position of the nominal they modify), then it is not surprising that null pronominals, which have no c-structure position, cannot control appositionals.[10]

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10. This remark is only intended to give a direction in which one might find a solution, because exactly how appositionals are represented in c-structure is an open question for most current linguistic theories.

Circumstantials, in contrast to *appositionals*, are usually predicated of the SUBJECT, as in the sentence *John didn't arrive, drunk as usual.* Sometimes circumstantials can be predicated of other arguments, as in the sentence *You shouldn't have taught John the alphabet so young.*

Unlike *appositionals*, *circumstantials* mainly appear initially, although they can appear finally with a more restricted range of interpretations, as the following examples illustrate.

(20) a. *Ever willing to see the other point of view*, John was never involved in protracted arguments. REASON
b. *John was never involved in protracted arguments, *ever willing to see the other point of view.*

(21) a. *Young*, John could never stand honey. TIME
b. ??John could never stand honey *young.*
(better: John could never stand honey *when young*.)

(22) a. *A broken man*, John died in a Dili gutter. STATE
b. John died in a Dili gutter, *a broken man.*

(23) a. *Cheap*, the books might sell. CONDITION
b. The books might sell, *cheap.*

These examples show that the CONDITION and STATE readings are possible finally, but

that REASON and TIME readings are not. I have no explanation for these differences,[11] but the *position* of circumstantial ADJUNCTs is clearly important in determining their interpretation.

Position is also important for determining what argument a circumstantial can be predicated of. Sentence-initial ADJUNCTS are almost always predicated of the

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11. As these examples show, the importance of word-order position in determining the semantic interpretation of English adjectives in all positions cannot be over-estimated. For instance, Dixon (1982b) and Teyssier (1968) observe that the order of prenominal adjectives is determined by their semantic type. Teyssier writes:

> *"..adjectives denoting essential qualities intrinsically part and parcel of the object described tend to stand close to the noun whereas those denoting accidental and, so to speak, 'existential' qualities are placed further from the noun, so that we normally say: a naughty little girl, a beautiful French girl, a wise old man, a rich old maid, a charming young lady."* p.232-3

Another important semantic classification reflected in adjective position is the distinction observed by Bolinger (1967) between *referent-modification*: (*The boy is eager*) and *reference-modification* (*an eager student* – 'someone who is eager qua student') (Bolinger: 15). The latter rarely occur as the complement to a copula,

*That is the precise reason I refused. *The reason is precise.*

*He is the lawful heir. *The heir is lawful.*

The ability of an adjective or participle to appear post-nominally also depends on its semantic type. Bolinger (1967), Teyssier (1968) and James (1979) observe that single adjectives or participles in post-nominal position tend to denote a temporary occasion, or action, or a quality which can suddenly be lost or acquired, as opposed to adjectives denoting characteristic qualities.

> *"..the only river navigable is unambiguously occasion, the only navigable river unambiguously characteristic. Similarly with Who were the guilty people? which characterizes and classifies, vs. Who were the people guilty which relates the guilt to an occasion;"* Bolinger (1967) p.4.

SUBJECT.[12] as the unacceptability of (25) shows.

(24) a. *Pregnant*, she refused Bill.

b. ??*Pregnant*, Bill refused her.

(24)b. is unacceptable because the preferred controller of *pregnant* is the SUBJECT, and the interpretation is semantically incongruous.[13] Compare (24) with the following sentences in which the ADJUNCT is sentence-final, and can be predicated of either Lucy or the gynaecologist.

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12. Bresnan (1982a) argues that sentence-initial ADJUNCTS of certain categories in English, like XCOMPs, are *open functions*, XADJUNCTs. The relation between the SUBJECT of the XADJUNCT, and the particular function the XADJUNCT is predicated of, is considered to be *functional control*. The control equation expressing this functional control is attached to a phrase structure position, the adjective phrase preceding the SUBJECT.

Williams (1980) argues that *c-command* is the relevant restriction – ADJUNCTS can only be predicated of nominals which c-command them. The only NP c-commanding a sentence-initial ADJUNCT is the SUBJECT, and so this provides the illusion of obligatory control. This account does not directly provide for circumstantial ADJUNCTS predicated of the OBJECT, because these circumstantials are, arguably, not in the VP. Under Williams' account, in a sentence such as the following, for the ADJUNCT *exhausted etc* to modify the OBJECT, it must be in the VP, despite the heavy intonation break separating it from the sentence.

i. *They showed Lucy into her room, exhausted and in need of a good night's sleep.*

In fact, the control of sentence-initial ADJUNCTS is more complex. With respect to sentence-initial adjuncts, in fact, although SUBJECT control is preferred, it is sometimes possible to get control by a non-SUBJECT. For instance, in ii. the participle is controlled by the possessor *my*.

ii. *But in such an event, knowing the boy as intimately as I do, my anxiety would be entirely for the snake.* [P.G. Wodehouse. *The Inimitable Jeeves.*]

Stump (1981) gives many examples of dangling participles, and others can be found in Visser (1970). In cases of control by a non-SUBJECT, both category and semantics are important. Participles and prepositional adjuncts are more likely to allow non-SUBJECT control than nominals and adjectives. The semantic constraints are not well understood. In ii. *anxiety* is not a possible SUBJECT for *know*. But in iii., *car* is also not a possible SUBJECT for *know*, and yet the sentence seems much worse.

ii. ?*Knowing the road as well as I did, my car never skidded once.*

13. With heavy topicalization it is perhaps possible to have *pregnant* modify the OBJECT

(25) a. The gynaecologist met Lucy, *pregnant for the ninth time.*

b. Lucy met the gynaecologist, *pregnant for the ninth time.*

To conclude, position is clearly important in English for determining which secondary predicates may be ADJUNCTs, what the controller of an ADJUNCT may be, and what kind of ADJUNCT a secondary predicate may be. Let us now look at the situation in Warlpiri.

5.2.3 Position and ADJUNCTs in Warlpiri

In Warlpiri, there are no positional tests to determine which ADJUNCTs are used as *appositionals*, and which as *circumstantials*. It seems that any nominal ADJUNCT (allowing for semantics) can have either use. Furthermore, it seems that ADJUNCTS in Warlpiri can have a wider range of interpretations than English, although a number of these are mediated through the use of clitics. I will first look at straightforward appositional uses and circumstantial uses, which are based on semantic relationships not dissimilar to those used in English for secondary predication. Finally, I will briefly illustrate some of the more unusual interpretations of ADJUNCTS in Warlpiri, and the use of clitics.

5.2.3.1 Apposition in Warlpiri

An ADJUNCT can attribute a property to an argument, as in (26) in which a number of appositionals attribute straightness to the SUBJECT of *ngurrju-ngunami*. Or an ADJUNCT can identify a property, as in (27), in which an identifying property, *Nujurntiritiri-wardingki-ki* is in apposition to a coordinate NP.

(26) Maja-rni kuja-ka-rlipa kurlarda yungu ngurrju-nguna
straighten-NPST REL-PRES-1plin spear-ABS REAS good-lie-NPST
wirlki-wirlki-wangu, jukarurru tarnnga + juku, parumarra.
crooked-PRIV-ABS straight-ABS always + STILL straight-ABS
'We straighten our spears to make them lie properly, with no bends, completely straight, straight.

(27) Nyampurra-rlu + ju ka-lu karɖu-ma-ni jukurrpa *yapa-ku*
these-ERG + EUPH PRES-3pl make-NPST law-ABS Aboriginal-DAT
manu kardiya-ku Nujurntiritiri-wardingki-ki.
and European-DAT Northern Territory-inhabitant-DAT
These people make laws for the Aboriginals and the Europeans, for the people living in the Northern Territory. [MKJ: 2]

ADJUNCTS used as *appositionals* can be predicated of any argument, just as in English. (28) and (29) show apppositional modifiers predicated of the OBJECT. (In (29), there are two appositionals.)

(28) Wirinkirri ka-lu yapa-ngku kiji-rni, kuja-ka-lu
spindle-ABS PRES-3pl person-ERG throw-NPST REL-PRES-3pl
purdurru luwa-rni, *wirriji* – – wirinkirri-rli.
human.hairstring-ABS shoot-NPST hairstring-ABS spindle-ERG
The people throw the spindle, when they spin human hair string, hairstring – – with the spindle. [luwarni]

(29) Nyurruwiyi kala-lu ngurrju-ma-nu *nali* yangka
olden.days USIT-3pl good-CAUS-PAST stone.knife-ABS the
kanti, junma pamarrpa yarltiri...
knife-ABS knife-ABS stone-ABS white-ABS...
Formerly they used to make a stone knife, that stone knife, a knife of white stone.. [nali]

ADJUNCTs used as appositionals are not only predicated of nominals with *AGR* case-suffixes, as in the preceding examples. They can also be predicated of nominals with *ATP* suffixes. In (30), the nominal *ngulya* is repeated with a qualifying modifier, and this $\bar{N}$ stands in apposition to the LOCATIVE *ngulya-ngka*. (31) is another example of a LOCATIVE used as an appositional. (32) and (33) show identifying appositionals predicated of a DCN with PROP case. (34) shows an attributive appositional predicated of a nominal with ERGATIVE case used as an instrumental.

(30) Walya-wana + mipa ka yuka, *ngulya-ngka* yangka ka
ground-PERL + ONLY PRES enter-NPST burrow-LOC the PRES
nyina, *ngulya nyanungunyanungu-wangu-rla...*
sit-NPST, burrow his-PRIV-LOC
It just goes into the ground. It stays in a hole in the ground, a hole that is not its own. [minyinjirri]

(31) *Turaki witapardu-rla* kapu-lu ya-ni, *mirni-kanjayi-rla.*
truck-ABS small-LOC FUT-3pl go-NPST, this size-LOC
They will be going on a small vehicle, one this size. [mirni-kanjayi]

(32) Nyampu ka-rna yirra-rni manngi-nya-nja-karra-rlu
this PRES-1sg put-NPST think-see-INF-SSCOMP-ERG
Jilpirli-wana-kurlu, Jakamarra-kurlu.
Jipirli-PERL-PROP Jakamarra-PROP
Thinking about him, I am telling this (story) about the one (buried) at Jilpirli, Jakamarra. [MLJ]

(33) Ngula-jangka + ju ka-rlijarra wilypi-ma-ni *narnngu-kurlu-rlu*
that-SOURCE + EUPH PRES-1duex emerge-CAUS-NPST hook-PROP-ERG
watiya wita-kurlu-rlu.
tree-ABS small-PROP-ERG
After that we take out the grub with a hook, with a little piece of wood. [narnngu]

(34) *Pakipaki-rli. yangka wiri-ngki* ka-lu jarnti-rni,
adze.type-ERG the big-ERG PRES-3pl trim-NPST
With the adze, the big one, they trim it, [pakipaki]

As (30), (31) and (33) show, an appositional does not have to be adjacent to the nominal it is predicated of. Similarly, in (35), *jukurrpa* intervenes between the DATIVE argument, and the nominal predicated of that argument.

(35) Nyampurra-rlu + ju ka-lu kardu-ma-ni *yapa-ku manu*
these-ERG + EUPH PRES-3pl make-NPST Aboriginal-DAT and
kardiya-ku jukurrpa *Yajuraliya-wardingki-ki.*
European-DAT law-ABS Australia-inhabitant-DAT
These people make laws for the Aboriginals and the Europeans, for the people living in Australia. [MKJ: 2]

In fact, appositionals do not even have to modify overt nominals; they can modify null pronominals. In (36), *wiyarrpa-ku* 'poor thing' is in apposition to an understood null pronominal Adjunct DATIVE 'you', which is registered in the AUX.

(36) Karija, yapa-kari-rli marda-ngku larra-katu-rnu
I don't know person-OTHER-ERG PROB-2sg split-tread-PAST
wiyarrpa-ku.
poor.thing-DAT
I don't know, somebody must have trampled and split it (spearthrower) on you, poor thing. [larra-katirni]

From these examples it is clear that an ADJUNCT does not have to be adjacent to a nominal in order to be predicated of it. Final position is a favoured position for appositionals, but it is not essential. This freedom to interpret an ADJUNCT in any position as an appositional predicated of an argument with the same case distinguishes Warlpiri from English.

5.2.3.2 Circumstantials in Warlpiri

As in English, ADJUNCTs can be used to give the reason or circumstances surrounding an event. In (37), the SUBJECT's sickness is the cause of his vomiting. In (38), *Japangardi* is predicated of the non-overt SUBJECT, and is given as the reason for the use of the term '*ngarrkapanji*'. In (39) *laninji* 'cowardly' is predicated of the SUBJECT, and is given as the reason for the SUBJECT's failure to ride a horse. In (40), the fact that the SUBJECT has not eaten meat for a long time is given as the reason for an action.

(37) *Nyurnu* ka-npa yurlkulyu-pardi-mi.
sick-ABS PRES-2sg vomit-rise-NPST
Being sick you are vomiting. [yurlkulyu-pardimi]

(38) *Japangardi-rli* + nya ka-rna-jana 'ngarrkapanji'-paji-rni.
Japangardi-ERG + EMPH PRES-1sg-3pl 'ngarrkapanji'-call-NPST
I, being a Japangardi, call them 'ngarrkapanji' [pajini.]

(39) Kula-lpa nantuwu-rla wirriya warrka-karla *laninji*
NEG-PAST horse-LOC boy-ABS climb-IRR coward-ABS
– – wanti-nja-kujaku.

– – fall-INF-ADMON
The boy can't get up on a horse because he's scared – – he might fall. [laninji]

(40) Kuyu yi-ka-rna-ju paka-karla *miyi-jangka-rlu*
meat-ABS REAS-PRES-1sg-1sg hit-IRR food-SOURCE-ERG
liwirnpa-rlu.
meat.starved-ERG
I should kill some game as I'm meat-starved from (so much) vegetable food. [liwirnpa]

(41) shows two ERGATIVE nominals, (including a nominal marked with the derivational case-suffix *warnu* (ASSOCIATIVE)), being given as a reason:

(41) (..)ngula kajika-pala-nyanu ngarri-rni 'lampanilyka'
that POT-du-refl call-NPST coinitiate-ABS
– *yarlpurru-rlangu-rlu* *yangka* *kurdiji*
age-mate-E.G.-ERG the circumcision.ceremony
jinta-warnu-rlu + yijala.
one-ASSOC-ERG + ALSO
Then they will call each other "lampanilyka" – being agemates from the same circumcision ceremony. [lampanilyka]

In (42) the ADJUNCT *wankaru-rlu + wiyi*, which is predicated of the SUBJECT, gives the time when an action took place.

(42) Kirda-nyanu-kirda-nyanu-rlu kala-lu-nganpa *wankaru-rlu + wiyi,*
father-KIN-father-KIN-ERG USIT-3pl-1plex alive-ERG + THEN.
yujuku ngurrju-ma-nu tarnnga-ngku.
house-ABS good-CAUS-PAST forever-ERG
Our fathers when they were alive used always to make shelters for us. [Nash, 1980]

These examples also show that there is no fixed position in which an ADJUNCT is interpreted as a circumstantial, (although the sentence-final position is quite common, as (39), (40) and (41) show). In (38) the circumstantial is initial, and in (42) it follows the AUX. Nor does position determine which argument the circumstantial can be predicated of. (43) and (44) show that a circumstantial can be predicated of an OBJECT. In the first clause of (43), the ADJUNCT *wita* is sentence-medial, and in the second clause, *wita* is sentence-initial. In both clauses it is predicated of the understood OBJECT.

(43) (..)tumaji yi-npa *wita* ma-nu. *Wita* -npa
too REAS-2sg small-ABS take-PAST. Small-ABS -2sg
yampi-ya.
leave-IMP
You took her too young. Leave her as she's young. [BWJ]

(44) Yampi-ya +ju *yakayaka* ka-npa-ju *murrumurru* *jiti-rni.*
leave-IMP *-1sg* *sore-ABS* *PRES-2sg-1sg* *sore-ABS* *irritate-NPST*
Don't touch me as I am sore and you are hurting me. [jitirni]

These examples, (and also (41) and (40)) show that the circumstantial can be predicated of a null pronominal, just as appositional modifiers in Warlpiri can be.

More than one *circumstantial* can occur in a sentence. (45) has two *circumstantial* ADJUNCTS, one predicated of the SUBJECT and the other of the OBJECT, both giving a reason for the action.

(45) *Miyalu-miyalu-rlu* kurdu nyanungunyangu paka-rnu *kulupanu.*
stomach-stomach-ERG child-ABS her-ABS hit-PAST fighting-ABS
She hit her child who was fighting because she was concerned about him. [miyalu]

(The stomach *miyalu* is frequently used in expressions involving emotions).

5.2.3.3 Other interpretations

I have shown above that Warlpiri uses the *identifying* and *attributive* semantic relations. To give an adequate account of possible interpretations of secondary predicates in Warlpiri is well beyond my knowledge of Warlpiri. Here, I will briefly illustrate two important factors in determining interpretation. The first consists of three semantic relations which relate nominals, and the second of *clitics.*

5.2.3.3.1 Semantic relations

The three semantic relations I refer to are *hyperonymy* (and its limit, *synonymy*), which covers the hierarchical grouping into classes, (thus a *dog* is a hyponym of *animal*), the *part-whole* relation, and the *actual-potential* relation.

The classification of certain kinds of nominals by their membership of a larger group is very important. For instance, for animals and birds, it is very common to include the word for animal (or meat) , *kuyu*, as an ADJUNCT; for delicacies, the word for delicacy, *pama*, is often included, for seeds, the generic word for seed, *ngurlu*, is often included, etc. The ADJUNCT may be *unmerged*, as in (46) and (47), or *merged* as in (48).

(46) *Wampana* -lu-ngalpa *kuyu* luwa-ka!
wallaby-ABS -pl-1plin meat-ABS shoot-IMP
Shoot us a wallaby! [luwarni]

(47) - - *pama* marda ka paka-rni *jurlarda.*
delicacy-ABS PROB PRES chop-NPST native.honey-ABS
- - - he is perhaps chopping out sugar-bag. [pakarni]

(48) *Kuyu nyanungu kumulyurru,* luwa-rni ka-rnalu
meat the budgerigar-ABS shoot-NPST PRES-1plex
watiya-rlu (...)
stick-ERG
Those budgerigars, we pelt them with sticks ... [luwarni]

(49) Yapa-ngku ka-lu *kuyu jilkaparnta* nga-rni.
person-ERG PRES-3pl meat-ABS echidna-ABS eat-NPST
People eat echidnas for meat. [jilka-parnta]

The generic may even be used as a reason (i.e. as a *circumstantial*), as in (49). Echidnas generically are classified as *kuyu* 'meat', and this sentence stresses the function of their generic classification: they are meat, and so they are eaten as meat.

A second classification that is relevant is the *part-whole* relation. A proper treatment of this would require an extensive account of its interaction with the syntax, in particular with the use of the DATIVE for a possessor. I refer the reader to Hale (1981, and to appear) for details.

In English, to express the idea that an action affects a bodypart of a person, one can use the possessive.

(50) a. I pinched John's arm to attract his attention.
b. I pinched the elephant's trunk to awaken it.
c. I tapped the teapot's spout to dislodge the tealeaves.

Or, with verbs of contact such as *hit*, one can use a special locative construction:

(51) a. I pinched John on the arm to attract his attention.
b. ?I pinched the elephant on the trunk to awaken it.
c. ??I tapped the teapot on the spout to dislodge the tealeaves.

(The degree of animacy of the object affects the acceptability of the locative construction.) I assume that in these constructions the *whole* acts as the OBJECT of the verb, and the *part* acts as an ADJUNCT predicated of the OBJECT, which takes the form of a locative construction.

In Warlpiri, a natural way of expressing similar meanings is to use the *part* as an ADJUNCT, predicated of the whole, and thus having the same case. In (52) and (53), the action of the verb affects a *part* of a being. Both the *part* and the *whole* have ABSOLUTIVE case. I assume that the *whole* fulfils the selectional requirements of the verbs *pajirni* 'cut' and *parljirni* 'wash' for an OBJECT, and that the *part* is an ADJUNCT predicated of the whole. The analysis resembles that of the locative construction in English.

(52) *Puluku* *wirriya* ka-lu *kurlurrpa* paji-rni jakumanu-rlu
bullock male-ABS PRES-3pl testicle-ABS cut-NPST stockman-ERG
The stockmen cut off the bulls' testicles..[pajirni]

(53) Kapi-rna ngapa ma-ninj-i-ni yungu-rna parlji-rni
FUT-1sg water-ABS get-INF-LAT-NPST REAS-1sg wash-NPST
kurdu *rdaka*.
child-ABS hand-ABS
I am going to fetch water in order to wash the child's hands. [parljirni]

In (54), a copula verb of stance and its complement *narntirnpari* 'curled' are predicated of the SUBJECT *janganpa* and its tail. I assume the tail has the function ADJUNCT. (55) is a similar example.

(54) *Janganpa* ka nyina *ngirnti* *narntirnpari.*
possum-ABS PRES sit-NPST tail-ABS curled-ABS.
The possum has a curled tail. [narntirnpari]

(55) Mulunyku-karri ka *wanarri-jarra* *wuurnpa* + lku.
together-stand-NPST PRES leg-DU-ABS narrow-ABS + THEN
He is standing with his legs together. [mulunyku]

In (56) and (57) both the *part* and the *whole* are inanimate, and have *ATP* semantic case-suffixes.

(56) Mirrirdi ka-rna-lu ngarri-rni ngapa, kuja-ka
mirrirdi-ABS PRES-1sg-3pl call-NPST water-ABS REL-PRES
nguna-mi *watiya-rla* *wilypiri-rla.*
lie-NPST tree-LOC tree.hollow-LOC
'Mirrirdi' is what we call the water which lies in the holes in trees. [mirrirdi]

(57) Ngapa ka winji-rni *ngami-kirra* *miyalu-kurra.*
water-ABS PRES pour-NPST water.carrier-ALL stomach-ALL
She pours the water into the hollow part of the wooden water-carrier. [miyalu]

Interestingly, if the *whole* is animate, and the affected *part* does not bear a grammatical case, but rather a semantic case, the *whole* often receives DATIVE case. In (58), an overt DATIVE nominal is present. In (59), it is expressed by a DATIVE clitic *rla*, and in (60) by a reflexive clitic.

(58) Kurdu wita ka-rla *ngatinyanu-ku* parntarri
child small-ABS PRES-DAT mother-DAT crouch-NPST
purturlu-rla.
back-LOC
The child crouches on its mother's back. [parntarrimi]

(59) *Milpa-kurra* *-rla* julyamarda-yu-ngu Yankirri-rli.
eye-ALL DAT throw.dirt-PAST emu-ERG
Emu threw dirt into his eyes. [milpa-parnta]

(60) Kamina-kamina-rlu kala-lu-*nyanu* wantawanta yirra-rni
girls-ERG USIT-3pl-refl red.ant-ABS put-NPST
ngapurlu-rla *mirnpirri-rla*.
breast-LOC nipple-LOC
Young girls used to put the red ants onto their own breasts, onto the nipples [mirnpirri]

This construction is difficult to analyse, because here, the *part* is fulfilling the selectional requirements of the verb, and the *whole* has a different case. This contrasts with the previous examples, in which the *whole* arguably fulfils the selectional requirements of the verb, and the *part* is an ADJUNCT to the *whole*. Therefore an alternative analysis is required for the DATIVE possessor construction. I have no suggestions for this.

The second semantic relation to be discussed is the *actual-potential* distinction. In Warlpiri, as in many Australian languages, the relation between some thing and what may potentially be made of that thing is an important classification of things. The observation that Australian Aboriginal languages make significant use of the actual-potential relation is well-known. Perhaps the first mention occurs in O'Grady (1961). He gives the following pairs:

actual	potential
animal/bird	meat
firewood	fire
lie	sleep
hit-with-fist	kill
hit-with-missile	kill
scratch	dig/create-hole

Evans (1982) also comments on this semantic tradition. Other instances include:

leaf	shade
tree	spear
cloud	water/rain
sick	dead

Bodyparts often have several meanings which appear to be related in a somewhat similar fashion:

kuna	'anus, excrement'
mawu/ngupala/pajaji	'bladder, urine'
lampunu/ngapurlu	'breast, milk'
jangarnka	'chin, whiskers'
langa	'ear, understanding'
miyalu	'stomach, emotions'
waninja	'throat, sexual desire'
lirra	'mouth, noise/language'
laja	'shoulder, load'

The fact that several synonyms (e.g. *mawu, ngupala* and *pajaji*) have the same dual function shows that the relationship is a real conceptual relationship.

Certain types of trees, for instance, are potentially spear, shields, water-carriers etc. In (61) *manja* wood is potentially a shield, and so 'shield' *mirta* is predicated of the OBJECT, *manja*. (62) is a similar example.

(61) Ngaju, *manja* ka-rna paka-rni *mirta + ju.*
I-ABS, mulga-ABS PRES-1sg chop-NPST shield-ABS + EUPH
As for me, I am going to cut down a mulga tree for a shield. [mirta]

(62) Kajika-rnalu *kurlarda* paji-rni-rra *wiinpiri.*
POT-1plex spear-ABS cut-NPST-THERE spearwood-ABS
We can go and cut some spear-wood for spears. [pajirni]

5.2.3.3.2 **Clitics**

The type of semantic relation denoted by an ADJUNCT may be further specified through the use of *clitics*, as I mentioned in 2.4.1. Warlpiri has a large number of such *clitics*. I will briefly illustrate three types, the clitic *rlangu* E.G. which exemplifies, *piya* LIKE which creates similes (see 3.6.), and the temporal relation clitics *lku* THEN and *wiyi* BEFORE.

In the previous section I have shown how a nominal denoting the *superordinate class* to which a second nominal belongs can be used as an ADJUNCT of that second nominal. What if we want to represent the reverse relationship, that is, use a *hyponym* of a class as an ADJUNCT of a nominal denoting that class? One way of doing this is with the clitic *rlangu* 'for example' which is illustrated in (63). It indicates that the element to which it attaches (which need not be a nominal; it can be a verb) is an *example* of something.

(63) Malpa milpa-kurlu ka-lu waraly-waraly-karri-mi *watiya-rla*
pod-ABS seed-PROP-ABS PRES-3pl hang-stand-NPST tree-LOC
pirliyi-rlangu-rla.
acacia-E.G.-LOC
Pods full of seeds hang down all over trees like the Acacia cuthbertsonii. [malpa]

Suppose that one nominal bears a relation to another nominal which is NOT a relation of hyponymy, synonymy, part-whole, or actual-potential. Occasionally, a plain nominal can act as an ADJUNCT in such circumstances. In (64) *mininirli* is predicated of *jujungku*, meaning *in the shape of, under the form of*:

(64) *Minini-rli* *juju-ngku* kalaka-rla yuka-mi yapa-kurra
mouse-ERG devil-ERG ADMON-DAT enter-NPST person-ALL
miyalu-kurra.
stomach-ALL
Under the form of a mouse an evil spirit can enter a person's stomach.. [minini]

(Note that in (64) it is only context which tells us that the evil spirit is in the form of a mouse, rather than that the mouse is in the form of an evil spirit.)

Normally, however, when a nominal has no semantic relation to the nominal it is predicated of, and a comparison of form or actual function is being made, the nominal formative *piya* is used. Thus in (65) the 'whipsnake' is neither generically nor potentially a spear; it just moves like a spear.

(65) (...)ngulaju ka *kurlarda-piya* rurruny-nguna.
that + EUPH PRES spear-LIKE-ABS speed.by-NPST
(The whipsnake) speeds like a spear. [parnkami]

In (66) the mountain devil lizard is, by classification, neither potentially nor generically a comb, and so *piya* is used.

(66) Nyurruwiyi, kala-lu-nyanu yapa-ngku marnilpa
old days. REM.PAST-3pl-refl aboriginal-ERG hair-ABS
rarraly-ma-nu mirnirri-rli + ji, ngulaju
smooth-CAUS-PAST mountain-devil-ERG + EUPH that
kumu-piya-rlu-ju.
comb-LIKE-ERG + EUPH

In the olden days, Aboriginal people used to straighten out their hair with a mountain devil - like a comb. [mirnirri -m.d.]

(The *piya* nominal agrees in case with what it modifies.)

Piya creates nominals which are in themselves comparisons[14] or similes.

(67) *Yuwarli-piya* kala parntarri-ja.
house-LIKE-ABS REM.PAST crouch-PAST
It (raintime shelter) would stand like a building. [parntarrimi]

(68) Wirriya ka *ngaju-piya* wangka-mi.
boy-ABS PRES I-LIKE-ABS talk-NPST
The boy talks like me. [Kesteven]

(69) Yarrkurla ka nyina *palya-piya* marna-ngka.
Yarrkurla-ABS PRES sit-NPST resin-LIKE-ABS grass-LOC
'Yarrkurla' is like a resin on the spinifex grass. [mula]

---

14. Kesteven (1975) gives some very complex examples in which the conjunction of *piya* and the PRIVATIVE is used as a comparative.

Ngaju -rna ngurrju-ma-nu yuwarli wiri wati-piya-wangu-rlu.
I-ABS -1sg good-CAUS-PAST house-ABS large-ABS man-LIKE-PRIV-ERG
I made a bigger house than the man did.

The third set of clitics to discuss are the two temporal clitics *lku* THEN and *wiyi* BEFORE.[15] Nominals, unlike verbs, do not have time references. Therefore, to set the time at which the state described by the nominal predicate is true, with respect to some other time period, some other mechanism must be used. The clitics *lku* and *wiyi* are such a mechanism. *Lku* asserts that the secondary predicate is true at the time of the event or state denoted by the matrix predicate. *Lku* often implies that at some earlier stage the state described by the secondary predicate did not hold, as in (70) and (71):

(70) *Wa!yka + lku* -rna nguna *ngurrju-ABS + lku.*
cool-ABS + THEN -1sg lie-NPST good-ABS + THEN
I am cool now and feel better. [PP: 11]

(71) Yakarra-pardi-nja-rla ka nyina-mi warlu-wana *ngurrju + lku.*
awake-rise-INF-SEQ PRES sit-NPST fire-PERL good-ABS + THEN
After getting up, (the sick man) sits by the fire, feeling well again. [NK: 13]

In the following example, *kuyu wiri-kirli-lki* (note that this is a complex adjunct) 'having a lot of meat' is predicated of the OBJECT at the time of the asking.

(72) Kula-ju kuyu-rlangu yu-ngu kuja-rna payu-rnu *kuyu*
NEG-1sg meat-E.G.-ABS give-PAST REL-1sg ask-PAST meat
wiri-kirli-lki,...
big-PROP + THEN
She didn't give me any meat or anything when I asked her even though she had a lot of meat at the time [mulyu-lirrija]

The clitic *wiyi* asserts that the state described by the secondary predicate held at some time *t* prior to some other time t_i, which can be the time of speaking, but does not

15. See Laughren (1981a) for a discussion of these clitics with ample illustrations.

have to be.[16] In (73), *wiyi* is attached to a temporal LOCATIVE.

(73) Kula-lpa-npa nya-ngu yangka *mirawarri-wangu-rla + wiyi*
not-PAST-2sg see-PAST the mirage-PRIV-LOC + BEFORE
wurnturu, pirli-rlangu, ngaka ka kankarlu-ma-ni mirawarri-rli.
far rock-ABS-E.G. just PRES up-CAUS-NPST mirage-ERG
Before when there was no mirage, you never saw it in the distance, the hill for example. Only when a mirage lifts it up (do you see it). [mirawarri]

5.2.4 Summary

Phrase structure position in English is important for determining the function of a secondary predicate (ADJUNCT or XCOMP), and for determining the controller of an ADJUNCT, as well as for determining the use (appositional or circumstantial) and the semantic interpretation (*reason, condition* etc) which an ADJUNCT can have. (Adjacency and c-structure presence are required for appositional uses; sentence-initial or sentence-final position is required for circumstantials).

In Warlpiri, however, phrase structure position has little bearing on the function, or controller, or use, or interpretation of secondary predicates. There is no set position for XCOMPs as opposed to ADJUNCTs. The controller of an ADJUNCT is determined by case, not by position, and need not even be overt in the c-structure of the sentence. The range of possible semantic interpretations is determined by existing semantic classifications, such as *part-whole* and *actual-potential*, as well as by clitics.

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16. *Lku* and *wiyi* also appear on verbs as well, with much the same meaning differences. An illustration of this is provided by the following sentences from the *Survey*:

Jarntu-ngku kurdu yarlku-rnu yungu yula-ja + wiyi.
dog-ERG child-ABS bite-PAST REAS cry-PAST + BEFORE
The dog bit the child because he cried.

Jarntu-ngku kurdu yarlku-rnu yungu yula-ja + lku.
dog-ERG child-ABS bite-PAST REAS cry-PAST + THEN
The dog bit the child so that he cried.

In the first example *wiyi* sets the time of crying before the time of the matrix, while in the second, *lku* sets the time of crying as starting with the biting and probably continuing on.

5.3 Category

In English, the *category* of an element is intimately bound with its semantic interpretation. (See 1.3.1.2.1 and 1.3.4.1). I will discuss just one example, which is relevant to Warlpiri, because Warlpiri shows a similar semantic restriction. Only a very small number of nominals can be *resultatives* on their own:

(74) a. I cooked the meat **a cinder.*
b. I cooked the meat *a pale shade of brown.*

I claimed that this distinction is not a restriction on category, but on semantic interpretations available for categories (as the acceptability of (74)b indicates). Following Stump (1981) and Carlson (1977), I claimed that nominals cannot, in general, represent particular states, (that is, they are *individual-level predicates* and not *stage-level* predicates) and that therefore they cannot represent resultatives, because a resultative denotes a resultant state. An entity nominal such as *cinder* can be used in combination with prepositions such as *into* and *to* to denote a resultant state:

(75) I cooked the meat *to a cinder.*

Prepositions like *into* and *to* express the idea of transition and direction which is demanded by resulting states, and the presence of these prepositions sanctions the appearance of entity nominals.

A second restriction on the category of resultatives is that participles cannot appear:

(76) I cooked the meat **burning/?scorched.*

I suggested that this restriction was not categorial, but semantic, namely that aspectual conflicts rule out the appearance of the participles.

In Warlpiri, the one category *Nominal* covers a wide range of semantic interpretations, from nominals which are almost always predicative, such as the locative nominals, experiencer predicates and active nominals, to nominals which are almost always used referentially, such as pronominals. (See 2.4). The category *Verb* is used syntactically only as an expression of argument-taking predicates, and, furthermore, is

restricted to finite clauses.[17] Because the *Nominal* category may have many different kinds of interpretation, restrictions, whose semantic nature is blurred in English by the obviousness of the categorial restrictions, show up clearly. For instance, Warlpiri has a construction with the TRANSLATIVE suffix *karda* which translates constructions with the English resultative, although it is much freer. The TRANSLATIVE suffix *karda* in Warlpiri has no semantic restriction parallel to the English restriction on entity nominals, but does appear to show a restriction parallel to the aspectual restriction on participles.

Most of the examples of N + *karda* that I have found, have nominals which are best translated as adjectives in English.

jungarni	correct, right	*murrumurru*	sick
karalypa	smooth	*ngurrju*	good
kirrirdi	long	*pinpinpa*	flat and thin
kuntukuntu	fat, in good shape	*pirrjirdi*	heavy, hard
lalka	dry, dessicated	*pulya*	quiet, softly
lalypa	flat, spread out	*rdakulpa*	concave
larrilpi	blade, sharp	*walyka*	cool
linji	dry	*wiri*	big
lirrkirlirrki	bare, leafless	*wita-wita*	small
manya	soft	*wurdungu*	silent, dumb
mara-mara	cinder, black	*yapulyu*	moist
maru	black	*yirnmi*	cooked, ripe
murntu	cooked, done		

Thus, *karda* can create resultatives expressed by adjectives in English, such as *He shot him dead*,

(77) Kala-rnalu-nyanu mapa-rnu *maru-karda* marrkirdi-rli,
USIT-1plex-refl rub-PAST black-TRANSL plum-ERG,
purranja-warnu-rlu.
cook-INF-ASSOC-ERG
We used to paint ourselves black with the plum when it had ripened. [marrkirdi]

---

17. Nominalized verbs can be derived from verbs, and can act as secondary predicates.

But there are a few examples of *karda* on nominals which translate most readily as nominals in English.

jirrama	two	*rdilypirrpa*	hole
panu	many	*wini*	burnt-off ground
rurrpa	hole, perforation, open	*yulyurdu*	smoke

(78) Manja ka-rnalu tiirl-paka-rni *jirrama-karda* yangka
mulga-ABS PRES-1plex open-cut-NPST two-TRANSL the
karli ngurrju-ma-ninja-ku.
boomerang-ABS good-CAUS-INF-DAT
We split the mulga into two to make boomerangs. [jirrama]

(79) *Panu-karda* ka marlu + ju paji-rni: mirntilyi,
many-TRANSL PRES kangaroo-ABS + EUPH cut-NPST back-ABS
ngurlju, jurru, kantumi.
sides-ABS head-ABS rump-ABS
He cuts the kangaroo into many pieces: the back, the sides, the head, the rump. [pajirni]

(80) *Rurrpa-karda* + ju karli-ngki luwa-rnu.
hole-TRANSL + EUPH boomerang-ERG hit.with.missile-PAST
He hit a hole into it with a boomerang. [rurrpa]

((80) also shows that no overt nominal is needed as a controller for the *karda* nominal). I assume that entity nominals such as *jirrama* 'two' or *rurrpa* 'hole' are able to appear in the resultative construction because the *karda* suffix acts in some respects like the prepositions *to*, and *into* in English, in allowing a *stage-level* or state interpretation.

Let us consider now the restriction on aspect. The syntactic and semantic analogues of participles in English are nominalized verbs. Interestingly, no instances

have been found of *karda* on a bare nominalized verb.[18] I will argue in 6.5 that the time-reference of nominalized verbs depends on that of the matrix verb, and that the complementizer suffix determines the particular dependency – whether the action precedes, is concurrent with, or follows that action denoted by the main verb. I call this property the *dependent tense* property, and assume that it is a property both of nominalized verbs and of their complementizer suffixes.[19] An explicit semantic representation of the time-reference of nominalized verbs has yet to be given. However, the evidence suggests that we should look for properties in common with the progressive and past participles in English, which also block resultatives.

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18. Instead of using a nominalized verb with *karda*, the normal practice is to paraphrase, either with a non-finite clause with the PURPOSIVE, or with a finite clause having the AUX base *yungu* which denotes *reason, purpose,*. In this case the resultant state is often expressed by a nominal compounded with the INCHOATIVE *jarrimi*.

Janyungu	*ka-lu*	*wanta-kurra*	*yirra-rni,*	*wanka*	*yungu*
tobacco-ABS	PRES-3pl	sun-ALL	put-NPST,	raw-ABS	REAS
linja-jarri-mi..					
dry-INCH-NPST					

They put the tobacco into the sun, so that from being unready it will dry.

19. I have found one example of *karda* following a DCN suffix, *wangu*, on a nominalized verb.

Purdanya-nja-wangu-karda	*-jana*	*langa + ju*	*muku-paju-rnu.*
hear-INF-PRIV-TRANSL	-3pl	ear-ABS + EUPH	all-cut-PAST

He cut off their ears so that they could not hear. [JK]

Nominalized verbs with the DCN *wangu* are somewhat freer than other complementizers; they can be used as matrix predicates, for example. In 6.5, I will suggest that, if a *ATP* has the feature [dependent tense], it cannot occur as the matrix predicate. I propose that *wangu* only optionally has this feature. When it does not have this feature, it is free to act as a matrix predicate, and presumably to have *karda* attached. I must assume that the negative specification of *wangu* for dependent tense takes precedence over the positive specification of the nominalized verb *purdanyanja* for dependent tense.

Notice that occasional examples of *wangu* suffixed to a nominalized verb and preceding the INCHOATIVE suffix *jarrimi* have been found:

nguna-nja-wangu-jarrimi 'lie-INF-PRIV-INCH' Stop lying down.

Semantically, the resultant state denoted by *karda* does not seem too dissimilar from the resultant state denoted by *jarrimi*, the INCHOATIVE.

5.4 The Lexicon

The third type of constraint on secondary predication consists of lexical constraints placed on secondary predicates. The only kinds of secondary predicates on which lexical constraints can be placed are XCOMPs and OBLIQUEs, because these are the only secondary predicates selected by *ATP*s. Using secondary predicates as OBLIQUEs is a somewhat marked phenomenon; see 6.2.2.3 for some possible examples.

English and Warlpiri differ in the range of allowable XCOMPs. In English, there are two main types: those that are idiosyncratically selected by verbs, such as *happy* in *They kept her happy* and those that are introduced by optional general lexical rules. (See 1.3.1.2). Examples of the latter include the resultatives, the directional complements for verbs of motion, and the depictives. XCOMPs in English show a variety of lexical restrictions. Verbs may place semantic and functional constraints on their XCOMP; for instance, *persuade* requires an XCOMP denoting an action under the control of the understood SUBJECT: (**I persuaded John to resemble his unborn son*). Similarly, lexical rules can be sensitive to semantic and functional properties of the verbs. For example, the rule adding resultative XCOMPs in English is sensitive to the semantic class of the verb: the verb must denote an action which produces an effect on the OBJECT, and it must have no inherent change of location (Endpoint). This rules out sentences such as **I shot at John dead; *Medusa saw the hero into stone* and **Midas touched the trees gold.* Furthermore, the resultative XCOMP rule requires the SUBJECT of the XCOMP to be an OBJECT of the verb, whether surface (as in transitives) or underlying, as in *unaccusatives*.[20] This constraint rules out sentences such as **The bullocks ate the grass fat*, in which the resultative attribute *fat* is predicated of the Transitive SUBJECT.

---

20. Unaccusative verbs consist of verbs such as *arrive, come, go, break*, whose SUBJECTs, it is claimed, behave syntactically like the OBJECTs of transitive verbs, rather than like the SUBJECTs of transitive verbs. See Perlmutter, 1980, Burzio, 1981, Rosen (1981), Ostler (1980), Marantz (1981), Levin and Simpson (1981), Baker (1982), B. Levin (forthcoming) and L. Levin (forthcoming).

ADJUNCTs, by contrast, do not have similar syntactic and semantic constraints placed upon them by the matrix verb, because they are not selected by the matrix verb.

These types of syntactic and semantic constraints on secondary predicates are not apparent in Warlpiri. I claim that this stems from the comparative lack of XCOMPs in Warlpiri, and from the use of ADJUNCTs to perform some of the functions assumed in English by XCOMPs. Warlpiri has fewer classes of verbs selecting XCOMPs, and it also lacks the XCOMP-introducing rules, which introduce resultative and depictive attributes.[21] In the next two sections, I will compare English and Warlpiri with respect to classes of verbs selecting XCOMPs, and with respect to XCOMP-introducing rules.

5.4.1 Classes of English verbs selecting XCOMPs

In English, a wide range of verbs can take XCOMPs. These fall into roughly identifiable semantic classes. The major semantic classes of verbs selecting XCOMPs in English include:

[1] **Inchoative and causative verbs:**
She went *mad.*
They drove him *mad.*
She became *happy.*
They made her *unhappy.*

[2] **Continuous state**
She kept/stayed/remained *active.*
She kept him *active.*

[3] **Contemplative**
She considered/believed/thought him *happy.*

[4] **Modal**
They want/wish/need him *dead.*

---

21. Green (1973) compares English and French, arguing that while English allows both resultative and depictive attributes, French allows only depictive type attributes.

[5] **Perception**
I saw him *dead.*
He seems/appears *happy.*

[6] **Volitional causation** (i.e. the action denoted by the complement must be an action which the Causer believes the person caused has the freedom tc carry out, or not to carry out)
I persuaded/asked/forced/obliged/convinced/told him *to go.*
I promised/vowed *to go.*
I tried/attempted/strove *to leave.*

[7] **Naming verbs**
I christen/name/baptize this child *Lucy.*
They call this kind of shrub *'oleander'.*
I call that *dastardly.*

[8] **Copula**
(Possibly this class should be linked with Class 2, *continuous state*).
He is *dead.*
He lay *dying.*
The tree stood *tall.*

5.4.2 XCOMPs in Warlpiri

First, Waripiri does not have general inchoative or causative verbs (although some verbs have restricted causative usages) corresponding to the class 1 verbs in English. Instead, secondary predicates are incorporated into complex verbs with the INCHOATIVE

sufrix *jarrimi* and the CAUSATIVE *mani*,[22] as I discussed in 2.5.2.

(81) *Warungka-jarri-ja* + lku -rna wiri jamulu mirniwarra + lku.
silly-INCH-PAST + THEN -1sg big-ABS strong-ABS great.extent + THEN
I went silly when grown-up, (feeling) strong, tall. [mirniwarra]

(82) Miyalu -lpa kanunjukari *wardinyi-jarri-ja.*
stomach-ABS -PAST inside happy-INCH-PAST
Deep inside her, she felt very happy. [miyalu]

(83) Nyampu-rlu + ju kala-lu-jana yankirri-pinki + ji *warungka-ma-nu*
this-ERG-EUPH USIT-3pl-3pl emu-SET-ABS-EUPH silly-CAUS-PAST
kuja-lpa-lu nga-rnu ngapa warlkalpa-jangka.
REL-PAST-3pl eat-PAST water-ABS plant.sp.-SOURCE-ABS
With this (plant sp.) they would stupefy emus who ate the water with the narcotic plant species. [WK]

---

22. Complex verbs with the CAUSATIVE do not cover the full range of causatives such as *make* in English, because, while *make* in English allows a V complement, (in effect allowing for causing someone to perform an action), in Warlpiri the CAUSATIVE appears mainly on nominals (which are usually stative), and its appearance on nominalized verbs is very restricted:

yula-nja-ku-mani
cry-INF-DAT-CAUS
'make someone cry'
wangka-nja-ku-wangka-nja-ku-mani
speak-INF-DAT-speak-INF-DAT-CAUS
'oblige someone to speak'

The verbs *jinyi-jinyi-mani* and *jitirni* are used to express the comparable idea to *make + V*, that someone causes someone else to do something.

Nyuntulu-rlu *ka-npa* *jiti-rni - -* *yula-nja-ku.*
you-ERG PRES-2sg tease-NPST cry-INF-DAT
You are goading it (child) - to cry. [jitirni]

In this example the complement is a nominalized verb with the purposive use of the DATIVE. See 6.2.2.3.

It may be possible to argue that these incorporated resultant states are assigned the function XCOMP in the lexicon, as I suggested in Chapter 3 Footnote 27 might be the case in Icelandic. Then we would expect to find semantic and functional restrictions placed on these incorporated XCOMPs comparable to those placed on XCOMPs in English. For instance, we would expect the XCOMP to have the same controller for any verb formed with the INCH (namely the SUBJECT), and for any verb formed with the CAUSATIVE (namely the OBJECT). At first glance this seems correct, but a proper examination of this is beyond the scope of this thesis.

For the second, third and fourth classes of verbs, I have been unable to find *systematic* counterparts. The status of perception verbs, the fifth class, is quite unclear. The sixth class of verbs, verbs of *volitional causation*, correspond in Warlpiri to verbs which take OBLIQUE complements rather than XCOMPs. (See 6.2.2.3).

Of the eight classes of verbs taking XCOMPs in English, only the seventh and eighth classes, verbs of *naming*, and copula verbs of stance, require an analysis with an XCOMP argument in Warlpiri. For verbs of *naming*, the 'name' is unmarked for case, and can be

treated as agreeing with the OBJECT in Case (ABSOLUTIVE).[23] An example follows:

(84) Wita-wita pingirri-kirlangu mula ngulaji ka-rnalu
small-small ant-POSS egg-ABS that PRES-1plex
parna-yijala ngarri-rni.
delicacy-ABS + ALSO call-NPST
We call these very small ant-eggs 'parna' (delicacy) also. [mula]

The eighth class of verbs, copulas, are translated in Warlpiri by means of verbs of stance.[24] The behaviour of the copula verbs of stance with respect to XCOMP's requires an extension of the notion of *functional control*, which I will discuss in the next

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23. *Ngarrirni* is the basic word for 'call'. However, names can be incorporated into complex verbs, whether it is the actual name, or the word 'name'. The following examples show incorporation of the nominal *yirdi* into a complex verb. (It is not clear whether *mani* is used as a CAUSATIVE , or as an independent verb: *hold, get, grab*)

i. *Kula-lpa-lu-jana* *yirdi-ma-ntarla* *wirriya-wirriya* *yuwurrku-rla*
not-PAST-3pl-3pl name-CAUS-IRR boy-boy-ABS bush-LOC
karnta-karnta-rlu.
woman-woman-ERG
Women cannot use the names of the boys in the bush (for initiation). [mamiji]

ii. is especially interesting because it includes the word *yirdi* 'name' as an independent word as well. (*milki-yirdi-mani* means roughly: 'to tell, or inform someone of, the name of something').

ii. *Yirdi* *ka-lu-nyanu* *ngapa* *milki-yirdi-ma-ni,*
name-ABS PRES-3pl-refl water-ABS show-name-CAUS-NPST
They tell each other the names of the waters-holes, [milki-yirdi-mani].

Pajirni 'to cut' can occur with an incorporated nominal to mean 'call something X'.

iii. *Kala* *ngari* *ka-rnalu* *ngurlu-paji-rni.*
BUT JUST PRES-1plex seed-call-NPST
But we just call it 'ngurlu'. [pajirni]

24. Mary Laughren informs me that one verb of motion, the verb *wapami* which denotes 'characteristic motion', and does not presuppose an End-point or Source, can also be used as a copula, as in the following example:

Maru + jala *nyanungu + ju* *jintirrjintirrpa-piya* *wapa-ja*
black + CLEARLY the + EUPH bird.sp-LIKE-ABS move-PAST
maru.
black-ABS
That one was black, he was black like a Willy Wag-tail. [wapami]

However, I will concentrate on the stance verbs in the discussion.

subsection, before turning to the XCOMP-adding rules.

5.4.2.1 Copula and XCOMP constructions

Verbs of stance can be used as semi-copulas, linking one nominal with another nominal which is predicated of it.[25] Presumably this usage stems from the fact that stance verbs very commonly appear with attributes predicated of the SUBJECT:

(85) Pama ka-rna nga-rni, jurru ka-rna maju-jarri,
drink-ABS PRES-1sg drink-NPST, head-ABS PRES-1sg bad-INCH-NPST
nyurnu + lku ka-rna *nguna*.
sick-ABS + THEN PRES-1sg lie-NPST
I drink too much, my head aches, I am lying down sick now. [Hbn:68]

(86) Yinarlingi ka *lani* parntarri-mi (...)
echidna-ABS PRES fear-ABS crouch-NPST
The echidna crouches in fear. [lani]

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25. In fact, verbs of stance also occur with preverbs that act as incorporated secondary predicates. At least a hundred different preverbs have been recorded with *karrimi* 'stand', sixty with *nyinami* 'sit', thirty with *ngunami* 'lie', and five with *parntarrimi* 'crouch'. Many of these preverbs correspond semantically to XCOMPs with copulas in English, as the following examples illustrate.

jaantarr-karrimi	be big and fat
jaa-karrimi	be open, agape
ngintirrki-karrimi	be exceptionally huge
purntuny-karrimi	be swollen
kirlipil-ngunami	be twisted
kurl-ngunami	be constricted
wuly-ngunami	be dark
lamurr-nyinami	be small and round (of orifice)
liirl-nyinami	be shiny white
tararra-nyinami	be wide-eyed
larra-nyinami	be split, broken
maarr-parntarrimi	crouch lethargic, listless

The stance verbs place selectional restrictions on what their SUBJECT may be. For example, unlike the English copula verb *be*, but consonant with the stance verb origin of these verbs, for any given SUBJECT, the stance must be appropriate – thus trees typically stand, and bushes typically crouch, as illustrated below.

(87) Watiya yalumpu ka karri *lirrki-lirrki + lki*
tree-ABS that.near-ABS PRES stand-NPST bare-ABS + THEN
yama-wangu + lku.
shade-PRIV-ABS + THEN
That tree is bare, leafless now. [lirrki-lirrki]

(88) Pararri ka *karri* kankarlumparra *yukuri-yukuri*,
rainbow-ABS PRES stand-NPST up green-ABS,
kanunjumparra *yalyu-yalyu.*
below red-ABS
The rainbow is green on top and red underneath. [yukuri-yukuri]

(89) Jinjiwarnu ka *wita* *nyina.*
crimson.chat-ABS PRES small-ABS sit-NPST
The crimson chat is a small bird. [jinjiwarnu]

(90) Karnta yalumpu ka *nyina* *miirlmiirlpa* wati-ki + ji.
woman that.near-ABS PRES sit-NPST strict-ABS man-DAT + EUPH
That woman is very strict about men. [miirlpamiirlpa]

(91) *Wirijarlu* ka *nguna* wardapi kuja-rna paka-rnu.
huge-ABS PRES lie-NPST goanna-ABS REL-1sg hit-PAST
The goanna that I killed is huge. [ML: Num: 5]

(92) Ngapa *palka + lku* ka *nguna-mi* marluri-rla.
water-ABS present-ABS + THEN PRES lie-NPST claypan-LOC
There is water in the claypan. [marluri]

(93) *Yuwarli-piya* kala *parntarri-ja* milpingi + ji.
house-LIKE-ABS USIT crouch-PAST spinifex.hut-ABS + EUPH
The spinifex huts were like houses. [milpingi]

(94) a. Jajina manu munyupurru, *yirdi-jarra* kuja-ka *nyina*
mouse.sp.-ABS and mouse.sp-ABS name-DU-ABS REL-PRES sit-NPST
"Jajina" and "munyupurru" (crest-tailed marsupial mouse), it has two names..
[jajina]

b. *Yirdi-jarra* ka *karri* – jarlupala. kuranjuru.
name-DU-ABS PRES stand-NPST snake.sp.-ABS snake.sp-ABS
It has two names – "jarlupala" and "kuranjuru". [jarlupala]

(94) shows that the complement does not determine the selection of the stance verb – the same complement *yirdi-jarra* occurs with the verb *nyinami* 'sit' and the verb *karrimi* 'stand'.

While the verbs *karrimi* 'stand', *ngunami* 'lie', and in particular *parntarrimi* 'crouch', place clear selectional restrictions on their SUBJECTS, the verb *nyinami* 'sit' is comparatively free. To say, as in (89), that a bird sits small does not mean that it is actually sitting. Rather, it means that the bird is small, and *sit* is the appropriate copula for something of its size and habits. Similarly, in (90), the emotional attribute *strict* is true of the SUBJECT in general, not just when she is sitting.

Nominals which, when used on their own, have DATIVE arguments, continue to have these arguments when the copula is a verb of stance. In (95) *pakirdi* takes a DATIVE argument which is registered in the AUX, while *ngampurrpa* in (96) takes an unregistered DATIVE argument. (Even when *ngampurrpa* is used as a predicate on its own, the DATIVE argument is not registered.) In (95), the DATIVE is semantically an argument of the nominal, but syntactically it is an argument of the sentence, as shown by the fact that it is registered in the AUX.

(95) *Pakirdi* ka-rla karnta nyina *wati-ki.*
in.love-ABS PRES-DAT woman-ABS sit-NPST man-DAT
The woman is yearning for the man. [pakardi]

(96) *Miyi-ki* ka *ngampurrpa* nyina manu *kuyu-ku.*
food-DAT PRES desirous-ABS sit-NPST and meat-DAT
He wants vegetable food and meat. [jirnajirna]

In these constructions, the matrix predicate is a complex expression which is not necessarily syntactically continuous, as in (95), in which *pakirdi* and *nyina* are not adjacent. The SUBJECT has selectional restrictions imposed by both the nominal (it must be a being) and the verb (it must be an entity which the copula verb is appropriate for, or else the copula must be the general copula *nyinami*). The DATIVE argument of the

predicate is also a DATIVE argument of the sentence. This DATIVE argument, if registered in the AUX, can function syntactically like an OBJECT, in that it can control a *kurra* clause, as the following examples show. The stance verb on its own does not select a DATIVE OBJECT.

(97) Nyampu + ju wati ka-rla nyina papardi
This-ABS + EUPH man-ABS PRES-DAT sit-NPST elder-brother-ABS
karnta-ku [*miyi kipi-rninja-kurra-ku.*]
woman-DAT food-ABS winnow-INF-OCOMP-DAT
This man is big brother to the woman who is winnowing the food.

(98) Kurdu ka-rla karri-mi wiri ngarrka-ku [*rdaku-ngka*
Child-ABS PRES-DAT stand-NPST big-ABS man-DAT hole-LOC
nyina-nja-kurra-ku].
sit-INF-OCOMP-DAT
The child is bigger than the man who is sitting in the hole. [Mary Laughren, p.c. to David Nash]

In (97), the relation term *papardi*, 'elder brother', selects a DATIVE argument (the person to whom someone is a brother) which becomes the OBJECT of the whole sentence, as evidenced by the fact that it can control the OCOMP *kurra* clause. In (98), the nominal *wiri* 'big' takes a DATIVE argument by virtue of a general comparative rule that allows the object of comparison to be expressed in the DATIVE. Again, this DATIVE becomes the OBJECT of the whole complex.

English differs from Warlpiri here, because it is not necessary to suppose that the argument of an adjectival predicate in a copula construction is an argument of the sentence. An English copula + predicate construction can be treated as a simple case of functional control. The lexical entry for the copula contains an XCOMP, and a control equation stating that the SUBJECT of the XCOMP is identical to the matrix SUBJECT. Consider a sentence such as *I am mad about him*. *I* is the SUBJECT of both the copula and the XCOMP *mad about him*. But the PP argument, *about him*, can be treated as the object of the XCOMP predicate *about* alone; nothing in LFG requires the PP argument to be an oblique argument of both the copula and the XCOMP.

Suppose that, in Warlpiri, a stance-verb + nominal construction is a copula + XCOMP construction. Then, in (95) *pakirdi* is the XCOMP, and *wati-ki* can be an OBJECT in the XCOMP. The SUBJECT of *pakirdi* is functionally controlled by the matrix SUBJECT, and naturally has to satisfy the selectional restrictions of both predicates. However, treating the nominal as an XCOMP with a functionally controlled SUBJECT does not express the fact that the DATIVE argument is an argument of the matrix clause, as well as of the XCOMP.

In effect, the argument-taking predicate of a nominal plus stance-verb sentence is a complex predicate consisting of *two* argument-taking predicates, the verb and the nominal. If each of these predicates has a PRED feature, and both are assigned the equation $\uparrow = \downarrow$, the *Consistency* constraint is violated. The generalization is clearly that the two predicates merge together to form a single complex predicate, and in that respect do not violate *consistency*. But, in the LFG theory as it has been developed so far, such mergers have to take place in the morphology.

Diathesis-changing preverbs present a rather similar problem (2.5.2). A preverb-verb complex such as *jangkardu-karrimi* 'against-stand' has in effect two argument-taking predicates, that of the verb, which selects a SUBJECT, and that of the preverb, which selects a DATIVE OBJECT. However, it is possible to argue that the preverb and the verb really form a lexical word, and therefore that the merger of the two predicates takes place in the morphology. But, it would be unmotivated to combine in the morphology the stance verbs with nominals such as *wiri* and *papardi*, and then split them apart in the syntax. First, the nominal and the stance verb do not have such restrictions on position as the verb and preverb do. Second, there is simply no independent morphological evidence for generating the stance verbs and the nominals in the morphology as derived lexical items

I conclude that, to account for these examples, it is essential to be able to combine clauses in the syntax. In fact, *functional control* itself is an expression of *partial combinations* of clauses in f-structure. *Functional control* provides a *partial combination,* in that it links or identifies the SUBJECT of an XCOMP with an argument of the matrix predicate, allowing two predicates to share a single argument. Let us examine functional

control more closely, to see if it can be extended to cover *total combinations* as well. Functional control is of two types, which I will call *raising* and *non-raising*.

Non-raising functional control occurs when the matrix verb imposes selectional restrictions on the linked argument, and itself assigns it a grammatical function. For instance, the verb *try* in *Lucy tried to float* imposes animacy requirements on the *tryer* argument, and assigns it the function SUBJECT. The control equation for *try* is (↑SUBJ) = ↑XCOMP SUBJ. This expresses the fact that the one argument *Lucy* has two grammatical functions, the SUBJECT of the matrix, and the SUBJECT of the XCOMP. These requirements are equivalent to the restrictions that the verbs of stance place on the SUBJECT, for instance, the verb *karrimi* demands that its SUBJECT be something which can be thought of as standing, and requires that an XCOMP be controlled by that SUBJECT.

Raising-type functional control occurs when the matrix predicate imposes no selectional restrictions whatsoever on the linked argument. *Raising-type* functional control creates a grammatical function. A verb such as *consider* selects an XCOMP but does not select an OBJECT. However, the control equation on the XCOMP identifies the SUBJECT of the XCOMP with the matrix OBJECT. This identification is sufficient to create a 'fake' OBJECT for the verb, as shown in the lexical entry for *consider*.

(99) *consider*: considerer proposition considered
< (SUBJ) (XCOMP) >
(↑OBJ) = ↑XCOMP SUBJ

In 1.3.1 I presented the LFG concept of FORM argument, noting that a one-place verb such as *Beat it!* could introduce a fake OBJECT by means of an equation ↑OBJ FORM = *it*, thus giving the illusion that *beat* is a two-place predicate. *Object-Raising* is a similar process. It allows a two-place predicate such as *consider* to give the illusion of being three-place. However, in *Object-Raising*, instead of providing an OBJECT FORM, the lexical entry for the verb simply equates the OBJECT with an argument internal to the propositional argument of the verb. Understandably, the matrix verb places no selectional restrictions on the fake OBJECT. In a sense, this parallels the nominal + stance verb constructions. The nominal predicates provide the DATIVE OBJECT, which is registered

in the AUX, and treated as the OBJECT of the whole sentence, although the stance verb imposes no selectional restrictions on it.

Bresnan (1982a) discusses functional control, and places on it the constraint that there can only be one controlled argument, and this argument must be a SUBJECT. She derives the latter constraint from her definitions of categorial features - a category is [+ predicative] if it cannot have a phrase structure subject, and finds a SUBJECT through control.[26]

But suppose the constraint that there can be only one controlled argument is relaxed. Nothing then prevents arguments other than the SUBJECT from being functionally controlled. Functional control can now extend to cases where more than one argument is shared, in fact to cases where all arguments are shared. These will be examples of *total* combination, rather than the partial *combination* shown by verbs such as *try* and *consider*. Instead of having control equations such as ↑SUBJ = ↑XCOMP SUBJ, which just identify one argument of the matrix with one argument of the XCOMP, the control equations for *total combination* predicates will equate all the arguments. Let the variable G stand for 'grammatical function'. Then the control equation for *total combination* will be as follows:

$$\uparrow G \quad = \quad \uparrow XCOMP\ G$$

The SUBJECT of the matrix clause is thus the SUBJECT of the XCOMP, the OBJECT of the matrix clause is the OBJECT of the XCOMP, the $OBLIQUE_{goal}$ of the matrix is the $OBLIQUE_{goal}$ of the XCOMP, and so on down.[27]

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26. It is true that Bresnan's categorial feature system does not immediately extend to Warlpiri. However, I assume that the basic idea that categories differ as to whether they can have controlled SUBJECTs is probably correct.

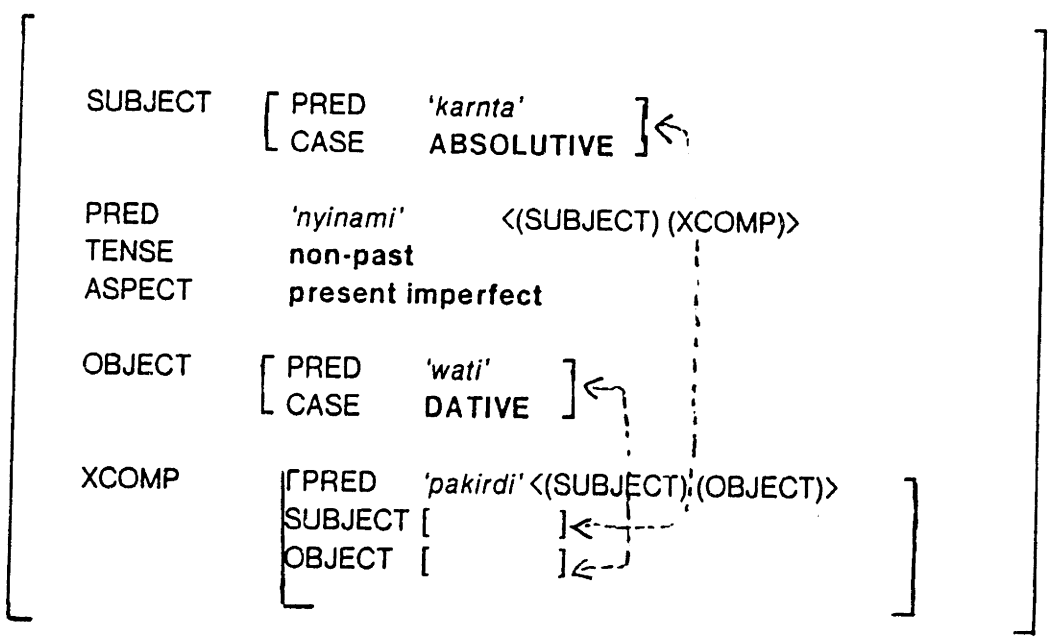
27. This G variable must be restricted, perhaps to closed functions, because otherwise the equation ↑ G = ↑XCOMP G allows indefinitely deep embedding: ↑XCOMP = ↑XCOMP XCOMP.

The nominal + stance verb construction in Warlpiri can now be treated as an example of *total combination*. A stance verb such as *nyinami* has the following lexical entry:

nyinami < (SUBJ) (XCOMP) >
↑G = ↑XCOMP G

This control equation identifies all the G functions of the XCOMP with the G functions of the matrix. The matrix predicate is the stance verb, and the XCOMP is the nominal. The SUBJECT is provided by the stance verb, and so must satisfy the selectional restrictions of that verb. It is linked to the SUBJECT position of the XCOMP by *non-raising* functional control, just as the SUBJECT of *try* is identified by *non-raising functional control* as the SUBJECT of *float* in *Lucy tried to float*. The DATIVE argument of a nominal predicate such as *pakirdi* is identified with a matrix grammatical function. In contrast to the SUBJECT, the DATIVE argument of the XCOMP undergoes *raising-type* functional control. It creates an OBJECT or Adjunct DATIVE for the sentence, just as in *Raising-to-OBJECT* constructions, the SUBJECT of the XCOMP becomes the matrix OBJECT.

Below is a reduced functional structure for (95), *Pakirdi karla karnta nyina watiki*, 'The woman is yearning for the man'.



The arrows linking the empty brackets with functions represent functional control.

This use of functional control allows the combination of predicates at functional structure as well as in the morphology. No new mechanism is required in LFG theory to account for this combination. Moreover, *total combination* is an operation which may well be useful for the representation of constructions which have been called *clause union* structures, such as serial verb structures, in which two clauses appear to share more than one argument. Extending this concept of *total combination* to such constructions, however, is beyond the scope of this work, as is the determination of constraints on *combination.*

5.4.3 XCOMP-adding rules

In the previous section I compared the classes of verbs which idiosyncratically select XCOMPs in English with their counterparts in Warlpiri, and showed that Warlpiri uses different strategies to express the comparable meanings. In this section I will look at the lexical rules which English uses to create verbs with XCOMPs, and show that again Warlpiri mostly uses different strategies to convey comparable meanings.

The three major classes of XCOMP-adding rules in English are:

1. the rules allowing directional arguments of verbs of motion to be expressed as XCOMPs:
I ran; I ran to the zoo.

2. the rule which adds depictive attributes:
I ate the meat; I ate the meat raw.

3. the rule which adds resultative attributes
I hammered the metal; I hammered the metal flat.

In Warlpiri, it seems likely that verbs of motion can optionally have directional XCOMPs, just as they can in English. Presumably the same kind of lexical process allows for the realization of a directional argument optionally as an XCOMP in both English and Warlpiri. (See 3.4.1.) I claim that the second two types of XCOMP-adding rule, the rules adding *depictive* and *resultative* attributes, have no counterpart in Warlpiri, and that similar meanings are expressed in Warlpiri either by ADJUNCTs, or by preverbs. I will examine the evidence briefly.

5.4.3.1 Depictive-type adjuncts

There are several reasons for claiming that depictive attributes in English are

XCOMPs.[28] First, they appear in the same syntactic position as other XCOMPs, and are in complementary[29] distribution with them:

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28. *Depictive* attributes must be carefully distinguished from *circumstantials*. Semantically, circumstantials describe the circumstances surrounding an event, whereas depictives closely resemble manner adverbials, with the difference that manner adverbials attribute properties primarily to the VP and secondarily to the SUBJECT, or Agent in passive sentences. Depictives, however, attribute properties primarily to some argument, often the OBJECT, and only secondarily to the VP. For instance: in the sentence *He walked carefully down the plank*, the SUBJECT is *careful* with respect to the action of walking, but it is not a general property of the SUBJECT at the time of walking that he is careful. He could be carefully walking, and simultaneously carelessly singing. However, in the sentence *He arrived drunk*, it is true of the SUBJECT at the time of arrival that he is drunk. It is not possible to say:

**He arrived sober, and lurched into the room drunk.*

This cannot mean *Although he was sober when he arrived, he lurched into the room as if were drunk.*, because the depictive attributes *sober* and *drunk* are directly predicated of the SUBJECT. Compare this example with the following acceptable example.

He waved his arms drunkenly, but all the while his eyes stared soberly at me. I did not understand the purpose of this pretence.

Functionally, *circumstantials act* as ADJUNCTs in English, while depictives, in Bresnan's (1982a) analysis, are XCOMPs. See Halliday (1967) and Nichols (1978) for a description of the distinctions between *circumstantials* and *depictives*. Some important tests are: complementary distribution (there can be only one depictive but several circumstantials), control by an indirect object (*depictives* cannot be controlled by an indirect object: **I gave John the book sober*), and ability of the circumstantial but not the depictive outside the VP (as shown by *do so* replacement as well as the scope of negation).

i. *John didn't arrive drunk.* (He arrived sober) **depictive**
ii. *John didn't arrive, drunk as usual.* (He didn't arrive at all) **circumstantial**
iii. **Fred ate the meat raw, but I did so cooked.* **depictive**
iv. *I can carry these buckets, empty, but Fred can do so full.* **circumstantial.**

29. See Chapter 1 Footnote 36 for discussion of apparent counter-examples to this.

(100) a. *I asked John *drunk to go there*. [depictive, selected XCOMP]
b. *He chopped the meat raw *into little pieces*. [depictive, resultative XCOMP]

Second, there are restrictions on what may be the controller of a depictive, namely that it must be an OBJECT (101) a, or an intransitive SUBJECT (101) b, or marginally a transitive SUBJECT (101) c, or, in ditransitives, an OBJECT 2 (101) d, but not an OBJECT (101) e:

(101) a. They served the meat *hot/on a plate.*
b. He arrived *exhausted/a hero.*
c. He met her *naked/in his dressing-gown.*
d. I gave him the meat *hot/on a plate.*
e. *I sent him the money *in his wheelchair/smashed out of his mind.*

The restrictions on the grammatical functions of possible controllers are consonant with the hypothesis that the depictive is an XCOMP, selected by the verb. The grammatical function of the controller of the XCOMP can be represented in a control equation as part of the lexical entry for the verb.

Third, the verb exerts selectional restrictions on the depictive attribute – only certain adjectives and PPs are possible as depictives. (See Randall, 1981, and Bresnan, 1982a for further discussion of these restrictions.)

(102) a. I ate the meat **nutritious/savoury.*
b. She greeted the guests **enigmatic.*

These restrictions can also readily be stated if the depictive attribute is part of the lexical entry of the verb.

In Warlpiri, however, I have found no attributes that behave syntactically like the depictive attributes in English. Semantically, depictive attributes correspond either to preverbs, or to free nominals. I will discuss the preverbs first.

Whether a preverb is interpreted as a depictive attribute or a resultative attribute depends in part on the meaning of the verb. A verb of impact such as *pakarni* 'hit, chop' is more likely to combine with preverbs which can be interpreted as *resultative*. A verb such as *mardarni* 'hold', or *parnkami* 'run' is more likely to combine with preverbs which

can be interpreted as *depictive*. A few examples of preverbs[30] behaving like depictive attributes follow:

(103) *jiwirlkijiwirlki-parnkami* — run along with appendage bouncing
kurdurrinkurdurrinpa-parnkami — run along with tail bouncing
jirdinyjirdiny-parnkami — run along keeping down low
(> *parnkami* 'to run')

(104) *waraly-mardarni* — hold something hanging
(> *mardarni* 'to hold')
(compare the resultative use of the same preverb: *waraly-waraly-yirrarni* 'put something hanging', as well as its use with the stance verb *karrimi* 'to stand': *waraly-waraly-karrimi* 'to be hanging')

(105) a. *luntu-pardimi* — to travel together in a large group
pardimi 'to rise, set off'

b. *luntu-kanyi* — to perform a ceremony or ceremonial dance in a large group
(> *kanyi* 'to carry')

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30. Depictive attributes in English include locative expressions as well, and the same is true in Warlpiri; locative depictive attributes can also be incorporated as preverbs.
kulkul-kanyi — to carry something in one's mouth.
(> *kanyi* 'to carry')
kulkul-mardarni — to hold something in one's mouth
(> *mardarni* 'to hold')
julyurl-wantimi — to swim
(> *wantimi* 'to fall')
julyurl-ngunami — to float in water
(> *ngunami* 'to lie')
Compare the following examples in which the incorporated locative is used as a *resultative*:
julyurl-kijirni — to throw in water or fire
(> *kijirni* 'throw')
julyurl-yirrarni — to put in fire or water.
(> *yirrarni* 'put')
(The preverbs *kulkulpa* and *julyurlpa* can occur as independent nominals meaning 'in the mouth' and 'in fire or water'.)

c. *lunja-ngarni* — to eat in a large group
(> *ngarni* 'to eat')
(compare the stance verb *nyinami* 'sit' with the same preverb: *lunja-nyinami*: to crowd, swarm, be present in a large group)

d. *luntuny-purrami* — to cook in large lot together
(> *purrami* 'to cook')

(106) *jarntarrurntarru-yani* — to shuffle along on one's knees
(> *yani* 'to go')
(compare the stance verb *karrimi* 'to stand' with the same preverb: *jarntarru-karrimi* 'to be kneeling')

Independent nominals can be used as predicates. Semantically, they sometimes correspond to depictive attributes. But there is no way to distinguish syntactically a nominal being used as a depictive attribute, from a nominal being used appositionally, or as a circumstantial. There are no restrictions on position, nor, so far as I can tell, restrictions on the controller (apart of course from the fact that the predicate must agree in case with its controller). I give below a few sentences which contain predicates that seem to correspond semantically to English depictive attributes. Admittedly the presence of the THEN clitic *lku* favours this interpretation.

(107) and (108) show depictive attributes being predicated of SUBJECTs,

ABSOLUTIVE in (107),[31] and ERGATIVE in (108). (In (108) there are two ERGATIVE-marked expressions predicated of the SUBJECT: it seems likely that *jajinyanurlu* 'father' is a restrictive modifier of *yankirrirli* 'emu' (the *merged* interpretation), while *jintangku* is a depictive attribute expressing the manner in which the action is performed.)

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31. Other examples of depictive attributes modifying ABSOLUTIVE SUBJECTs follow:

Yapa *ngulaju* *linji + lki* *jiti-ja* *kuja* *ya-nu-rnu*
man-ABS that untidy-ABS + THEN descend-PAST REL go-PAST-HERE
jalangu *turaki-rla* – – *walya-jangka.*
now truck-LOC – – dust-SOURCE
That person got off really dishevelled, the one who came on the truck today – from the dust. [linji]

Yali *kuja-ka-rna* *nya-nyi* *kurdu,* *ngulaju* *ka-ju*
that.rem REL-PRES-1sg see-NPST child-ABS that PRES-1sg
lani + lki *jurnta-parnka.*
fear-ABS + THEN away-run-NPST
Wherever I see that kid he runs away frightened. [parnkami]

Ya-ninja-rla, *yankirri-jarra-kari + ji* *-pala* *warungka-warungka + lku*
go-INF-SEQ, emu-DU-other-ABS + EUPH -3du crazed-ABS + THEN
wanti-ja *marna-ngka.*
fall-PAST grass-LOC
Moving off, the two other emus fell down in a daze right beside the water.

Warlu-jangka *ngiji-jangka* *-lpa* *purlka* *parnka-ja*
fire-SOURCE firestick-SOURCE PAST old man-ABS run-PAST
maramara-lku – – *Jungarrayi + ji.*
scorched-ABS + THEN Jungarrayi-ABS + EUPH
That old man Jungarrayi ran away burnt all over from the firesticks. [maramara]

Observe that all these examples contain the simultaneous event clitic *lku*.

(107) Kala-lu-jana yarlku-rnu wanta-wanta-rlu, *lani-lki*
USIT 3pl-3pl bite-PAST ant.sp.-ERG fear-ABS + THEN
kala-lu warru-jurl-pu-ngu *kamina-kamina + ju.*
USIT-3pl around-jump-PAST girl-ABS + EUPH
The red ants used to bite them and then the girls would jump all around in fright. [lani]

(108) *Yankirri-rli* ka-jana yakalpa-yakalpa jina-marda-rni
emu-ERG PRES-3pl chicks-ABS look after-NPST
jajinyanu-rlu *jinta-ngku.*
father-ERG alone-ERG
The father emu looks after the emu chicks on his own. [jaji]

Depictive-type adjuncts can not only be predicated of SUBJECTS; they can also be predicated of OBJECTs. In the following sentences the depictive-type adjunct is predicated of the ABSOLUTIVE OBJECT:

(109) Miyi watakiyi-rlangu ka-lu nga-rni *manya.*
food-ABS bush mango-ABS-E.G. PRES-3pl eat-NPST soft-ABS
Fruits such as the bush mango are eaten soft. [manya]

(110) Purra-nja-rla ka-pala *yirnmi + lki* ka-nyi.
cook-INF-SEQ PRES-3du cooked ABS + THEN carry-NPST
Having cooked it, they are carrying it back cooked. [YK: 15]

(111) Yapa-ngku kalaka-nyanu jukanyanu marda-rni *palka*
man-ERG ADMON-refl guardian-ABS hold-NPST present-ABS
kaji yurrkunyu-rlu payi-rninja-ya-ni.
IF police-ERG ask-INF-PROG-NPST
An Aboriginal person can have a friend present when the police are asking questions. [MKJ: 8]

(112) Puluku ka-lu-jana walypali-patu-rlu *wankaru + juku*
bullock-ABS PRES-3pl-3pl European-PL-ERG alive-ABS + STILL
ka-nyi-rra tawunu-kurra turaki wiri-ngki.
carry-NPST-THERE town-ALL truck large-ERG
The Europeans take the cattle still alive to town in a big truck. [kanyi]

Depictive-type adjuncts can also be predicated of DATIVE OBJECTS.

(113) Yanmajirri -lpa-ju-lu warrarda-wangka-ja *wita-ku + wiyi.*
Anmajerra PAST-1sg-3pl always-talk-PAST small-DAT + BEFORE
When I was little, they used to always speak to me in Anmajerra. [wangkami]

(114) Nyampu -rna-nyarra wangka-mi *jinta-ku + lku.*
here -1sg-2pl speak-NPST one-DAT + THEN
I will speak to you here all together. [jinta]

They can modify the ABSOLUTIVE OBJECT 2 in a ditransitive.

(115) Wali kala-lu-rla ngulaju pina-yu-ngu ngaka + lku
Well USIT-3pl-DAT that back-give-PAST later + THEN
wiri-nyayirni + lki.
big-very + THEN
Well they gave her back to him now truly grown-up. [BWJ]

Unlike English, a depictive attribute can be predicated of a DATIVE in a ditransitive.

(116) Karnta-ngku ka-rla *kurdu-ku* miyi yi-nyi
Woman-ERG PRES-DAT baby-DAT food-ABS give-NPST
parraja-rla-ku.
coolamon-LOC-DAT
The woman is giving food to the baby (who is) in the coolamon [carrying dish].
[Survey]

Depictive attributes differ from other ADJUNCTs in Warlpiri only in their interpretation. There is simply no evidence to suggest that they have a different function, such as XCOMP, as there is in English

5.4.4 Resultatives

I will now turn to the last example of an XCOMP-adding rule, the rule which adds resultative attributes to a verb. There are syntactic constraints on this rule in English, namely that the controller of the XCOMP must be an OBJECT, whether surface or underlying, as in unaccusative verbs. There is also a semantic constraint that the verb must denote an action which necessarily affects the OBJECT.

Warlpiri forms resultative attributes in two ways. First, a preverb denoting a resultant state can be incorporated into a verb. Second, the TRANSLATIVE suffix can be used on a nominal as an independent secondary predicate.

Let us consider the preverb-verb complexes first. A preverb denoting resulting state is usually predicated of the SUBJECT of an intransitive verb, or the OBJECT of a transitive verb, parallelling the syntactic constraint on control of resultatives in English. Similarly, it is usual for preverbs denoting resultant state to appear with verbs denoting actions which necessarily affect one argument, which parallels the semantic restriction in English. However, much more work is needed to investigate whether these tendencies generally hold up. Consider resultant state predicates with the word *rdilyki* 'broken'. [32] It can act as a matrix predicate:

(117) Karli nyampu *rdilyki*.
boomerang-ABS this broken
This boomerang is broken. [rdilyki]

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32. Other examples include:

narntirn-pakarni	to chop something into a curved shape
jaarn-pakarni	to chop something into a leaning or arc-like stance.
kirtirl-pakarni	to chop something so that it has a bend in it.

Interestingly, this last example can also be used with a depictive attribute interpretation: to chop something which already has a bend in it. This interpretation is illustrated in the following example, in which *kirtirlpari* (a nominal formed from the preverb) is used as a depictive attribute modifying the OBJECT in one clause, and in the other clause, *kirtirl* is used as a preverb with the same interpretation.

Watiya *ka-rnalu* *paka-rni* *kirtirlpari* – *kirtirl-paka-rni* *ka-rnalu*.
tree-ABS PRES-1plex chop-NPST bent-ABS bent-chop-NPST PRES-1plex
We chop down a tree with a bend in it – we chop one with a bend in it. [kirtirl-pakarni]

But it can also act as a preverb with verbs of impact to denote the state of the OBJECT[33] resulting from the action of the verb.

rdilyki-luwarni	break by hitting with missile
rdilyki-pajirni	break by cutting
rdilyki-pakarni	break by chopping
rdilyki-pantirni	break by spearing
rdilyki-pinyi	break by hitting

An example in a sentence follows.

(116) Jurlarda ka-rnalu warlkurru-rlu *rdilyki-paka-rni.*
native.honey-ABS PRES-1plex axe-ERG break-chop-NPST
We break open the bee hive by chopping it with an axe. [rdilyki-pakarni]

I will turn now to resultative attributes which occur as independent words, and hence syntactically parallel the English resultatives more closely.

5.4.4.1 Translative

A typical example of a resultative attribute formed with the suffix *karda* follows:

(119) Kala-lu ngapa-ngka julyurl-yirra-rnu majardi-majardi
USIT-3pl water-LOC immerse-put-PAST 'majardi-majardi'-ABS
parrka *manya-karda.*
leaf-ABS soft-TRANSL
They used to put the leaves of the 'majardi-majardi' in water to soften them. [majardi-majardi]

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33. *Rdilyki* can appear with the motion verb *yani*, predicated of the intransitive SUBJECT:
Murdukayi kalaka-ngalpa kulkurru rdilyki-ya-ni.
motorcar-ABS ADMON-1plin halfway break-go-NPST
The car is liable to break down on us on the way. [rdilyki-yani]

Following Hale (to appear), I assume that *karda* is a case-suffix analogous to the TRANSLATIVE in Finnish. Unlike grammatical case-suffixes, *karda* does not indicate the relation of a nominal to the matrix predicate. Like semantic case-suffixes, a nominal marked with *karda* is a predicate. However, unlike semantic case-suffixes, *karda* cannot take further case-marking.[34] Therefore, case does not determine what is the controller of a *karda* ADJUNCT. Nor, of course, does syntactic position, since neither the *karda* nominal nor its controller is restricted to a particular position, as will become clear from the examples below.[35]

In the majority of examples with *karda* that I have found, the controller is either the OBJECT, or else an intransitive SUBJECT. I assume that this tendency has a semantic explanation: OBJECTs and intransitive SUBJECTS are more likely to undergo change as a result of the action described in the verb. I give a few examples below.

(120) Pina-kiji-ka warlu-kurra yungu junga janka-mi *yirnmi-karda*.
back-throw-IMP fire-ALL REAS true cook-NPST cooked-TRANSL
Put it [meat] back in the fire to cook it properly. [maramara]

(121) Mangarri ngulaju *maramara-karda* janka-ja, ngulaju maru + lku.
damper-ABS that-ABS cinder-TRANSL cook-PAST, that-ABS black + THEN
The damper was cooked to a cinder so that it is now black all over. [maramara]

(122) Minyura-rlu ka-lu-jana mapa-rni yawarra junma-jangka-rlangu,
fat-ERG PRES-3pl-3pl rub-NPST wound-ABS knife-PROP-E.G.-ABS,
kurlarda-jangka-rlangu *ngurrju-karda*, *walyka-karda*,
spear-SOURCE-E.G.-ABS good-TRANSL, cool-TRANSL,
kurnku-kurnku-paka-rninja-kujaku.
pain-hit-INF-ADMON
People rub fat onto wounds from a knife cut or from a spear to make them better,

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34. However, one speaker spontaneously produced ERGATIVE case-marking on *karda* in the following sentence, although the same speaker also allowed *karda* predicates without ERGATIVE case-marking to be predicated of an ERGATIVE SUBJECT:

Watiya -rna paka-rnu *mata-karda*-rlu.
tree-ABS -1sg hit-PAST tired-TRANSL-ERG
I hit the tree until I was tired.

35. There is however a tendency for the *karda* nominal to be placed last.

to make them cool and to stop the throbbing pain. [minyura]

However, in sharp contrast to English (and also Finnish, which is perhaps a closer parallel to Warlpiri, since both languages use special TRANSLATIVE suffixes), a *karda* clause in Warlpiri may be predicated of arguments with other grammatical functions.

For instance, in the following example *yapulyu-karda* is predicated of an understood DATIVE *mijilypa* which is almost certainly not the OBJECT.

(123) Mijilypa kala-lu puyu-pu-ngu pirli-ngka panma-ngka.
sap-ABS USIT-3pl grind-PAST rock-LOC flat-LOC.
Ngula-jangka kala-lu-rla ngapa wunju-rnu *yapulyu-karda*.
That-EL USIT-3pl-DAT water-ABS pour-PAST soft-TRANSL
They used to grind the sap on a flat stone. Then they used to pour water onto it to make it soft. [mijilypa]

In (124) the *karda* clause is predicated of a LOCATIVE.

(124) Rdaparra ka-rnalu ngarri-rni kurlarda-rla yi-ka-rnalu
tip-ABS PRES-1plex call-NPST spear-LOC REAS-PRES-1plex
muru-pi-nyi – – *kirrirdi-karda*.
insert-NPST – – long-TRANSL
The tip is that part that we insert in the spear shaft to make it longer. [muru-pinyi]

In striking contrast to English, *karda* predicates can be predicated of the SUBJECT of a transitive sentence.

(125) Puluku-rlu kapu-lu marna nga-rni *kuntukuntu-karda*.
Bullocks-ERG FUT-3pl grass-ABS eat-NPST fat-TRANSL
The bullocks will eat themselves fat on the grass. [Hale, p.c.]

(126) Karla-mi ka-rna-rla wardapi-ki *mata-karda-rlu*.
dig-NPST PRES-1sg-DAT goanna-DAT tired-TRANSL-ERG
I am digging for a goanna so that I get tired. [JS]
(Note the exceptional ERGATIVE marking on *karda*.)

(127) Karli ka jarnti-rni, – – *mata-karda*.
boomerang-ABS PRES trim-NPST tired-TRANSL
He's making the boomerangs and gets tired. [JS]

But, unlike English, a fake reflexive *themselves* is not used in (125).

So, Warlpiri has fewer syntactic constraints on what may be the controller. Warlpiri also appears to have fewer semantic constraints on resultative attributes.

First, all sorts of verbs, not just those thought of in English as having a necessary effect on the OBJECT, can take resultative attributes. For example, the *karda* resultative can be used in contexts of *creation*; thus in (124) the literal English translation 'insert the tip long' is impossible, because *insert* does not allow a resultative of creation. Similarly, verbs such as *tell* in English do not allow resultatives, whereas their Warlpiri counterparts do.

(128) Kurdu yali ngarri-ka *ngurrju-karda*, yungu nyina-mi
child-ABS that.rem.-ABS tell-IMP good-TRANSL, REAS sit-NPST
ngurrju.
good-ABS
Tell that kid so that it behaves well, so that it sits quiet.

In (129), the verb of stance does not express an effect on the SUBJECT, but a *karda* clause can still be used:

(129) Janyungu ka nguna-mi *linji-karda*
tobacco-ABS PRES lie-NPST dry-TRANSL
The tobacco lies in the sun to dry.

Verbs of perception such as *see* cannot take resultatives in English, but can in Warlpiri.

(130) *Pina-karda* nya-ngka!
knowledgeable-TRANSL see-IMP
Look at it so that you will understand. [Nash, p.c.]

Second, in English, there is a semantic restriction preventing the appearance of resultatives with verbs that denote a change of location, such as *arrive, fall, go, come, descend, put, send, give*. But in Warlpiri there is no such restriction. *Karda* nominals can appear modifying the OBJECT of a change of location verb such as *yirrarni* 'put'.

(131) Wanta-kurra ka-lu karli yirra-rni, *linji-karda.*
sun-ALL PRES-3pl boomerang-ABS put-NPST dry-TRANSL
They put boomerangs in the sun to dry. [excer.946]

Resultatives can also appear in bodypart predicate situations, as in (132). The action of the subject affects a part (tongue) of the OBJECT, and, by doing so, has an effect on the OBJECT.

(132) Jarnpa-ngku ka-lu jalanypa turliny-panti-rni
Kurdaitcha-ERG PRES-3pl tongue-ABS double-pierce-NPST
wurdungu-karda.
silent-TRANSL
The kurdaitcha (harmful magical person) pins his tongue back to make him silent. [jalanypa]

The simplest account of the *karda* predicates in Warlpiri seems to be that, unlike English, they are not selected by the verb, and that they have the function ADJUNCT.[36]

5.5 Conclusion

In the preceding discussion, I have shown that phrase-structure position in Warlpiri is relevant neither to the determination of the function of a secondary predicate, nor to the determination of the controller of an ADJUNCT, and that it does not appear to determine the use or semantic interpretation of an ADJUNCT. I have also compared the use of XCOMPs in English with their semantic analogues in Warlpiri. I have shown that Warlpiri makes relatively little use of the XCOMP function. Instead, the expressive burden is borne on the one hand by complex verb structures, (including both those formed with the INCH

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36. Like other ADJUNCTS, the controller of a *karda* clause need not be overt, as in the following example, in which an understood whole *tree* in a part-whole construction, is the controller of *karda* clauses. The tree is defoliated because the caterpillars have eaten the leaves.

Yarlapama-rlu ka parrka munyurr-nga-rni, lirrki-lirrki-karda.
caterpillar-ERG PRES leaf-ABS bare-eat-NPST defoliated-TRANSL
The caterpillar eats up all the leaves until defoliated. (the caterpillars have eaten the tree bare with respect to its leaves) [munyurr-ngarni]

and CAUS suffixes, and those formed with preverbs), and on the other by the remarkably free use of ADJUNCTs. Of the three main XCOMP-forming rules in English, only the rule allowing verbs of motion to have directional XCOMPs has any counterpart in Warlpiri.

6. Nominalized verbs and complementizer suffixes

6.1 Introduction

In this chapter I discuss secondary predication which involves non-finite verbs and nominals with a set of suffixes called *complementizer suffixes* (Hale (EFW), Nash (1980)). I will call this *complementizer predication* in contrast to the *nominal predication* and *case-suffix* predication discussed in the previous three chapters. This type of predication covers two classes: all predication involving nominalized verbs (including not only nominalized verbs with complementizer suffixes, but also nominalized verbs with case-suffixes), and all predication involving complementizer suffixes (including not only nominalized verbs, but also action nominals and ordinary nominals)

The difference between *nominal* predication and *case-suffix* predication is simply a difference as to whether the nominal itself acts as an argument-taking predicate, or whether an affix (such as a semantic case) on a nominal acts as an argument-taking predicate. I will show that the same difference can be seen in *complementizer predication*. In the first type, the argument-taking predicate is a nominalized verb or a nominal. In the second type, the complementizer suffix itself is the argument-taking predicate. I show that complementizer predication can be represented in much the same way as nominal predication, except that a new rule of $\overline{N}$ expansion is needed. In fact, ultimately it is possible to argue that complementizer predication consists of a subclass of nominal predication (when a nominalized verb or nominal provides the argument-taking predicate), and a subclass of case-suffix predication (when the complementizer suffix provides the argument-taking predicate).

However, there are two major differences between nominal predication and complementizer predication. First, whereas the controller of a case-marked nominal is determined by the case of the nominal, the controller of a complementizer clause is determined by information carried by the complementizer suffix itself, and, depending on the complementizer suffix, may be identified by grammatical function, rather than by case concord alone.

Second, whereas semantic case-suffixes differ from each other primarily in the type of relation denoted, complementizer suffixes differ both in type of semantic relation and in *time-reference*. For instance, the LOCATIVE case suffix *rla* differs from the ALLATIVE case-suffix *kurra* in that the former denotes a location relation, while the latter denotes a directional relation. However, the SEQ complementizer suffix *rla* differs from the SSCOMP complementizer suffix *karra* primarily in that, while the former denotes an event or state completed before the event or state denoted by the matrix predicate, the latter denotes an event or state concurrent with the state or event denoted by the matrix predicate. Thus the time identified by the complementizer suffix is determined *relative* to the time indicated by the tense-aspect morphology in the matrix clause. The time reference of an *ATP* case-suffix, such as the LOCATIVE, or the instrumental use of the ERGATIVE, depends on the specific semantic relation denoted by the suffix. The LOCATIVE for instance always has a time-reference identical to that of the matrix,[1] so that, in a sentence such as *Lucy kissed John in the garden*, the phrase *in the garden* attributes a location at the time of the action of the matrix, neither before nor after the action.

This chapter is organized in the following way. First, I will discuss the evidence for anaphoric control of non-finite clauses. Then I will give the arguments for assuming that the non-finite verb is a nominalized verb, and show how to represent the internal constituent structure of non-finite clauses. I will also illustrate the behaviour of the general rule *Assign grammatical functions* with respect to these clauses. Finally, I will illustrate the properties of the individual complementizer suffixes, and show how they can be represented in the lexical entries for the suffixes. This will lead us into several interesting areas of Warlpiri syntax, including the possibility for overt SUBJECTs of non-finite clauses, the case-marking of these SUBJECTs, and the possibility for anaphoric control of OBJECTs.

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1. Of course, the LOCATIVE can be used as a temporal adverb in its own right, in which case it provides the time reference for the matrix clause.

6.2 Evidence for anaphoric control

6.2.1 Introduction

In Chapters 3, 4 and 5, I claimed that most nominal secondary predicates are anaphorically controlled ADJUNCTS. I propose that, in Warlpiri, most of the non-finite clauses are also controlled *anaphorically*, rather than *functionally* controllled. In the functional structure of the non-finite clauses, there is a null pronominal present, which either refers to an argument of the matrix sentence, or else is arbitrarily controlled.

This null pronominal is introduced by the general rule of **PRO introduction** (2.2.8), which allows any argument-taking predicate to introduce a null pronominal PRO for any argument it selects. In matrix sentences, a PRO SUBJECT, OBJECT, etc, introduced by this rule can have a discourse antecedent. However, in the non-finite clauses, the complementizer suffix places restrictions on what must be the antecedent of a PRO SUBJECT. Thus, in the *kurra* clauses discussed in earlier chapters, the lexical entry for the suffix *kurra* states that the SUBJECT of the clause is a null pronominal, and, furthermore, that the antecedent of the SUBJECT is a matrix OBJECT. It is the restrictions placed by the complementizer suffix which determine the differences in behaviour between matrix null pronominals and controlled null pronominals.

The section is organized as follows. I will argue on the basis of the behaviour of anaphors that non-finite clauses in Warlpiri have understood SUBJECTs. I will then show that the SUBJECT of a non-finite clause can have a case different from that of its controller. Since *functional control* demands complete identity of the controller and the SUBJECT of the controlled sentence, the non-finite clauses cannot be functionally controlled. However, they can be *anaphorically controlled*, because anaphoric control demands only referential identity between the controller and some argument of the controlled sentence (which argument this can be, is a language-particular fact). The controlled argument can differ in features from the controller. For instance, it can differ in case. Then I will examine the functions of nominalized verbs, and show that most of them are ADJUNCTS. There are a few cases of possible XCOMPs which I will also discuss.

6.2.2 Anaphors and disjoint reference

The behaviour of anaphors and of disjoint reference violations in non-finite clauses have often been taken as evidence for the presence of understood SUBJECTs in non-finite clauses. The anaphors normally investigated are reflexives and reciprocals. Since Warlpiri expresses these overtly only in finite clauses, (by means of reflexive AUXILIARY clitics), they provide little insight into the properties of non-finite clauses. However, there is one anaphor which does provide some insight into non-finite clauses, the nominal *kariyinyanu*.

6.2.2.1 Kariyinyanu

The anaphor *kariyinyanu*, 'another of the same kind', is illustrated in (1).

(1) Karli-rlangu-ku kajika-rla-jinta liji-yirra-rni
boomerang-E.G.-DAT POT-DAT-DAT covet-NPST
ngarrka-kariyinyanu-ku.
man-ANOTHER-DAT
One man might covet the boomerang of another man. [liji-yirrarni]

(2) Turaki-rlangu-ku kajika-rla-jinta liji-yirra-rni
car-E.G.-DAT POT-DAT-DAT covet-NPST
karnta-ku.
woman-DAT
He/she might covet the car of the woman.

The presence of *kariyinyanu* on the DATIVE argument *ngarrka* in (1) shows that the SUBJECT is also understood to be a man, *ngarrka*, in contrast to (2), in which the SUBJECT can be of either sex.

(3) shows that the *kariyinyanu*-marked nominal does not have to be a selected argument of the verb, since the LOCATIVE nominal *maliki-kariyinyanu-rla* is not a selected argument of the verb 'roll'.

(3) Minjirnpa-nyayirni ka purnturr-karri-mi, *maliki-kariyinyanu*-rla
stench-VERY-ABS PRES stink-NPST, dog-ANOTHER-LOC
wardarr-wanti-ja pukulyu-rla.
roll-PAST – stinking-LOC
He stinks badly; he rolled on another dog, a stinking one. [minjirnpa]

(4) shows that the argument to which the *kariyinyanu*-marked nominal refers need not be a SUBJECT.

(4) Kurlarda ka-rnalu-rla limi-yirra-rni *kurlarda-kariyinyanu-ku*,
spear-ABS PRES-1plex-DAT put-NPST spear-ANOTHER-DAT,
mangulpa ka-rna-lu-rla limi-yirra-rni *mangulpa-kariyinyanu-ku*.
lance-ABS PRES-1plex-DAT put-NPST lance-ANOTHER-DAT.
We put a spear with the other spears, and we put a lance with the other lances. [limi]

In fact *kariyinyanu* can even occur on a SUBJECT, as in (5), in which *kariyinyanu* is used on the SUBJECT to show that the SUBJECT, like the OBJECT 'you', is an Aboriginal. In this *kariyinyanu* differs from anaphors such as the reflexive pronominal clitic, which can never represent the SUBJECT.

(5) Nyampu-rla + ju kalaka-ngku-lu marda warrki yi-nyi
This-LOC + EUPH ADMON-2sg-3pl probably work-ABS give-NPST
yangka *yapa-kariyinyanu-rlu.*
the Aboriginal-ANOTHER-ERG
Here, another Aboriginal (community worker) might give you work. [MKJ: 17]

The *kariyinyanu* nominal is thus very free with respect to its antecedent; it can refer to a non-SUBJECT. It is also very free with respect to its grammatical function; on the one hand, it does not have to be a selected argument, and on the other, unlike reflexive anaphors in most languages, it can be the SUBJECT. There is, nevertheless, one major constraint on this anaphor. The domain of *kariyinyanu* must be the minimal clause nucleus in which it occurs. It cannot find an antecedent outside the clause nucleus, although within that clause nucleus there are no constraints on the grammatical function of its antecedent. Example (6), in which *kariyinyanu* appears in the subordinate clause, and refers to the SUBJECT of the matrix, and not to an argument of the subordinate clause, is unacceptable.

(6) *Ngarrka-ngku karnta nya-ngu kuja *ngarrka-kariyinyanu*
Man-ERG woman-ABS see-PAST REL man-ANOTHER-ABS
paka-rnu.
hit-PAST
*The man saw the woman who hit another man. [Survey]

Example (7) is acceptable because the *kariyinyanu* nominal refers to the SUBJECT of the subordinate clause (which also happens to be the OBJECT of the matrix clause).

(7) Ngarrka-ngku karnta nya-ngu kuja *karnta-kariyinyanu*
Man-ERG woman-ABS see-PAST REL woman-ANOTHER-ABS
paka-rnu.
hit-PAST
The man saw the woman who hit another woman. [Survey]

Non-finite clauses behave just like finite clauses with respect to the domain of *kariyinyanu*. If *kariyinyanu* appears in a non-finite clause, it must find its antecedent within that non-finite clause.

(8) Ngarrka-ngku karnta nya-ngu *karnta-kariyinyanu*
Man-ERG woman-ABS see-PAST woman-ANOTHER-ABS
paka-rninja-kurra.
hit-INF-OCOMP.
The man saw the woman hitting another woman. [Survey]

(9) Ngarrka-ngku karnta paka-rnu *ngarrka-kariyinyanu-ku*
Man-ERG woman-ABS hit-PAST man-ANOTHER-DAT
rdanpa-rninja-karra-rlu.
accompany-INF-SSCOMP-ERG
While accompanying another man, the man hit the woman. [Survey]

These sentences are well-formed, because the understood SUBJECT of the non-finite clause is the antecedent of the *kariyinyanu* nominal which occurs within the non-finite clause. However, the next sentences are unacceptable, because the antecedent of the *kariyinyanu* nominal is in the matrix clause, and not in the non-finite clause.

(10) *Ngarrka-ngku karnta nya-ngu *ngarrka-kariyinyanu*
Man-ERG woman-ABS see-PAST man-ANOTHER-ABS
paka-rninja-kurra.
hit-INF-OCOMP.
*The man saw the woman hitting another man. [Survey]

(11) *Ngarrka-ngku karnta paka-rnu *karnta-kariyinyanu-ku*
Man-ERG woman-ABS hit-PAST man-ANOTHER-DAT
rdanpa-rninja-karra-rlu.
accompany-INF-SSCOMP-ERG
*While accompanying another woman, the man hit the woman. [Survey]

On the assumption that non-finite clauses have SUBJECTS that are not lexically realized, the distribution of the acceptable sentences with the *kariyinyanu* anaphor can be explained.

6.2.2.1.1 **Disjoint reference**

Further evidence that non-finite clauses must have understood SUBJECTs for the purposes of anaphor-antecedent relations comes from disjoint reference. (12) is unacceptable when the SUBJECT and OBJECT are taken to be coreferential.

(12) Jampijinpa-rlu *nyanungu* paka-rnu.
Jampijinpa-ERG him-ABS hit-PAST.
*Jampijinpa hit himself.
Jampijinpa hit him/her (someone other than Jampijinpa).

A reflexive OBJECT has to be registered in the AUX, as in (13). The verb requires an OBJECT. In (12) there is no reflexive registered in the AUX, and so disjoint reference makes the sentence unacceptable.

(13) Jampijinpa-rlu -nyanu paka-rnu.
Jampijinpa-ERG -refl hit-PAST.
Jampijinpa hit himself.

Reflexives cannot easily be expressed in non-finite clauses, because reflexives are represented as AUX pronominal clitics in finite clauses, and there is no AUX in non-finite clauses. Therefore, it is not possible to argue from reflexivization about the need for a SUBJECT in non-finite clauses, as is sometimes done for more familiar European languages.[2] But it is possible to show that the SUBJECT of a non-finite clause in Warlpiri is a SUBJECT for the purpose of disjoint reference. An overt[3] non-reflexive OBJECT pronoun in a non-finite clause must be disjoint in reference from the SUBJECT of that clause.

(14) Jakamarra-rlu ngarru-rnu Jampijinpa *nyanungu*
Jakamarra-ERG tell-PAST Jampijinpa-ABS him-ABS
paka-rninja-ku.
hit-INF-DAT
*Jakamarra told Jampijinpa to hit himself (= Jampijinpa). [Survey]
OK Jakamarra told Jampijinpa to hit him/her (not Jampijinpa).

(14) cannot receive a reflexive reading, because *nyanungu*, a non-reflexive OBJECT pronoun, cannot be coreferent with the understood SUBJECT of the non-finite clause,

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2. For instance, the contrast in acceptability between i. and ii. is often attributed to the presence of understood SUBJECTs in each, which are identical to the matrix SUBJECT and OBJECT respectively.

i. **Did John persuade you to kill himself?*

ii. *Did John promise you to kill himself?*

3. Recall that in 2.2.8 and 2.3.3, I noted Nash's finding that a non-overt null pronominal in a non-finite clause can be reflexive.

Japanangka *karlarra-jarri-ja* *Jupurrula(-rlu)* *nya-nja-ku.*
Japanangka-ABS west-INCH-PAST Jupurrula see-INF-DAT
Japanangka$_i$ went west [for Jupurrula$_j$ to see PRO = himself$_j$]

I suggested that the constraint that a null pronominal in a finite clause be non-reflexive should be expressed in terms of an antecedent feature [- NUCLEAR] which is attached as part of the default information provided by the AUX. Therefore null pronominals in finite clauses must be non-reflexive, while null pronominals in non-finite clauses are not so constrained, because there is no AUX in non-finite clauses. Overt free pronouns, on the other hand, have as part of their entry [- NUCLEAR] (although I noted a difficulty with respect to Adjunct DATIVEs), and so cannot be construed as reflexive, whether the sentence is finite or non-finite.

which happens to be controlled by the matrix OBJECT, *Jampijinpa*.[4] It seems clear then, that non-finite clauses must have understood SUBJECTs for the purposes of anaphor-antecedent relations.

6.2.2.2 The Case of PRO

Evidence that the PRO SUBJECT of non-finite clauses must bear a case comes from the fact that ADJUNCTS predicated of a SUBJECT agree in case with that SUBJECT.

Four of the main types of adjuncts that can modify the SUBJECT of a non-finite clause are: locatives, instrumentals, manner adverbials, and body parts. In finite clauses, these receive the case of the SUBJECT, by additional case-marking for the locatives, and, for the other three, by having the same case. If the verb selects an ABSOLUTIVE SUBJECT, an ADJUNCT predicated of the PRO SUBJECT can have ABSOLUTIVE case. Similarly, if the verb in a non-finite clause demands an ERGATIVE SUBJECT, an adjunct predicated of the SUBJECT will have ERGATIVE case. In (15), 'dog' has DATIVE case in the matrix. It is the controller of the *-kurra* clause. The verb in the *-kurra* clause, *ngarni* 'eat' is transitive and would take an ERGATIVE SUBJECT in a finite clause. A manner adverbial, *yarnunjuku-rlu*, 'hungry', predicated of the understood SUBJECT of the *-kurra* clause, receives ERGATIVE case.

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4. The sense of this construction can be expressed in an odd construction using a loanword from English, *jalpi* ('self') as a kind of emphatic reflexive agreeing with the understood SUBJECT in having ERGATIVE case.

Jakamarra-rlu	*ngarru-rnu*	*Jampijinpa*	*jalpingki*	*paka-rninja-ku.*
Jakamarra-ERG	tell-PAST	Jampijinpa-ABS	self-ERG	hit-INF-DAT

Jakamarra told Jampijinpa to hit himself. [Survey]

Of course, a tensed clause can also be used to express this meaning.

(15) Jarntu-ku ·lpa-rna-rla wurru-ka-ngu, [kuyu
dog-DAT ·PAST-1sg-DAT sneak.up.on-PAST, meat-ABS
yarnunjuku-rlu nga-rninja-*kurra* (-*ku*)]
hungry-ERG eat-INF-OCOMP (-DAT)
I sneaked up on the dog which was hungrily eating meat. [Hale, p.c.]

Another example is given in (16) b, in which the ADJUNCT already has LOCATIVE case, but also has ERGATIVE case agreeing with the understood ERGATIVE Subject of the non-finite clause. This parallels (16) a, in which the ADJUNCT has ERGATIVE case agreeing with the overt SUBJECT *ngarrka-ngku*.

(16) a. Ngarrka-ngku ka jarnti-rni karli *ngurra-ngka-rlu.*
man-ERG PRES trim-NPST boomerang-ABS camp-LOC-ERG
The man is trimming the boomerang in camp.

b. Karnta ka-rla wangka-mi ngarrka-ku, [*ngurra-ngka-rlu*
woman-ABS PRES-DAT speak-NPST man-DAT, [camp-LOC-ERG
jarnti-rninja-kurra-(*ku*)].
trim-INF-OCOMP-(DAT)
The woman is speaking to the man (while he is) trimming it in camp.

Another elicited example[5] with a manner adverbial follows.

(17) Karnta ka-rla wangka-mi ngarrka-ku, karli
woman-ABS PRES-DAT talk-NPST man-DAT boomerang-ABS
 # kilji-kirra-ku # karli jarnti-rninja-kurra-ku kilji-ngki
fast-OCOMP-DAT boomerang-ABS trim-INF-OCOMP-DAT fast-ERG
jarnti-rninja-kurra-ku.
trim-INF-OCOMP-DAT
The woman is talking to the man, involved with a boomerang, quickly, trimming a boomerang, quickly trimming a boomerang. [JS]

In (18) and (19), an instrument has ERGATIVE case agreeing with the understood SUBJECT of the non-finite verb.

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5. I have kept the pauses (marked by #) to show the informant's hesitation. Observe the attempt to paraphrase the manner adverbial by using a nominal with the complementizer suffix, before the decision to use the manner adverbial with the ERGATIVE.

(18) Ngarrka ka wangka-mi, karli *#palya-kurlu-rlu*
man-ABS PRES talk-NPST boomerang-ABS adze-PROP-ERG
jarnti-rninja-karra.
trim-INF-SSCOMP
The man is talking, while trimming a boomerang with an adze. [JS]
(The form *palya-kurlu-rlu* consists of a nominal with PROP case and additional ERGATIVE case. PROP case is commonly used to express 'instrument', especially in intransitive sentences, where the ERGATIVE case cannot appear.)

(19) Karnta-patu-kari -li ya-nu ngapa-ku ma-ninja-ku
woman-PL-OTHER-ABS -3pl go-PAST water-DAT get-INF-DAT
kartaku-rlu.
billycan-ERG
Many women went to get water in billycans. [JMK]

In (20), a bodypart, *langa-ngku*, has ERGATIVE in agreement with an understood SUBJECT (kangaroo). (I owe this example to Mary Laughren).

(20) (..)yapa-rlangu wangka-yarla, purla-yarla, watiya-rlangu
person-E.G.-ABS talk-IRR, shout-IRR tree-E.G.-ABS
rdilyki-kati-karla, ngula kajika – *langa-ngku purdanya-nja-rla*
broken-tread-IRR that POT ear-ERG hear-INF-SEQ
parnka + yijala.
run-NPST + ALSO
(..)like if a person speaks or shouts or treads on and breaks a piece of wood, then when he (kangaroo) hears this with his ear, he runs away. [langa]

The examples given show that four main types of SUBJECT-controlled ADJUNCT, instrumentals, locatives, bodyparts and manner adverbials, can all agree in case with the SUBJECT of a non-finite clause. In Bresnan's (1982) theory of control, agreement of an ADJUNCT with an understood PRO SUBJECT is a hallmark of *anaphoric control*,[6] as I mentioned in 1.3. If an ADJUNCT attributes a property to the SUBJECT of a clause, it agrees in case with the SUBJECT, whether the SUBJECT is understood or lexical.

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6. See also Neidle (1982), and Andrews (1982b. and c.)

A general cautionary note is in order. One linguistically sophisticated speaker rejected all sentences with an ADJUNCT agreeing with a non-overt SUBJECT.[7] Another speaker accepted the case-marked ADJUNCTs hesitatingly, and used alternative strategies wherever possible. These alternatives included suffixing the complementizer suffix to the ADJUNCT, and making it an independent ADJUNCT, as well as taking the locative out of the clause and predicating it separately of the argument. However, as (19) and (20) show, such ADJUNCTs do occur in texts.

This fluctuation in judgment is not surprising when one looks at reports of speakers' judgments on case-marked attributes in other languages. In Ancient Greek (Andrews, 1971; Quicoli, 1972; Ostler, 1976; Ingria, 1978), there is fluctuation as to whether an attribute of the SUBJECT in a non-finite clause agrees in case with an understood ACCUSATIVE PRO SUBJECT, or with its controller ("case-attraction"). In non-SUBJECT-controlled clauses in Russian, an adjunct can agree with a DATIVE PRO SUBJECT in a non-finite clause, (Comrie, 1974; Neidle, 1982a, and b; Schein, 1982a). However, I have also found Russian speakers who accept agreement with the controller instead, and some speakers even reject DATIVE adjuncts altogether in non-finite object-controlled clauses, and insist on agreement with the controller. In Icelandic (Thráinsson, 1979; Andrews, 1982c and d), a case-marked adjunct in an anaphorically-controlled infinitive agrees either with the understood PRO or with its controller.[8]

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7. This speaker commented that the sentences would be acceptable without the ERGATIVE-marked ADJUNCT.

8. There are some interesting regularities. Apparently predicative nominals tend to agree with the understood SUBJECT, rather than with the controller of their clause in both Greek and Icelandic. I suspect that a better understanding of what semantic interpretation is associated with particular categories will lead to an explanation. Predicative nominals usually act as *identifying* predicates: *John is my best friend.* A predicative nominal predicated of a SUBJECT identifies the SUBJECT with some referent. It is possible that this identification interpretation is strong enough to force agreement of all features of an ADJUNCT with the understood SUBJECT, and to prevent the appearance of non-identical features, such as a case-feature provided by the controller, rather than by the understood SUBJECT.

6.2.2.3 Functions of non-finite clauses

Most non-finite clauses are used as ADJUNCTs. They are not selected by the verb, and simply act as secondary predicates, which occasionally act solely as modifiers of a particular argument, as in (21), but most commonly act as *circumstantials*, providing the reason (22), time (23), purpose (24), condition (25) etc for the action denoted by the matrix clause. (Complementizer suffixes differ as to which interpretation is favoured).

(21) Nyampu + ju wati ka-rla nyina papardi-nyanu
This man-ABS PRES-DAT sit-NPST brother-KIN-ABS
karnta-ku *wangka-nja-kurra-ku*
woman-DAT talk-INF-OCOMP-DAT
This man is the big brother to the woman who is talking. **Restrictive modifier**
[Mary Laughren, p.c. to David Nash]

(22) Ngarrka-ngku -nyanu paju-rnu, *karli* *jarnti-rninja-rlajinta.*
man-ERG refl cut-PAST boomerang-ABS trim-INF-COMCOMP
The man cut himself while trimming a boomerang. **Reason** [Survey]

(23) Ngula kala-lu ngaka *jinamarda-rninja-rla* pina-ya-nu.
that USIT-3pl later help-INF-SEQ back-go-PAST
After helping him (the sick person), they went back home. **Time** [TK]

(24) Nyuntulu-rlu + ju kalaka-npa-nyanu marda-rni witiniji + yijala
you-ERG + EUPH ADMON-2sg-refl have-NPST witness-ABS + ALSO
yimi *ngarri-rninja-ku.*
story-ABS tell-INF-DAT
You should also have witnesses to prove your story. **Purpose** [MKJ]

(25) Kurdu ka-rla karri-mi wiri ngarrka-ku *rdaku-ngka*
child-ABS PRES-DAT sit-NPST big-ABS man-DAT hole-LOC
nyina-nja-kurra-ku.
sit-INF-OCOMP-DAT
The child is bigger than the man when he is sitting in the hole. **Condition** [Mary Laughren, p.c. to David Nash]

I assume that most instances of elements with complementizer suffixes act as ADJUNCTS. Since a sentence can contain more than one ADJUNCT, several elements with complementizer suffixes may appear in one sentence.

(26) *Walya-ngka* *nyina-nja-karra-rlu*, ngula-ngku -ju pu-ngu
Ground-LOC sit-INF-SSCOMP-ERG that-ERG -1sg hit-PAST
karri-nja-kurra
stand-INF-OCOMP
While sitting on the ground, that one hit me when I was standing. [Excerp. 105]

No Warlpiri verbs *obligatorily* select a nominalized verb as their complement. Nor are there any verbs which obligatorily select a secondary predicate expressed by an element with a particular complementizer suffix. For instance, no verb has to appear with an argument marked with the OCOMP suffix *kurra*. However, there are some verbs which *optionally* appear with a nominal or nominalized verb with a particular complementizer suffix. I give here a short description of the major classes.

Class 1: JUSSIVES

Hale (EFW) observes that a number of verbs optionally appear with 'jussive' complements, expressed as clauses with the DATIVE suffix *ku* in its purposive sense. These verbs fall into several classes, which I illustrate below, referring the reader to EFW for more details.

Verbs of ordering

(27) Kurdu kapi-rna jinyi-jinyi-ma-ni *ngapa* *ma-ninj-i-ninja-ku.*
child-ABS FUT-1sg order-NPST water-ABS get-INF-LATIVE-INF-DAT
I will order the child to go and get the water. [jinyi-jinyi-mani]

(28) Ngarru-rnu -rna *wurnturu* *ya-ninja-ku.*
tell-PAST -1sg far go-INF-DAT
I told him to move away. [ngarrirni]

Verbs and nominals denoting *knowledge* and its absence.

(29) Kula-ka milya-pi-nyi *ya-ninja-ku* *ngapa* *yali-kirra.*
not-PRES know-NPST go-INF-DAT water that-rem.-ALL
He doesn't know how to get to that waterhole. [Hale tape 28 jarrwarayani]

(30) Wajawaja-jarri-ja -rna-ngku *maniyi-ki + ji* *yi-nja-ku + ju.*

forget-PAST -1sg-2sg money-DAT + EUPH give-INF-DAT + EUPH
I forgot to give you any money. [Hnotes]
(In this sentence, the DATIVE OBJECT of the subordinate clause is a null pronominal whose antecedent is in the matrix clause:
I forgot with respect to you$_i$ with respect to the money$_j$, to give PRO$_i$ PRO$_j$.)

(31) Jalangu-rlu + ju, papa-ngku ka-ju pinapina-ma-ni + lki
t[illegible]-ERG + EUPH, father-ERG PRES-1sg knowing-CAUSE-NPST + THEN
[illegible] *ku* *luwa-rninja-ku* makiti-kirli-rli.
meat-DAT shoot-INF-DAT gun-PROP-ERG
Today my father is going to teach me how to shoot game with a rifle. [WNJ]

Verbs and nominals denoting
emotion.

(32) (...)yi-ka ngampurrpa nyina *muku-nga-rninja-ku* – *miyi-ki*
REAS-PRES desirous sit-NPST all-eat-INF-DAT – food-DAT
manu kuyu-ku.
and meat-DAT.
(...)as he wants to eat it all - both the damper and the meat. [mirrimirri]

Verbs of terminus

(33) Ngula-jangka + ju kala *walya + lku* *jararr-pi-nja-ku*
that-SOURCE + EUPH USIT ground-ABS + THEN dig-INF-DAT
rdirri-yu-ngu.
begin-PAST
Then he got ready to dig (a hole) in the ground. [jararr-pinyi]

(34) Piniji-ma-nu rlu *Warlpiri-ki + ji* *wangka-nja-ku + ju.*
finish-CAUS-PAST -1duin Warlpiri-DAT + EUPH talk-INF-DAT + EUPH
We finished talking Warlpiri.

Usually, the semantic role represented by the nominalized verb with *ku* can be expressed instead by a finite clause with the AUXILIARY particle *yungu*, as in (35), or by a nominal with a case-suffix expressing a similar meaning, as in (36), or by a nominal with the DATIVE case, as in (37). (In some of these examples the nominal corresponding to the OBJECT of the non-finite clause has the suffix *ku*; this is discussed briefly in 6.6.6).

(35) Yapa-ngku ka-rla jangkardu-jinyi-jinyi-ma-ni wati-kari-ki
person-ERG PRES-DAT against-order-NPST man-OTHER-DAT
yungu paka-rni.
REAS hit-NPST
One person incites him to hit someone else.. [jinyi-jinyi-mani]

(36) *Nyiya-kurra* ngarrka-ngku jin-jinyi-ma-nu kurdu.
what-ALL man-ERG order-PAST child-ABS
What was the man ordering the child into? [Survey]

(37) Kurdu-ngku ngarrka kapakapa-ma-nu *marlu-ku/marlu*
child-ERG man-ABS hinder-PAST kangaroo-DAT/kangaroo-ABS
luwa-rninja-ku.
shoot-INF-DAT
The child prevented the man from (shooting) the kangaroo. [Survey]

Some of these verbs allow arbitrary control[9] as in the following example:

(38) Japi-rni ka-rna-ngku *kuyu* *ma-ninja-ku.*
ask-NPST PRES-1sg-2sg meat-ABS get-INF-DAT
I am asking you to get the meat (i.e. that you get the meat, or that I get the meat). [japirni]

The question now is, should these complements be analysed as XCOMPs or as OBLIQUE arguments, or as ADJUNCTS? Semantically, the complements appear to be selected by the verb, and so the ADJUNCT reading is less plausible. The choice is then between XCOMPS and OBLIQUES. XCOMPs are functionally controlled, whereas OBLIQUES are anaphorically controlled. There is a piece of evidence against assigning them the XCOMP status. As (39) shows, an ADJUNCT in the non-finite clause can have a case different from that of its controller. Functionally controlled arguments agree with their controller in every respect, including case. Therefore the non-finite clause cannot be functionally controlled, and so the complement cannot be an XCOMP.

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9. However, Hale (EFW) says that most of the verbs like those exemplified above seem to be structures of obligatory control.

(39) Jakamarra-rlu ngarru-rnu Jampijinpa karli *yaruju-rlu*
Jakamarra-ERG tell-PAST Jampijinpa-ABS boomerang-ABS quick-ERG
jarnti-rninja-ku.
trim-INF-DAT
Jakamarra told Jampijinpa to trim the boomerang quickly. [JS]

However, this argument should be treated with caution, because the example sentence was elicited, and only one of the two people I asked accepted it.

But if the argument holds, then the complements to jussive verbs are probably $OBLIQUE_{purpose}$ arguments of the verbs, which can be realized as non-finite clauses with the DATIVE suffix, as nominals with the DATIVE or ALLATIVE suffixes, or as finite clauses with the REASON complementizer.

Class 2: Verbs of Emotion and Perception

The second class contains a few verbs of emotion and perception which appear to select secondary predicates marked with the Object-control complementizer *kurra* (OCOMP).

(40) Lawa ka-rna-jana *yinka-kurra + ju* maka-maka-jarri.
just PRES-1sg-3pl laughing-OCOMP + EUPH dislike-INCH-NPST
I don't like them laughing. [maka-maka]
(Note that this example contains an action nominal *yinka* to which the complementizer is suffixed, rather than a nominalized verb).

(41) Nantuwu-patu ka-rna-jana nya-nyi yuwurrku-wana
horse-PL-ABS PRES-1sg-3pl see-NPST scrub-PERL
jaala-parnka-nja-kurra.
back + forth-run-INF-OCOMP
I see the horses running up and down in the scrub. [jaalaparnkami]

(42) Mungalyurru-mungalyurru kajika-npa-jana jurlpu purdanya-nyi
morning-morning-ABS POT-2sg-3pl bird-ABS hear-NPST
wangka-nja-kurra.
talk-INF-OCOMP
In the early morning you can hear birds chirping. [wangkami]

(43) Kula-lpa yangka *wangka-nja-kurra-rlangu* purdanya-ngkarla,
NEG-PAST that speak-INF-OCOMP-E.G. hear-IRR,
warungka + ju kuja-ka-lu-jana ngarri-rni ngulaju yangka

crazy-ABS + EUPH REL-PRES-3pl-3pl call-NPST that the
warungka - yapa purdanya-nja-wangu.
deaf-ABS person-ABS hear-INF-PRIV
If someone cannot hear (people) talking for instance, 'deaf' is what they call them, 'deaf', 'a person unable to hear'. [Hale tape 28 warungka]

The complements of perception verbs and verbs such as *hate* in English are notoriously difficult to analyse: in a sentence such as *John saw Lucy kissing Paul*, is the verb *see* a two-place predicate taking *Lucy kissing Paul* as an argument, or is it a two-place predicate taking *Lucy* as an argument with an attribute *kissing Paul*? It is possible to analyse most of the Warlpiri examples given as having attributes: *I dislike them when they laugh/those people who laugh* etc. However, there are some examples in which what is perceived is clearly the whole action described by the OBJECT together with the *kurra* clause. (43) is perhaps such an example, and so is (44). (I am grateful to Ken Hale for pointing this out to me).

(44) Kula-rna ngaju-rlangu-rlu + wiyi nya-ngu *pali-nja-kurra* yangka
not-1sg I-E.G.-ERG + BEFORE see-PAST die-INF-OCOMP YOU.KNOW
puluku-rlangu manu nantuwu - nyanungu-jangka
bullock-ABS-E.G. and horse-ABS the-SOURCE
For instance, I have never seen a bullock, say, or a horse die, you know, from that thing [praying mantis] [Excerp. 116]

The object of perception is the event of an animal dying from eating a praying mantis.

The *kurra* clauses cannot plausibly be analysed as OBLIQUE arguments of the verb. Therefore they must be either XCOMPs or ADJUNCTs. The same argument for anaphoric control that I made for the jussive complements is also applicable here. An ADJUNCT predicated of the SUBJECT of a *kurra* clause can have a different case from that of the controller of *kurra* clause, as in (45). From this, it follows that the the *kurra* clause must be anaphorically controlled, and therefore that the *kurra* clause cannot be an XCOMP.

(45) Pirli-ngirli ka nya-nyi karnta-ngku ngurrangk # ngurra-ngka
hill-EL PRES see-NPST woman-ERG camp-LOC camp-LOC
karli # # # *ngurra-ngka-rlu jarnti-rninja-kurra.*
boomerang-ABS camp-LOC-ERG trim-INF-OCOMP
From the hill the woman is looking at the man in the camp trimming a boomerang. [JS]

(The same cautionary note about elicited material is in order as for (39)).

Class 3: Verbs of Occupation

The third class consists of a couple of verbs, *wirnki-jarrimi* 'get busy at' and a near-synonym *wartardi-jarrimi*. Hale (EFW) observes that the object of endeavour can be expressed by a nominal or a nominalized verb with the suffix *rla*, as in (46) and (47).

(46) *Karli* *jarnti-rninja-rla* -rna wirnki-jarri-ja.
boomerang-ABS trim-INF-? -1sg busy-INCH-PAST
I got busy on trimming the boomerang. [EFW]

Nominals can appear with *rla* or its allomorph *ngka* in the same context.

(47) *Karli-ngka* -rna wirnki-jarri-ja.
boomerang-? -1sg busy-INCH-PAST
I got busy on the boomerang. [EFW]

The question is: is this *rla* the Sequential complementizer, or is it the homophonous LOCATIVE case suffix? In the latter event, the complement can be treated as an OBLIQUE$_{LOC}$. Now the SEQ complementizer suffix *rla* has *prior* dependent tense (the action in the *rla* clause precedes that of the matrix), while LOCATIVE case has *simultaneous* dependent tense (the action in the *rla* clause co-occurs with the action in the matrix). In (46) there is no sense of prior dependent tense, and so I assume that in these examples *rla* is the LOCATIVE, and not the complementizer. Thus the verbs *wirnki-jarrimi* and *wartardi-jarrimi* select an argument with the function OBLIQUE$_{loc}$, which may be expressed by a nominal or a nominalized verb.

Class 4: Verbs of waiting

The fourth class consists of the verb *pardarni* 'to wait', and its synonyms, which take a DATIVE argument,[10] as in (48).

(48) Wati ka-rla karnta-ku parda-rni.
Man-ABS PRES-DAT woman-DAT wait-NPST
The man is waiting for the woman. [pardarni]

These verbs allow an Obviative-controlled complementizer controlled by the DATIVE argument, as in (49) and (50). The presence of the *rlarni* clause argues for the DATIVE being an Adjunct DATIVE, since *rlarni* clauses are never controlled by OBJECTs.

(49) *Mawu-ngkarni* -ji parda-ka!
urine-OBLCOMP -1sg wait-IMP
Wait while I urinate! [pardarni]

(50) Parda-ka -palangu ngarrka-jarra-ku, *karli* *paka-rninja-rlarni*!
wait-IMP -3du man-DU-DAT, boomerang-ABS trim-INF-OBLCOMP
Wait for the two men while they cut the boomerang (from the tree). [pardarni]

Since the *rlarni* clause is quite optional, it is possible to argue that it is an ADJUNCT predicated of the Adjunct DATIVE obligatorily selected by the class 4 verbs.

In conclusion, the behaviour of disjoint reference and of the anaphor *kariyinyanu* shows that nominalized verbs have understood SUBJECTs. Because ADJUNCTS predicated of the SUBJECT in these clauses can have the case which the SUBJECT of the corresponding finite clause would have, (and one different from that of the controller) these clauses must be anaphorically controlled. While most nominalized verbs act like ADJUNCTs, there are a few which are arguably selected by the verb. I have presented some evidence from case-marking of ADJUNCTs to suggest that these subcategorizing clauses cannot be functionally controlled (i.e. cannot be XCOMPs), but must be either

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10. The presence of the DATIVE appears to be obligatory with *pardarni*, which implies that, if this DATIVE is indeed an Adjunct DATIVE, then Adjunct DATIVEs can be obligatorily selected functions.

OBLIQUEs or ADJUNCTs, depending on the meaning of the verb (although the evidence is not conclusive). In the next section, I will turn to the issue of the morphological and constituent structure of the non-finite verbs.

6.3 Structure of the nominalized verb

I discuss the position in phrase structure of non-finite clauses, before turning to an examination of the internal structure of non-finite clauses, which shows that non-finite verbs are really nominalized verbs. I argue that there are two types of nominal to which a complementizer suffix can attach, ordinary nominals and action nominals. I show that nominalized verbs with complementizer suffixes behave like action nominals with complementizer suffixes, rather than like ordinary nominals with complementizer suffixes.

6.3.1 External structure

Just as the controller of a nominal secondary predicate does not have to be adjacent to the nominal, so the controller of a complementizer predicate does not have to be adjacent to the complementizer clause, as (51) shows:

(51) Turaki-rli puluku wirijarlu paka-rnu *parnka-nja-karra-rlu.*
vehicle-ERG bullock-ABS big-ABS hit-PAST run-INF-SSCOMP-ERG
The moving car hit a big bullock. [pakarni]

The position of the non-finite clause is also free. Very often, non-finite verbs appear at the end of the sentence, as in (52).

(52) Jiwinypa-rlu ka-ngalpa luwa-luwa-rni *yinirnti*
chip-ERG PRES-1plin shoot-shoot-NPST beantree-ABS
wirijarlu *paka-rninja-karra-rlu.*
big-ABS hit-INF-SSCOMP-ERG
He's hitting us with (flying) chips as he chops down the big bean-tree. [luwarni]

However, as (53), (54) and (55) show, the non-finite verb can intervene between the matrix verb and its SUBJECT. (56) shows a non-finite verb appearing between the matrix verb and a *kurlu* argument.

(53) Wanti-ja, *warlkurru* *ma-ninja-karra* yapa.
fall-PAST axe-ABS get-INF-SSCOMP person-ABS
The man fell on picking up the axe. [Hnotes 63]

(54) Ngaany-kiji-rni ka *nguna-nja-karra-rlu* yapa-ngku.
breathe-NPST PRES lie-INF-SSCOMP-ERG person-ERG
The man lying is breathing. [Hnotes:906]

(55) Karnta-ngku + ju -lpa *lutu* *panti-rninja-karra-rlu + ju*
woman-ERG + EUPH PAST lice-ABS spear-INF-SSCOMP-ERG + EUPH
yilpinji yunpa-rnu.
lovesong-ABS sing-PAST
The woman sang love chants as she squashed his head-lice. [pantirni]

(56) Nyampu ka-rna yirra-rni *manngi-nya-nja-karra-rlu*
this PRES-1sg put-NPST think-see-INF-SSCOMP-ERG
Jilpirli-wana-kurlu, Jakamarra-kurlu.
Jipirli-PERL-PROP Jakamarra-PROP
Thinking about him, I am telling this story about Jakamarra, the one buried at Jilpirli. [MLJ]

Free assignment of grammatical functions will allow secondary predicates in any position to be assigned the function ADJUNCT or OBLIQUE.

6.3.2 **Internal structure**

In this section, I give evidence that the [V + INF] structure is really a nominalized verb. I then discuss the phrase structure rules and function assignment for obtaining the correct functional structures for the complementizer clauses, including nominal + complementizer as well as nominalized verb + complementizer.

6.3.2.1 **Arguments for non-finite verbs as nominals.**

All non-finite verbs consist of verb-roots followed by the INFINITIVE suffix followed by some other suffix. The INFINITIVE suffix is a nominalizing suffix, which creates an N^{-1}. An N^{-1}, as I claimed in 2.5.1, is an uninflected nominal root. N^{-1}s cannot occur in isolation, except as part of $\overline{N}$. The [V + INF] may undergo lexical compounding with a verb of motion (see 2.5.2) to appear in the syntax as a V, or else the [V + INF] may have

attached a suffix from the class of suffixes which attach to nominals. The suffix may be a *complementizer suffix* as in (57), or one of a restricted class of *case-suffixes*, (58), and *derivational case suffixes*, (59).

(57) A: Pingka -rlipa *mata-ma-ninja-kujaku* ya-ni.
slow-ABS -1plin tired-CAUS-INF-ADMON go-NPST
We'll go slowly so that it (walking a long distance) doesn't tire us out. [[H60Dial: 7.11]

(58) (...)ngula kala-lu kunjuru-rlu + lku ngurrju-ma-nu – *purra-nja-rlu*.
that USIT-3pl smoke-ERG + THEN good-CAUS-PAST cook-INF-ERG
They would make it better (the rotten meat) with smoke, by cooking it. [H66PSJ: 1127]

(59) (Wirrirli) *paji-rninja-parnta*.
(march-fly) bite-INF-PROP
It (the March fly) bites a lot. [Hnotes:1722]

I will now present morphological evidence for both [V + INF] and [[V + INF] + COMP] being nominals.

The first piece of evidence that the INFINITIVE suffix nominalizes the verb is *distributional*. Complementizer and case suffixes attach to N^{-1}s or N: *manyu karra* 'play-SSCOMP'. If [V + INF] is an N^{-1}, the distribution of case and complementizer suffixes already given requires no change.

The second argument is based on reduplication. Nash (1980) shows that there are two types of reduplication in Warlpiri, verbal reduplication and non-verbal reduplication. Verbal reduplication reduplicates just the first two syllables of a finite tensed verb. This can even include the tense-marker, if the verb has a monosyllabic root. Nominal reduplication reduplicates the entire root, no matter how many syllables it has. Nash shows that infinitives can undergo either type of reduplication. Examples of verbal type reduplication include:

Verbal-type reduplication

kiji -kiji -rninja -parnkami from **kiji-rni** 'throw'
throw -throw -INF -run

parnta -parntarri -nja -mpa -yani from **parntarri-mi** 'crouch'
crouch -crouch -INF -BY -go

pura -pura -nja -yani. from **pura-mi** 'go'
follow -follow -INF -go

Nominal-type reduplication

ya -nir -ya -ninja -karra -rlu from **ya-ni** 'go'
go -go -INF -SSCOMP -ERG

If verbal reduplication applies before the infinitive suffix is affixed, and nominal reduplication can apply after the infinitive suffix is affixed, making the verb into a nominal, then the reduplication patterns exhibited above can be accounted for without any special stipulation.

In fact the whole complex [[V + INF] + COMP][11] is occasionally found reduplicated:

(60) *nya -nja -karra -nya -nja -karra -rlu*
see -INF -SSCOMP -see -INF -SSCOMP -ERGATIVE
while looking and looking [Example due to Mary Laughren]

(61) Kalaka-npa *nya-nja-rla-nya-nja-rla* milpa-jarra + ju
ADMON-2sg see-INF-SEQ-see-INF-SEQ eye-DU-ABS + EUPH
mata-jarri-mi.
tired-INCH-NPST

---

11. Nominals with complementizer suffixes also undergo reduplication:
warlu -karra -warlu -karra -rlu
fire -SSCOMP -fire -SSCOMP -ERGATIVE
while involved with the fire [Hnotes 135]
Observe that ERGATIVE case attaches at the end, showing that this is not a simple case of repetition.

Your eyes can get tired from looking at it (a very long train going by). [lurrku-ngunami]

(62) Lalka-jarri-ja kurdu wita *yula-nja-rla-yula-nja-rla.*
stiff-INCH-PAST child small-ABS cry-INF-SEQ-cry-INF-SEQ
The baby went stiff and unconscious after crying and crying. [lalka]

((61) and (62) could be analysed as simple syntactic repetition. Observe however that in (60), the ERGATIVE suffix occurs only on the last element, suggesting that this is not an instance of syntactic repetition.

Distribution provides other evidence for the complex [[V + INF] + COMP] being a nominal. Case suffixes can attach to such complexes too, as in (60), as well as in (63).

(63) *jarnti -rninja -karra -rlu*
trim -INF -SSCOMP -ERGATIVE
while trimming it.

A third argument for the [[V + INF] + COMP] construction being a nominal comes from the fact that nominalized verbs with complementizer suffixes attached can form complex verbs with the CAUSATIVE. Since the CAUSATIVE attaches to N or N^{-1} otherwise, the subcategorization frame of the CAUSATIVE requires no addition, if [[V + INF] + COMP] is an N or an N^{-1}. In (64) and (65), not only is there a CAUSATIVE attached, but the [[V + INF] + COMP] has undergone nominal-type reduplication.[12] Such structures, however, are rare, and may reflect the influence of languages to the east, like Warumungu, in which nominalized verb + causative constructions are more common.

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12. Mary Laughren pointed out to me that this type of reduplication with the DATIVE suffix in its *purposive* sense (or DATIVE) is occasionally found with nominals too:

kulu-ku-kulu-ku-mani	'make angry'	> *kulu*	action nominal
yinka-ku-yinka-ku-mani	'make laugh'	> *yinka*	action nominal
wanka-ku-wanka-ku-mani	'incite erection'	> *wanka*	?ordinary nominal

Wanka is normally used as an attribute, meaning 'raw, green'.

(64) Kajika-ju juju-ngku *yula -nja -ku -yula -nja -ku -ma -ni.*
POT-1sg devil-ERG cry -INF -DAT -cry -INF -DAT -CAUS -NPST
The evil one can make me cry. [mani]

(65) Ngaka -lu-jana wangka-nja-wangu-rla
later -3pl-3pl speak-INF-PRIV-LOC
wangka -nja -ku -wangka -nja -ku -ma -nu.
speak -INF -DAT -speak -INF -DAT -CAUS -PAST
Later, although they were not supposed to speak, they made them speak. [wangkanjaku-wangkanjaku-mani]

However, calling the structure [V + INF] an N or N^{-1} faces two difficulties.

First, unlike ordinary nominals, $[\ V + INF\ ]_N$ cannot appear in isolation. It must have an overt suffix attached. Thus it cannot appear as N^{-1} in $\overline{N}$, and it cannot appear with ABSOLUTIVE case (i.e. the unmarked morphologically null case-suffix). Nor can it appear as the matrix predicate. The following uses are all unacceptable:

(66) **With overt case-suffix attached**
******parnka-nja ngarrka-ngku*
run-INF man-ERG
the running man (ERGATIVE)

(67) **With default ABSOLUTIVE case**
******Parnka-nja* ka mata-jarri-mi
run-INF-ABS PRES tired-INCH-NPST
The running one is getting tired. [made-up]

(68) **As matrix predicate**
******Ngarrka parnka-nja*
man-ABS run-INF
The man is running.

Second, the type of function that a nominalized verb can have is strictly limited. Nominalized verbs cannot appear as sentential SUBJECTs or OBJECTs. Certain other case-suffixes, such as PERLATIVE and ELATIVE, must also be blocked. The restriction cannot be purely morphological, because, although ERGATIVE case can occur on a [V + INF], it can ONLY do so if it bears the *instrumental* semantic relationship. A nominalized verb cannot appear as the ERGATIVE SUBJECT of a sentence. But the ERGATIVE

case-suffix is morphologically the same in both uses.

However, the general rule of free assignment of grammatical functions allows any $\overline{N}$ generated in the phrase structure to have the function SUBJECT, OBJECT etc., and so produces these ill-formed constructions. Let us consider some examples. (69) illustrates a *karra* clause being used as a sentential SUBJECT. To the best of my knowledge, (69) is not a possible sentence under the interpretation given.[13]

(69) **Parnka-nja-karra* *ngurrju*
run-INF-SSCOMP good
Running is good.

Observe that the problem does not lie in the fact that the argument is a nominalized verb; (69) would be equally unacceptable if the *karra* were attached to a action nominal *manyu*: *I like being playful.*

Both these generalizations seem to apply to action nominals and semantic case-suffixes as well. These share with nominalized verbs the feature [dependent tense]. The two generalizations can be expressed in terms of conditions on the appearance of the feature [dependent tense], but I will postpone discussion of this until after I have outlined the morphological structure of complementizer suffixes, and the assignment of functions.

6.4 Complementizer suffix structures

The following structures and assignments of functions must be accounted for:

[1] Nominal + *karra*, where the nominal is an OBLIQUE_{theta}.

[2] Action Nominal + *karra*, where the nominal is an argument-taking predicate.

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13. Mary Laughren suggests that it may be acceptable with the interpretation: *He is good while running.*

[3] Nominalized Verb + *karra*.

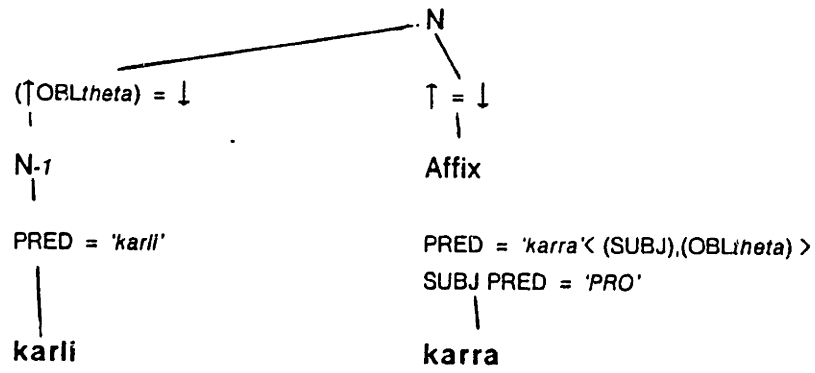
6.4.1 OBLIQUE$_{theta}$ Nominal + *karra*

Consider the sentence:

(70) Wati ka nyina-mi *karli-karra*.
man-ABS PRES sit-NPST boomerang-SSCOMP-ABS
The man sits involved with a boomerang.

Semantically, *karli-karra* attributes the property to *wati*, 'the man', that he is involved in some unspecified way with a 'boomerang'. In the syntax, *karli-karra* will be assigned the function ADJUNCT. This ADJUNCT must have an argument-taking predicate, and I propose that in this case, the argument-taking predicate is the suffix *karra*. That is, I propose to treat *karra* like the *ATP* use of a case-suffix. The morphological structure of *karli-karra* is given in (71).

(71)

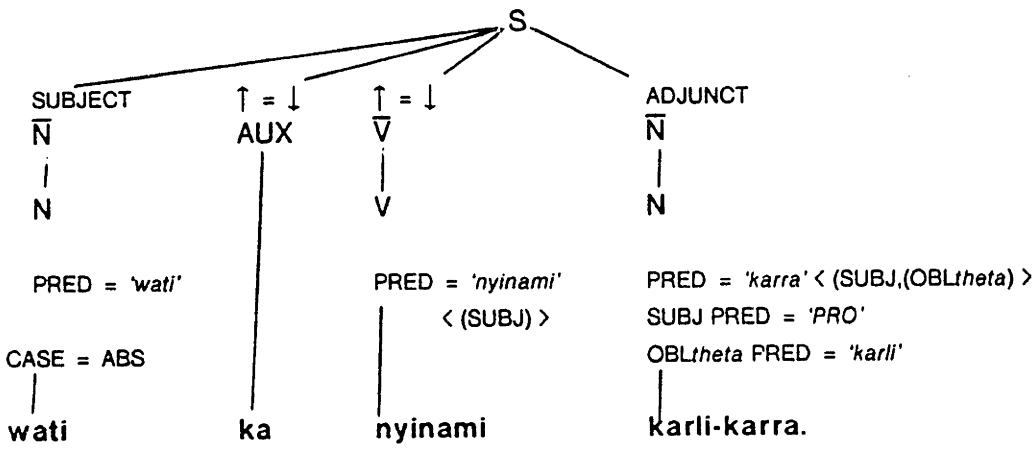


When discussing the information provided by the parts of a nominal with *ATP* case, I noted that this should be represented by instantiating the metavariables ↑ and ↓ by variables. For ease of exposition, however, I decided to combine the information in the form of long equations, rather than confuse the reader with variables. I will use the same device for the complementizer suffixes. In the annotated c-structure tree, then, the equations attached to the N^{-1} *karli*, and the complementizer suffix *karra* will appear

together as equations attached to N. N thus has the union of the features of the case-marker and the N^{-1}. *Karra* selects a SUBJECT and an $OBLIQUE_{theta}$, like *ATP* case suffixes. *Karli* is the $OBLIQUE_{theta}$ of *karra*. Because *karra* is an argument-taking predicate, it can introduce a null pronominal to act as SUBJECT, by means of the equation (↑SUBJ PRED) = 'PRO'.

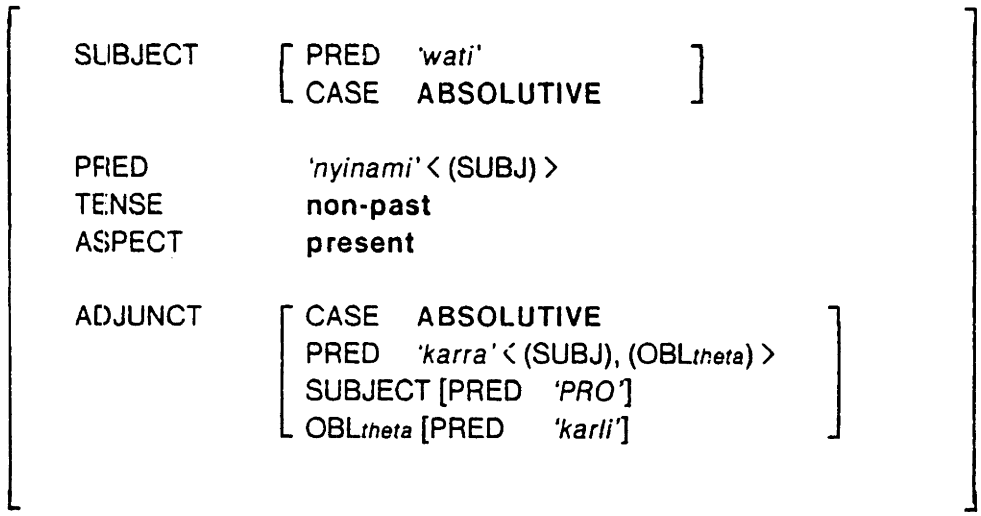
The c-structure tree for (70) follows.

(72) **C-structure for nominal + complementizer suffix**



The functional structure for (70) is given in (73).

(73) F-structure for nominal + complementizer suffix



6.4.2 Action Nominal + karra

In the examples discussed in the previous section, *karra* acts as the functional head of the structure, and provides the argument-taking predicate, while the nominal to which *karra* attaches acts as an OBLIQUE$_{theta}$ of that predicate. In this section I describe the case where the *nominal* acts as the functional head and provides the argument-taking predicate for the structure.

Action nominals can appear with *karra*, predicated of the matrix SUBJECT, as the following examples show:

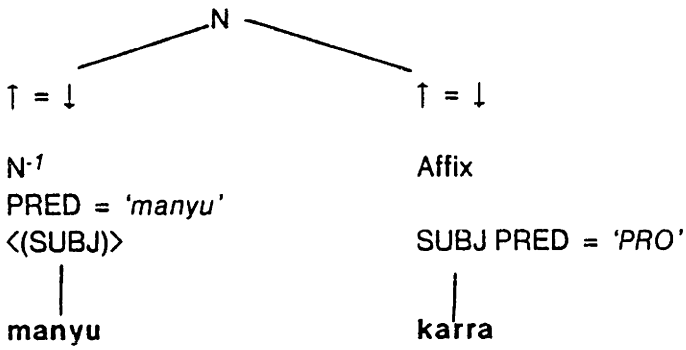
(74) H. Kala *wirlinyi-karra-rlu* ka-lu yuju-ma-ni.
BUT hunting-SSCOMP-ERG PRES-3pl use-CAUS-NPST
But they would use it during hunting.
G. Yuwayi, *wirlinyi-karra-rlangu-rlu.*
Yes hunting-SSCOMP-E.G.-ERG
Yes, in hunting for example.
[from: transcription and comments on a tape of Warlpiri sign language made by Judy Kegl and David Nash.]

(75) Ngapa-ngka + lku panu-ngku *manyu-karra-rlu* nga-rni(yi).
water-LOC + THEN many-ERG play-SSCOMP-ERG eat-NPST
A whole lot of them would eat at the water-hole, while playing. [H66PSJ: 1105]

(Note that this example has a gapped PRESENT ASPECT marker).

The morphological structure of *manyu-karra* is given in (76).

(76)

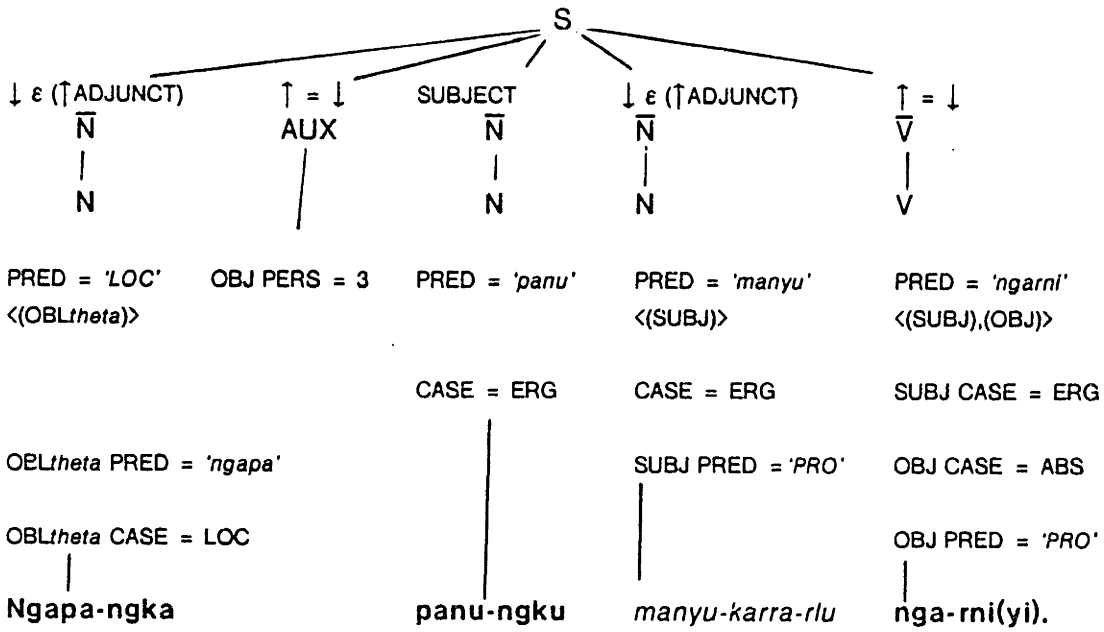


In contrast to the example with *karli-karra*, here the action nominal *manyu* provides the lexical form (functional head) for the whole N. I express this by assigning ↑ = ↓ to *manyu*, rather than the function OBLIQUE$_{theta}$.

For *karli-karra*, I claimed that *karra* introduced a null pronominal as its SUBJECT (represented by the equation (↑SUBJ PRED) = 'PRO'), just as normal argument-taking predicates can do. Here, I also want to claim that *karra* introduces the equation (↑SUBJ PRED) = 'PRO', even though it is not the functional head for the complex. I claim that *karra* obligatorily introduces a null pronominal SUBJECT. This differentiates *karra* from case suffixes, which can, but do not necessarily, introduce a null pronominal SUBJECT. Nominals with *ATP* case-suffixes do not have to be predicated of an argument; they can be predicated of the sentence as a whole, in which event they do not select a SUBJECT. *Karra* clauses are always controlled, and, as far as I know, cannot have lexical SUBJECTs. If *karra* obligatorily introduces a null pronominal SUBJECT (i.e. has the equation (↑SUBJ PRED) = 'PRO' as part of its lexical entry), then it cannot appear with a lexical SUBJECT, and it must be predicated of an argument, not of the proposition.

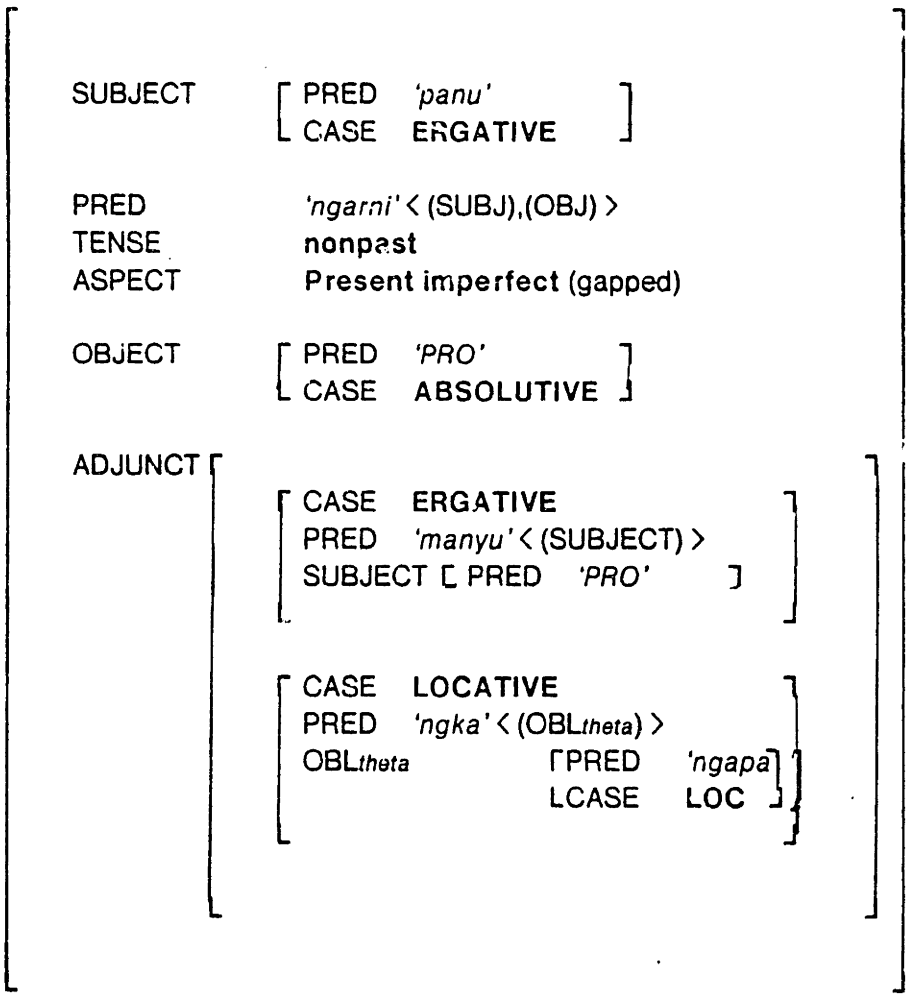
A simplified c-structure for (75) is given in (77). Since there are two ADJUNCTs, I spell out the equation ↓ ε (↑ADJUNCT) in full. The AUX is null, and I have chosen only to represent the equation of the OBJECT in the AUX, because it is not represented overtly, whereas the SUBJECT is overt, *panungku*. (The verb introduces a null pronominal for the OBJECT.) I also omit the clitic *lku*.

(77) **C-structure for action nominal + complementizer suffix**



The f-structure for the same sentence is given in (78). Observe that both ADJUNCTs are generated as individual f-structures within a larger ADJUNCT f-structure, because the function ADJUNCT is realized by a <u>set</u> of f-structures, not by a single f-structure.

(78) F-structure for action nominal + complementizer suffix



6.4.3 Nominalized Verb + *karra*

Evidence for treating nominals and nominalized verbs with the same complementizer suffix alike comes from *conjunction*. A nominal and a nominalized verb can be conjoined, whether the nominal is an action nominal as in (79), or an ordinary nominal as in (80), or a nominal with another complementizer suffix attached, as in (81).

(79) Tija-ngku ka-jana nya-nyi *yirra-rninja-kurra* *manu* *manyu-kurra.*
teacher-ERG PRES-3pl see-NPST put-INF-OCOMP and play-OCOMP
The teacher watches them writing and playing. [Witawitakurlu]

(80) Nyampu + ju punku *paniya-ku* *manu* *nga-rninja-ku.*
this bad-ABS eye-DAT and eat-INF-DAT
This (herb) is bad for eyes and for eating. [NN]

(81) Langa-kurra-jarri-ja -ju yalumpu + ju kuja-npa-ju ngarru-rnu
ear-ALL-INCH-PAST -1sg that.near REL-2sg-1sg tell-PAST
ngurrju *nyina-nja-ku* *pama-wangu-ku.*
good-ABS sit-INF-DAT alcohol-PRIV-DAT
It has sunk in, what you told me about behaving well and doing without grog.
[langa-kurra-jarrimi]

Like the Nominal + complementizer construction, they are assigned the function ADJUNCT or OBLIQUE or possibly XCOMP in the syntax, Morphologically, nominalized verb + complementizer constructions are accounted for in essentially the same way as action nominal + complementizer constructions. The argument-taking predicate of the ADJUNCT is the nominalized verb, and not the complementizer suffix. Consider a typical construction with a nominalized verb.

(82) Ngarrka ka wirnpirli-mi, [*karli* *jarnti-rninja-karra*].
man-ABS PRES whistle-NPST boomerang-ABS trim-INF-SSCOMP-ABS
The man is whistling, while trimming a boomerang.

The argument-taking predicate of the ADJUNCT is *jarntirninja*. *Karra*, as usual, provides a PRO SUBJECT for the predicate. Additional complexity is introduced by the fact that the verb itself is subcategorized for other arguments. Furthermore, a non-finite verb can appear as a single constituent in front of the AUX with all its complements, as (83) illustrates.

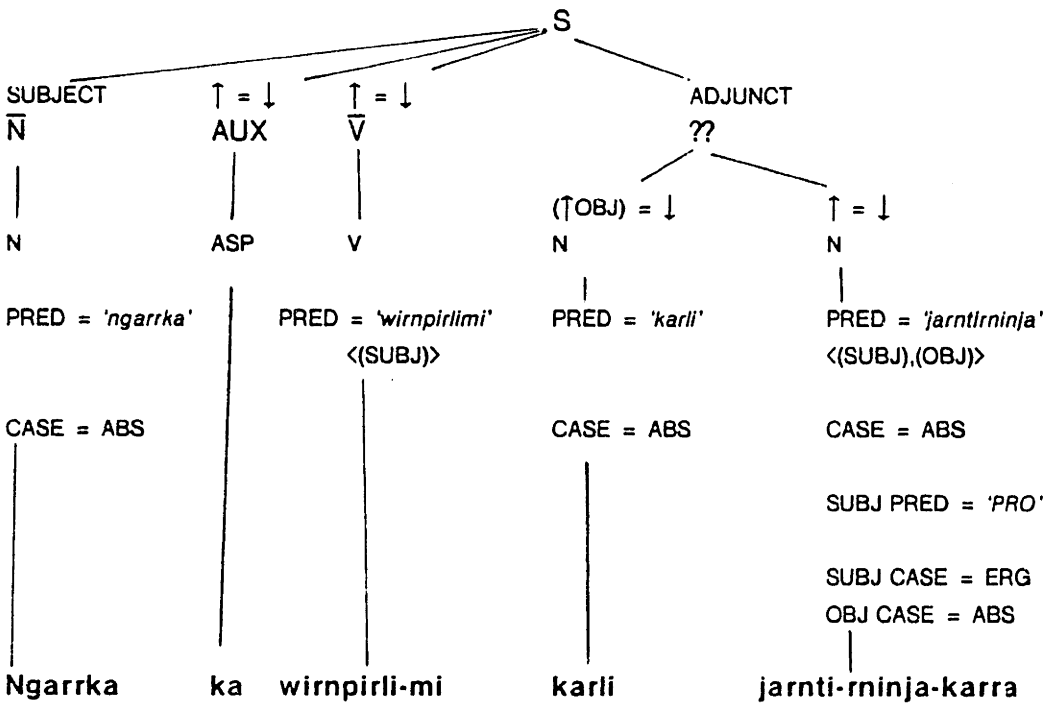
(83) *Purlapa* *pi-nja-karra-rlu* kala-lu pirlirrpa yilya-ja.
corroboree-ABS dance-INF-SSCOMP-ERG USIT-3pl spirit-ABS send-PAST
By dancing a corroboree they would send away the spirit. [NK]

(The AUX cannot intervene between a complement of a non-finite verb, such as *purlapa*, and the non-finite verb, unless, as I will discuss in 6.6.6, *purlapa* is marked with the

complementizer suffix also).

Therefore, a phrase structure rule is needed which will treat the nominalized verb and its complements as a single constituent. Before discussing this, consider the simplified c-structure for (82) given below.

(84) **C-structure for nominalized verb + complementizer suffix**



I put ?? for the category expressing the ADJUNCT, because the normal3 N̄ rule (37) given in Chapter 4 cannot be used for these nominalized verb constructions. I repeat the rule here for convenience.

(85) **Revised N̄ expansion rule**

$$\bar{N} \rightarrow N^* \qquad N^* \qquad \left\{ \begin{array}{l} (N) \text{ (or perhaps } \bar{N}) \\ (\downarrow \in (\uparrow \text{ADJUNCTS})) \\ \\ N \end{array} \right\} \qquad N^*$$

There are two major reasons why this rule does not apply. First, the structure can contain nominals which do not have the same case as the nominalized verb, as (86) shows.

(86) Ngarrka-ngku ka purlapa yunpa-rni, *karli*
man-ERG PRES corroboree-ABS sing-NPST, boomerang-ABS
jarnti-rninja-karra-rlu.
trim-INF-SSCOMP-ERG.
The man is singing a corroboree while trimming a boomerang. [EFW]

In this example, the nominalized verb is marked ERGATIVE while the OBJECT of the nominalized verb is marked ABSOLUTIVE.

The second reason why the ordinary $\overline{N}$ rule is insufficient is that the daughters of the $\overline{N}$ can be N or N^{-1}, but not $\overline{N}$. But in fact an $\overline{N}$ can appear as the object in the sentence given – e.g. *karli wiri* ' a big boomerang'. Since it seems clear that the nominalized verb is a nominal, I therefore propose a second $\overline{N}$ rule:

(87) **Second phrase structure rule for expanding $\overline{N}$**

$$\overline{N} \quad \rightarrow \quad \overline{N}^{*} \qquad N$$
$$\uparrow = \downarrow$$

I am assigning the head ($\uparrow = \downarrow$) to the last element, because, although 'leaked' infinitivals (ones in which an element is *leaked* to the other side of the "head" – the element with a complementizer suffix) exist (and appear in some of the examples given),

they are rather rare.[14] I assume that, apart from the head, grammatical functions are assigned freely within this structure. Thus an $\bar{N}$ within this structure can be a SUBJECT, OBJECT, OBLIQUE etc. An $\bar{N}$ can only be a SUBJECT if the complementizer suffix does NOT obligatorily introduce a pronominal SUBJECT. Otherwise, *consistency* would be violated. I will discuss later some instances of lexical SUBJECTs in non-finite clauses.

The f-structure corresponding to the c-structure (85) follows:

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14. Examples of *leaked* infinitives are given in i. and ii. In i. the DATIVE argument of *rdipimi* follows the infinitive.

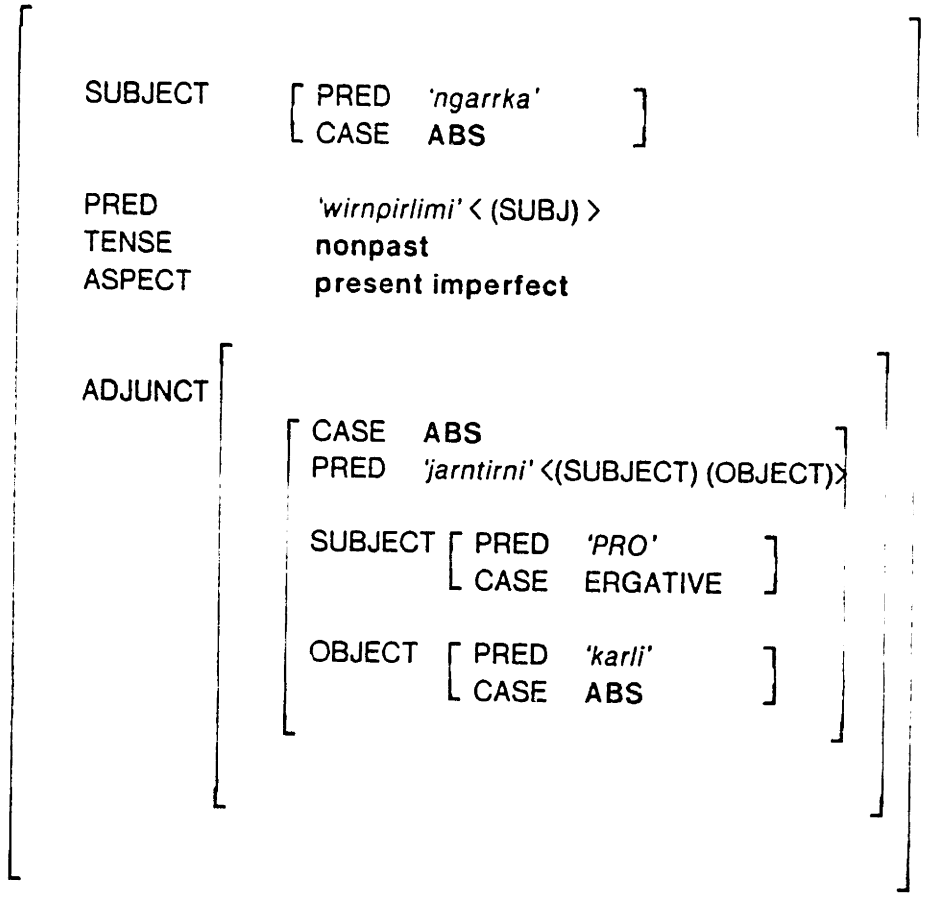
i. *Lawa* *ka-rna* *nyina – –* *rdipi-nja-wangu* *marlu-ku + ju.*
OK PRES-1sg sit-NPST meet-INF-PRIV kangaroo-DAT + EUPH
I haven't come across a single kangaroo. [rdipimi]

ii. *Karnta-patu-kari* *-li* *ya-nu* *ngapa-ku* *ma-ninja-ku*
woman-PL-OTHER-ABS -3pl go-PAST water-DAT get-INF-DAT
kartaku-rlu.
billycan-ERG
Some other women went to get water in billycans. [JMK]

iii. *Yilya-ja* *-palangu* *ngapa* *ma-ninja-ku* *ngami-kirli.*
send-PAST -3du water-ABS get-INF-DAT water.carrier-PROP-ABS
He sent the two off to get water with a wooden water-carrier. [yilyami]

In ii. an ERGATIVE adjunct predicated of the understood PRO SUBJECT of the non-finite clause follows the nominalized verb. It cannot be treated as an ADJUNCT predicated of the controller (i.e. the matrix SUBJECT), because the controller has ABSOLUTIVE CASE. This contrasts with iii. in which the ABSOLUTIVE *ngamikirli* can readily be treated as an attribute of the ABSOLUTIVE OBJECT, rather than of the understood ERGATIVE SUBJECT of the subordinate clause.

(88) F-structure for nominalized verb + complementizer suffix



Observe that the second phrase structure rule makes the prediction that, if a nominal selects an argument, as , for example, the nominal *ngampurrpa* 'desirous' selects a DATIVE argument representing the object of desire, the nominal should be able to act as the head of a constituent containing a DATIVE-marked nominal acting as its argument. In fact, this prediction is borne out by some data collected by David Nash.

(89) Mulju-jangka -ju-lu wapirdi-paka-rnu *ngapa-ku*
soakage-SOURCE -1sg-3pl hit-PAST water-DAT
ngampurrpa-rlu.
desirous-ERG

Ngapa-ku ngampurrpa-rlu -ju-lu wapirdi-paka-rnu
water-DAT desirous-ERG -1sg-3pl hit-PAST
mulju-jangka(+ ju).
soakage-SOURCE(+ EUPH)

Wanting water, they hit me as I arrived from the soakage. (David Nash, January, 1983).

The ERGATIVE nominal *ngampurrpa-rlu*, which is predicated of the SUBJECT of the sentence, can appear as a single constituent in front of the AUX together with the DATIVE nominal it selects, *ngapa-ku* 'water'.[15]

6.5 The complementizer suffixes

In this section, I outline the semantic properties of complementizer suffixes. These include their *control* properties, both what argument may be controlled and what may be an controller, and also their *time-reference*.

I first show that anaphoric control of non-finite clauses in Warlpiri can be represented, as Bresnan (1982a) suggests, in terms of the same mechanisms that are independently required to specify the antecedent relations of reflexives. I then discuss the uses of the dependent tense features, concluding that, while semantic interpretation can block some incorrect assignments of functions to elements with dependent tense, some conditions must still be placed on the assignment of functions to elements with dependent tense, both in $\overline{N}$ and S, in order to capture certain distributional generalizations about action nominals, nominalized verbs and semantic case nominals. Finally, I describe the classes of complementizer suffix in Warlpiri in terms of their antecedent properties and dependent tense features. In the course of this discussion, I examine the representation of overt lexical SUBJECTS, an instance of OBJECT control, as well as some apparent instances of discontinuous expressions marked with the same complementizer suffix.

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15. Mary Laughren informs me that nominal compounds can be formed from a nominal and the DATIVE nominal it selects; for instance

sober-ku-ngurrpa
sober-DAT-ignorant
"Ignorant of sobriety"a nickname.
(This is used as a nickname.)

6.5.1 An account of anaphoric control

Like normal pronouns, null pronominals (PROs) can be anaphoric or non-anaphoric, that is, bound or free. PRO is free in matrix clauses, such as the following.

(90) Parnka-mi ka.
run-NPST PRES
He is running.

Null pronominals are normally introduced by argument-taking predicates. Disjoint reference of free PROs, and the antecedent of bound PROs are represented by the antecedent features introduced in the discussion of reflexives in 2.3.3 and 2.3.4. To represent the fact that null pronominals introduced by the verb in finite clauses must be disjoint in reference from other arguments of the verb, I assumed that the default equations introduced by the AUX contain the antecedent feature [– NUCLEAR]. This means that the antecedent of a null pronominal must be in a domain external to the minimal clause in which it finds itself. Thus a PRO non-SUBJECT argument introduced by the verb cannot be controlled by a SUBJECT; it obeys disjoint reference. Instead such an argument must be expressed by a reflexive pronominal clitic *nyanu*.

(91) Jampi-rni ka-*nyanu*.
lick-NPST PRES-refl
She (cow) is licking herself. [H59Notes]

This clitic introduces the equation (↑PRED) = 'PRO', Here, the reflexive pronoun *nyanu* introduces a null pronominal PRO which is bound to a null pronominal SUBJECT introduced by the verb. This is expressed by assuming that the PRO introduced by the reflexive clitic has the antecedent feature [+ SUBJECT].

I intend to use the same mechanisms to express anaphoric control of null pronominals in non-finite clauses. I claim that the SUBJECT of clauses with the SSCOMP suffix *karra* is a null pronominal. As a pronominal, it is liable to anaphoric control. But as a null element it cannot specify its antecedent features, because it has no lexical entry to contain those antecedent features. Instead, the antecedent features for the PRO must be introduced by some overt lexical item, in this case the suffix *karra*. I claim that the suffix

karra places the restriction on the null pronominal SUBJECT PRO that it has the antecedent feature [- NUCLEAR]. Therefore it has to find an antecedent outside the nominalized verb. Exactly what the antecedent can be, depends on the particular complementizer suffix. *Karra* places the further constraint on the PRO SUBJECT which it introduces, that the antecedent of this PRO be a SUBJECT. Let us examine this claim more carefully.

The major difference between *karra* and a semantic case suffix is that *karra* imposes *functional* requirements on its antecedent. Its antecedent must agree with it in case - that is only to be expected, since *karli-karra* has the function ADJUNCT, and ADJUNCTs agree with their antecedents in case, by the *Agreement Convention*. But, as Carrier (1976), Hale (1982b), Nash (1980), and Simpson and Bresnan (1982) show, case does not suffice to determine the controller of a *karra* clause, because, while a *karra* clause can be controlled by an ABSOLUTIVE SUBJECT, it cannot be controlled by an ABSOLUTIVE OBJECT, and, given ERGATIVE case-marking, it can be controlled by an ERGATIVE SUBJECT.

(92) illustrates control of a *karra*-marked nominal by an ERGATIVE SUBJECT.

(92) Ngarrka-ngku ka miyi nga-rni *karli-karra-rlu.*
man-ERG PRES food-ABS eat-NPST boomerang-SSCOMP-ERG
The man is eating food while involved with the boomerang. [EFW]

To describe within LFG the constraints on antecedents of controllers, I follow Simpson and Bresnan (1982) in extending the account of antecedent features for reflexive pronouns to controllers in Warlpiri. In that paper, it was assumed that antecedent features are independent features, (defined, however, in terms of grammatical functions) Here, I shall assume that antecedent features are simply the features used to decompose grammatical functions (see 2.3.4), with the added requirement that they specify the *antecedent* of an element. Thus, the reflexive in the sentence *John loves himself* has the function OBJECT, which may be decomposed into the features [+ OBJECT - SUBJECT], and has the *antecedent features* [+ SUBJECT - OBJECT], indicating that its antecedent is a SUBJECT. To represent the difference between antecedent features and grammatical function features, I shall use quotation marks around the latter: ["SUBJECT" = +].

Finally, to represent the fact that *karra* does not ever have a lexical SUBJECT, I assume that it *obligatorily* introduces a null pronominal SUBJECT. Then of course a lexical SUBJECT can never appear, because there would be a *consistency* clash between the overt lexical SUBJECT and the PRO SUBJECT.

To conclude, the lexical entry for the suffix *karra* contains the equations:

(↑SUBJ "SUBJECT") = +.

(↑SUBJ NUCLEAR) = -

(↑SUBJ PRED) = 'PRO'

These equations represent the fact that the *karra* clause must be controlled by a SUBJECT.

In the next section I will show how differences in dependent tense can be represented within LFG, and I will show that assuming a feature of [DEPENDENT TENSE] has several useful consequences.

6.5.1.1 **Dependent tense**

It is sometimes assumed that finite and non-finite clauses are distinguished by tense; finite clauses are said to be tensed, and non-finite clauses to be tenseless. In languages such as English this assumption is reinforced by the existence of several morphologically distinct forms of finite verbs indicating different time-reference, which contrasts with the comparative lack of differentiation within non-finite clauses. The fact that non-finite clauses in English do have different time references (infinitives usually denote a state which has not yet been realized at the time of the action denoted by the finite verb, while participles denote a state contemporaneous with that of the finite verb) is clouded by the use of compound tenses within non-finite clauses (*to have gone*, *having gone*), by the use of infinitives as arguments of verbs such as *believe* (in which the unrealized sense of the infinitive is lost), and by constraints preventing certain types of verbs (modals) from appearing in non-finite clauses (their absence is sometimes attributed to an inherent

tense property). In Warlpiri, however, these obscuring factors are absent, and it seems clear that non-finite clauses do not lack a time-reference. Rather, their time-reference is dependent on that of the matrix argument-taking predicate.[16] I call the property of having a time-reference dependent on that of a finite verb *dependent tense*. This property is particularly striking in languages such as Warlpiri, in which there are several different types of non-finite clause, which differ in their time references. A complementizer suffix can specify whether the action denoted by the non-finite verb to which the sffix is attached takes place before, during, or after the action denoted by the finite argument-taking predicate upon which the non-finite clause is dependent.

In a sense, a dependent tense marker is an anaphor, whose interpretation depends on the tense of the matrix argument-taking predicate. I propose to represent dependent tense by means of the features [+ TENSE] [+ DEPENDENT], which I will abbreviate for convenience to [+ dependent tense]. Certain complementizer suffixes, *ATP* case-suffixes and action nominals share these features. I will use the idea that the interpretation of this feature depends on the presence of a finite argument-taking predicate to represent certain properties which these suffixes and nominals have in common.

The tense suffixes which attach to finite verbs can be represented in terms of a distinctive feature system, and the differences between dependent tense suffixes can be

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16. Stowell (1981: 40-51) suggests that the feature [± TENSE] distinguishes NPs from $\bar{S}$ in English. This requires him to argue that to-infinitives are [+ TENSE]. He writes:

> *English to-infinitives lack the morphological feature [± PAST], but this does not mean that they have no abstract tense operator. Rather, their status as being neither present nor past has the effect of specifying that the time-frame of the clause is unrealized with respect to the tense of the matrix within which the infinitival appears.* (Stowell, 1981: 41)

In Stowell (1982) a number of interesting consequences are derived within the GB framework from assuming that infinitives have tense.

represented by a subset of these distinctive features.[17] A table is presented below.

(93) **Dependent Tense features**

DEPENDENT-TENSE	*Prior action*	*Simultaneous action*	*Subsequent action*
FEATURE			
PAST	+	–	–
UNREALIZED	–	–	+

I assume that the negative values are the unmarked values, and act as a default specification. If a suffix has dependent tense but is not marked for a particular feature, then it is assumed to be negatively marked. For instance, *ATP* case-suffixes, unless otherwise specified, have the unmarked values for dependent tense. Thus, when they are

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17. The five main tenses on finite verbs can be distinguished using the features [±PAST], [±UNREALIZED], and [±HEARER-DIRECTED]

TENSE FEATURE	Non-past	Past	Imm-future	Imper	Presentnl	Irr
PAST	–	+	–	–	–	unspec.
UNREALIZED	–	–	+	+	–	+
HEARER-DIRECTED	–	–	–	+	+	–

[UNREALIZED] covers events that have not yet taken place, and groups together the Imperative, the Irrealis and Immediate Future. [PAST] opposes the Past tense to the other inflections. [HEARER-DIRECTED] opposes the Presentational Present and the Imperative to the other inflections, by using the idea that both Imperatives and Presentationals make reference to the Hearer. The Imperative represents a speech-act directed towards a Hearer, while a Presentational directs the attention of the Hearer to some particular point.

The Irrealis is formed by suffixing the morpheme *rla* to the Imperative. If it is assumed that *rla* is the morphological head, then its features take precedence over those of the form to which it attaches. I claim that, unlike the Imperative, it is not Hearer-directed, and so the Irrealis also is not Hearer-directed. In order to distinguish the Irrealis from the Immediate Future, I have been forced to resort to a third value, namely "unspecified", for the PAST value of the IRREALIS.

used as argument-taking predicates, the time reference of the state which they denote is simultaneous with that of the finite verb. For example, when the ERGATIVE is used as an instrumental, it describes a state simultaneous with that of the main action. When case-suffixes attach to nominalized verbs, they maintain the same tense-features. [18]

I claim that the action nominals described in 2.4 share this property of *dependent tense*, and have the unmarked values. If they are marked with a case or complementizer suffix, however, and that case or complementizer suffix has marked values for a particular tense feature, the marked values are adopted. I give a number of examples below with the action nominal *wirlinyi* 'hunting'.

(94) a. **Prior action**
Ngula-jangka -rlipa pina-rni ya-nu turaki-kirra.
that-SOURCE -1plin back-HERE go-PAST truck-ALL
wirlinyi-jangka kuyu-kurlu.
hunting-SOURCE meat-PROP-ABS
After that, we went back to the truck after hunting, with game. [jirrama-kari-jirrama-kari]

b. Kala nyampu + kula ka-lu nyanungu miyi-pardu-parnta
BUT this + CONC PRES-3pl the veg.food-DIM-PROP-ABS

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18. Hale (n.d.a and 1982b.) suggests that the differences in meaning between the spatial cases in Warlpiri hinge on the ideas of *central coincidence* and *terminus* (*Source* or *End-point*). LOCATIVE is a case positively specified for *central coincidence*, and ELATIVE and ALLATIVE are specified for *terminus* (*Source* and *End-point* respectively). Looking at *central coincidence* and *terminus* with respect to time rather than space, it is then not surprising that *central coincidence* should be used for *simultaneous action*, (as with the LOCATIVE when attached to nominalized verbs), and that *terminus* should be used for prior or subsequent action, (as with the SOURCE *warnu*, and the DATIVE *ku* and ALLATIVE *kurra* when attached to nominalized verbs).

However, the ALLATIVE, as well as having a subsequent action purposive use is also homophonous with the *simultaneous* action OBJECT-control complementizer (OCOMP). One could perhaps consider these two uses as differing in dependent tense features. The purposive of the ALLATIVE use has the marked positive value for the feature [UNREALIZED], while the simultaneous action use has the unmarked negative value for the feature [UNREALIZED]. (However, there are differences in control properties too, so that this feature is not sufficient to distinguish the two uses.)

wapa *wirlinyi-warnu*
move-NPST hunting-ASSOC
Well, here they are walking around with vegetable foods from hunting. [yukunjukunju]

(95) a. **Subsequent event**
Jiti-ja + lku -rlupa *wirlinyi-kingarnti.*
descend-PAST + THEN -1plin hunting-PREP-ABS
Then we got down (out of the truck) to go hunting. [jitimi]

b. Watiya-rlu -jana jurnta-lalypa-ma-nu taya + ju
tree-ERG -3pl away-flat-CAUSE-PAST tyre-ABS + EUPH
wirlinyi-kijaku.
hunting-ADMON
The stake flattened their tyre so they could not go hunting. [lalypa]

c. Kaji-rna ya-ni Yurntumu-kurra, ngula + ju ngarra-ju-lu
IF-1sg go-NPST Yurntumu-ALL that FUT-1sg-3pl
wirlinyi-ki yilya-mi.
hunting-DAT send-NPST
If I go to Yuendumu they will send me out hunting. [yilyami]

Now that I have outlined the feature system for representing dependent and independent tense, I will present the problems which I hope to capture by means of this system.

First, whereas ordinary nominals can act as matrix predicates, bare nominalized verbs and most bare action nominals[19], nominalized verbs and action nominals with most complementizer suffixes, and most semantic case-suffixes cannot act as matrix

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19. As I mentioned in 2.4, the action nominals do not form a homogeneous class, and more work is needed to determine the relationship between their meanings, and their syntactic behaviour. For instance, *jarda* 'sleep', which Mary Laughren informs me is both a state and an activity, appears freely as a matrix predicate, and unlike *wirlinyi* 'hunting' (which is an activity) or *manyu* 'play' (which is an activity as well as a property), does not permit the LOCATIVE.

Kurdu *jarda(*-ngka)* *Yuwayi,* *jarda.*
child-ABS asleep(*-LOC) Yes asleep
Is the child asleep? Yes, asleep. [Nash, April, 1983]

I have no explanation for the difference in behaviour between *jarda* and *manyu*.

predicates. I illustrate this below.

(96) **Bare nominalized verb**
*Ngaju parnka-nja
I-ABS run-INF
I am a running one.

(97) **Bare action nominal**
*Ngaju wirlinyi.
I-ABS hunting
I am hunting. [Nash, April 1983]

*Maliki wajili.
dog-ABS chasing
The dog is on a chase. [Nash, April 1983]

(98) **Semantic case-suffix**
*Ngaju Yurntumu-ngurlu
I-ABS Yurntumu-EL
I am from Yuendumu. [made-up]
(Mary Laughren points out that this would be acceptable as a *gapped* sentence.)

(99) **Complementizer-suffix**
*Ngaju parnka-nja-karra.
I-ABS run-INF-SSCOMP
I am running. [made-up]

Compare these with the following acceptable sentences:

(100) Ngaju wirlinyi-rla.
I-ABS hunting-LOC
I am hunting. [Nash, April 1983]

(101) Ngaju -rna manyu-ngka.
I-ABS -1sg play-LOC
I am at play. [Nash, April 1983]

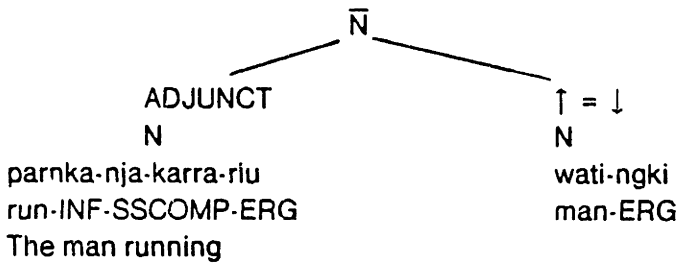
(102) Ngaju -rna pirli-ngka.
I-ABS -1sg hill-LOC.
I am on a hill. [Nash, April 1983]

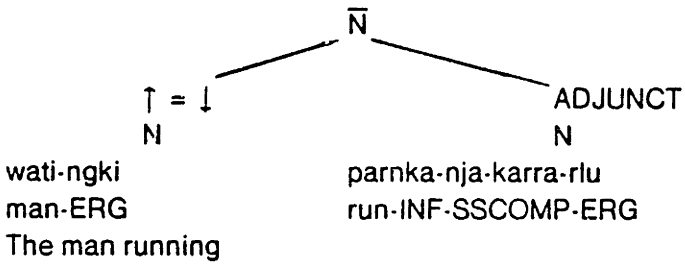
(103) Wirlinyi-wangu ngaju + ju.
hunting-PRIV I-ABS + EUPH

I'm not going hunting. [Laughren, p.c.]

The second problem is to account for the fact that nominalized verbs, nominals with some case-suffixes, some action nominals[20] and elements with most complementizer suffixes cannot appear within $\bar{N}$, acting as ADJUNCTs predicated of some N in that $\bar{N}$. What rules out the following structures?

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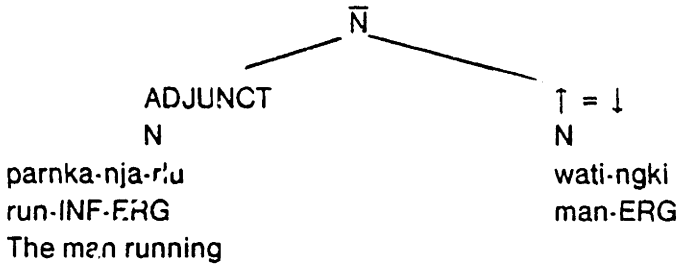
20. The situation with action nominals is not clear. They are rarely found in texts forming single constituents. However, an elicited example of *manyu* forming a single constituent with the nominal it modifies was accepted, as in i.:

i. *Kurdu* *manyu-ngku* *ka-ju* *nya-nyi.*
child play-ERG PRES-1sg see-NPST
The child while playing is looking at me. [Nash, April 1983].
(Mary Laughren informs me that "The playful child" may also be a possible reading.)

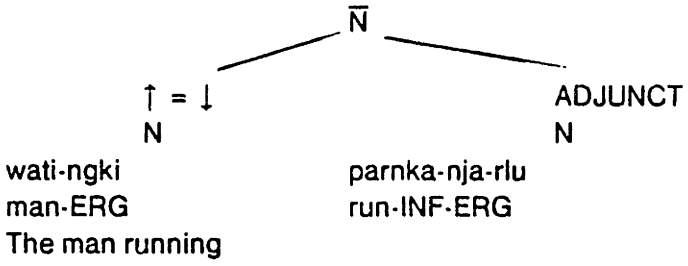
ii. *Ngajulu-rlu* *-rna-rla-jinta* *luwa-rnu* *wirlinyi-rla-ku*
I-ERG -1sg-CON-DAT shoot-PAST hunting-LOC-DAT
ngarrka-ku.
man-DAT
I shot at the man who was hunting. [Nash, April, 1983]

But apparently for *wirlinyi* 'hunting', the preferred strategy is to use *wirlinyi* with the LOCATIVE

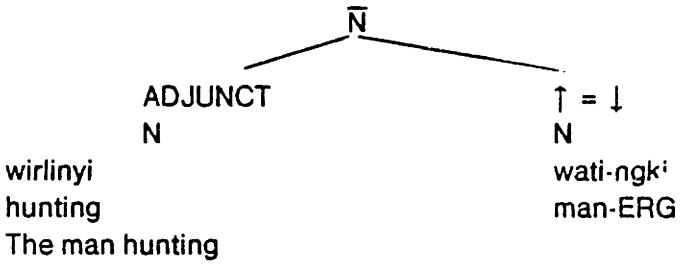
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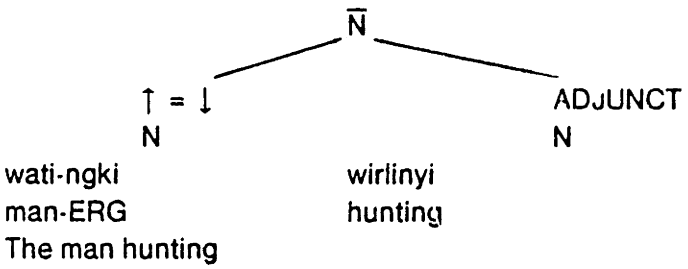


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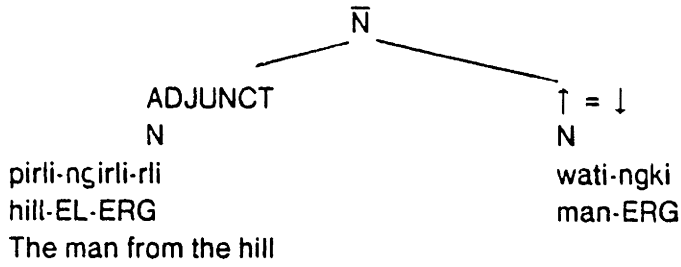
(The unacceptability of this example was confirmed by Nash, April, 1983)

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(The unacceptability of this example has not been confirmed.)

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Compare these with the acceptability of (104).

(104) a. *Pirli-ngka-rlu* *wati-ngki* -nganpa luwa-rnu.
hill-LOC-ERG man-ERG -1plex shoot-PAST
The man on the hill shot us.

b. *Wati* *pirli-ngka-rlu* -nganpa luwa-rnu.
man hill-LOC-ERG -1plex shoot-PAST
The man on the hill shot us. [Nash, April 1983]

The third problem was raised in 6.3.2.1, namely, what prevents a nominalized verb, an action nominal, or an element with an *ATP* case-suffix, or a complementizer suffix, from acting as a sentential SUBJECT or OBJECT? What blocks (105) and (106) from having (so far as we know) the meanings given?

(105) *Parnka-nja* */wirlinyi* ngurrju.
run-INF-ABS /hunting good-ABS
Running/hunting is good. [made-up]
(Mary Laughren suggests that the example with *wirlinyi* may be acceptable. However, I have not found textual examples.)

(106) Ngaju -rna ngampurrpa *pirli-ngka-ku.*
I-ABS -1sg desirous rock-LOC-DAT
I am desirous of being on a rock. [made-up]
(Mary Laughren suggests that this might be acceptable if combined with a nominalized verb with DATIVE, *nyina-nja-ku*.)

Suppose we assume that this class of elements, nominalized verbs, action nominals, *ATP* case-suffixes, and complementizer suffixes have in common the property of *dependent tense.* That is, the time-reference of the event or state or property denoted by this elements is *anaphoric*, dependent on some other time-reference.

Then the first property, that these elements cannot act as matrix predicates, follows from the interpretation of the feature [DEPENDENT TENSE]. A dependent tense is an anaphor, and must be construed with respect to a finite verb. In a main clause, there is no finite verb for it to be dependent on. Therefore no element with the feature [DEPENDENT TENSE] can appear as the functional head of a clause.

LOCATIVE case is the exception; it can sometimes appear as a matrix predicate. However, as I showed in 4.2.2.2, LOCATIVE case has properties in common with derivational case, and may well be doubly classified. That is, it may optionally have the feature [DEPENDENT TENSE]. When the feature is missing, the LOCATIVE suffix can act as a matrix predicate. Attaching it to an element which already has dependent tense, such as *wirlinyi* in (100), blocks transmission of dependent tense. The argument-taking predicate of the whole clause is the LOCATIVE. *Wirlinyi* acts as an OBLIQUE_{theta} argument of the LOCATIVE. The SUBJECT is the SUBJECT of the sentence. A similar analysis would be given for *wirlinyi-wangu*. The PRIVATIVE *wangu*, like the LOCATIVE, only optionally has a [dependent tense] feature, and so can appear as the matrix predicate. If the LOCATIVE and the PRIVATIVE are the morphological heads of the nominals, and if the features of morphological heads percolate unless otherwise specified, it is natural that their negative dependent tense specification should supersede the positive dependent tense specification of the action nominals.

The second property, that these elements may not occur within $\overline{N}$, as an ADJUNCT of the head, can, as I suggested in 4.2.2.1, be accommodated by assuming that within $\overline{N}$ the function ADJUNCT may only be assigned to an element which has no tense property, such as a nominal with a derivational case suffix.

(107) **Revised $\overline{N}$ expansion rule**

$$\overline{N} \rightarrow N^{*} \qquad N^{*} \qquad \left\{ \begin{array}{l} (N)\ (\text{or perhaps } \overline{N}) \\ (\downarrow \in (\uparrow \text{ADJUNCTS})) \\ \neg \downarrow \text{TENSE} \\ \\ N \end{array} \right\} \qquad N^{*}$$

The restriction that the ADJUNCT may not have a tense feature can be expressed as shown, or else a restriction on what functions may be assigned to elements with dependent tense, may be used, such as the one in (108).

(108) *If an element within* $\overline{N}$ *has the feature* [*dependent tense*], *assign it* $\uparrow = \downarrow$.

This condition will rule out the assignment of functions which creates the ill-formed constructions given above. Again. LOCATIVE, by virtue of the optionality of its dependent tense, is allowed to appear in $\overline{N}$s.

Observe that this restriction is language-particular. Languages such as English allow ADJUNCTS of $\overline{N}$ to have dependent tense (*the seal from Sule Skerry, the only seal to escape, the only seal shot at, the only seal still living*)

Can the constraint that elements with dependent tense must be assigned the equation $\uparrow = \downarrow$ be extended to daughters of S? If it could be so extended, this would automatically take care of the third problem, that elements with dependent tense may not act as sentential SUBJECTs and OBJECTs. However, extending it to the S level would also block assigning elements with [dependent tense] the OBLIQUE function, as well as the ADJUNCT function, which is the main function such elements bear. I can see no alternative to placing a condition on the free assignment within S of grammatical functions to elements with dependent tense, which parallels, but is not identical to, the condition on assignment of functions within $\overline{N}$. Within $\overline{N}$, I observed that elements with dependent tense must act as the functional heads. They cannot act as ADJUNCTS. Within S, however, elements with dependent tense can only act as ADJUNCTS (or possibly as OBLIQUEs). I therefore revise the rule assigning grammatical functions within S as follows:

(109) *Within S, assign grammatical functions freely, subject to the constraint that elements with dependent tense features must be assigned either* $\downarrow \in (\uparrow ADJUNCTS)$ *or* $(\uparrow OBLIQUE_{theta}) = \downarrow$.

Again, observe that this constraint is a language particular requirement. English, for instance, allows sentential SUBJECTs, and perhaps also sentential OBJECTs: *They knew that he would shoot at the seal. That he would shoot at the seal was inevitable.*

It is a pity that the elegant simplicity of the rules assigning grammatical functions within S and $\bar{N}$ has been lost, but descriptive adequacy seems to me to require these stipulations.

6.6 Overview of complementizer suffixes

From the preceding sections several parameters along which complementizer suffixes can differ can be inferred. First, complementizer suffixes differ semantically as to what dependent tense they represent. Second, they differ as to what can be the controller. The controllers of clauses with complementizer suffixes belonging to the obviation system,[21] for example, are determined by the *grammatical function* of the controller. Other clauses have their controllers determined in different ways – some by *case* agreement, others by *pragmatic* factors. Third, complementizer suffixes differ as to whether or not they allow overt lexical SUBJECTs. Fourth, the suffixes differ as to whether they can receive additional case-marking.

I group the complementizer suffixes into five classes, roughly based on these four properties.

[1] *Simultaneous action obviation system*: These all describe an event occurring at the same time as the event in the matrix. The suffixes are *karra*, *kurra*, and *rlarni/ngkarni*.

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21. Following Hale (EFW), I use the term *obviation* to refer to the *exclusion* of certain arguments as possible antecedents for anaphors. For example, in an obviation system, the antecedent of a certain anaphor may be required *not* to be a subject. The term was borrowed by Hale from American Indian linguistics. See Hale (1978) for an account of obviation in Modern Irish, and Bresnan (1982a) for an application to English.

[2] *Subsequent action* suffixes: These are suffixes which describe events subsequent to that of the matrix clause. The basic suffix in this class is the purposive use of the DATIVE suffix *ku*; it corresponds most closely to the English infinitive. Other members of this class are formed on the basis of *ku*: *kungarnti* 'prior to doing X', (PREP) *kupurda* 'desirous of doing X' (DESIR), and the ADMONITIVE *kujaku*. The purposive use of the ALLATIVE *kurra* is also included in this class.

[3] *Circumstantial* suffixes: The two suffixes *rla* (SEQ) and *puru* (CIRC) describe attendant circumstance. *Rla* describes an event or state of affairs prior to that of the matrix clause. *Puru* normally describes the presence of a state of affairs, (for instance, the weather), concurrent with that of the matrix clause.

[4] *Derivational* suffixes: These fall into two types: derivational suffixes such as *kurlangu* POSSESSIVE, *parnta* PROPRIETIVE, *panu* CHARACTERISTIC, *witawangu* EXCESS which often create referential nominals, and two suffixes *warnu* ASSOCIATIVE, and *wangu* PRIVATIVE, which can both create referential nominals and act as secondary predicates.

[5] *Case* suffixes: The DATIVE and ALLATIVE have been discussed above. Other case-suffixes which can attach to nominalized verbs include the ERGATIVE and the LOCATIVE. I also tentatively place the suffix *rlajinta* in this class, which is homophonous with the COMITATIVE.

In the remainder of this chapter, I will discuss each of these five classes and the properties of the suffixes in the classes.

6.6.1 Simultaneous action obviation system

This class consists of a set of suffixes that Hale (EFW) has described as forming an *obviation system*: *karra*, *kurra* and *rlarni*. [22] Non-finite clauses formed with these suffixes

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22. Hale (EFW) originally proposed that the suffix *rlajinta* also formed part of this set, and Nash (1980), and Simpson and Bresnan (1982) followed his lead. However, more evidence has been found which suggests that *rlajinta* is not part of the system. I have tentatively classified it as a case-suffix – see 6.6.5 for discussion.

have controlled SUBJECTS (with the exception of *rlarni* which allows an optional DATIVE SUBJECT). They cannot appear as matrix predicates, and nor can they have arbitrary PRO subjects. The suffixes themselves determine absolutely what may be the controller of the clause. The table given below shows this. (The top row represents the grammatical function of the controller).

	SUBJ	OBJ	
karra	+	–	(Subject control)
kurra	–	+	(Object control)
rlarni	–	–	(Oblique DATIVE control)

A clause marked with *karra* can be controlled by either an ERGATIVE SUBJECT or an ABSOLUTIVE SUBJECT. It cannot be controlled by an ABSOLUTIVE OBJECT. The examples given below[23] illustrate *karra*.

(110) Ngarrka ka wangka-mi, *nyina-nja-karra.*
man-ABS PRES talk-NPST, sit-INF-SSCOMP
The man is talking while sitting. [Survey]

(111) Turaki-rli puluku wirijarlu paka-rnu *parnka-nja-karra-rlu.*
vehicle-ERG bullock-ABS big-ABS hit-PAST run-INF-SSCOMP-ERG
The moving car hit a big bullock. [pakarni]

A clause marked with *kurra* has an OBJECT, whether ABSOLUTIVE or DATIVE, as its controller. This was discussed at length in 2.3. I also argued in 2.3.2.1, following Hale (EFW), that, if a clause marked with *rlarni* is controlled, the controller must be an Adjunct DATIVE in the matrix clause, as in (112) and (113).

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23. There are speakers who use *karra* as a more general complementizer, without requiring its antecedent to be a SUBJECT. They accept sentences such as:
Ngarrka-ngku ka kurdu paka-rni, wangka-nja-karra
man-ERG PRES child-ABS hit-NPST talk-INF-SSCOMP-ABS
The man hits the child while it's talking. [Survey]
I will not discuss this dialect.

(112) Ngarrka ka-rla karnta-ku marlaja-wangka, *ngurlu*
man-ABS PRES-DAT woman-DAT cause-talk-NPST seed-ABS
yurrpa-rninja-rlarni
grind-INF-OBLCOMP
The man is talking because of the woman who is grinding seeds. [Survey]

(113) Ngarrka-ngku ka-rla kurdu-ku karli kaji-jarnti-rni,
man-ERG PRES-DAT child-DAT boomerang-ABS benefactive-trim-NPST,
[*jarda* *nguna-nja-rlarni*(-ki)]
sleep lie-INF-OBLCOMP-(DAT)
The man is trimming a boomerang for the child while it is sleeping. [EFW]

If the clause has an overt lexical SUBJECT, then that SUBJECT usually appears clause-initially with DATIVE case,[24] as in (114).

(114) Nyalali-rli ka warlu yarrpi-rni, [*karnta-ku* *kurdu-ku*
girl-ERG PRES fire-ABS kindle-NPST, woman-DAT child-DAT
miyi *yi-nja-rlarni*].
food-ABS give-INF-OBLCOMP
The girl is building a fire, while the woman is giving food to the baby. [EFW]

Predictably, since nominalized verbs with obviation suffixes are ADJUNCTs, a sentence may contain several clauses with obviation suffixes, as (115) illustrates.

(115) Wati -rna nya-ngu ngajulu-rlu *marlu* *luwa-rninja-kurra*,
man-ABS -1sg see-PAST I-ERG kangaroo-ABS shoot-INF-OCOMP
pama *nga-rninja-karra-rlu*.
liquor-ABS ingest-INF-SSCOMP-ERG.
I saw the man shooting the kangaroo while I was drinking liquor. [Laughren & Robertson to K. Hale, May 9, 1977]

If in (116) both the clauses with obviation suffixes were XCOMPs, rather than ADJUNCTs, *Consistency* would rule out such sentences.

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24. This construction appears to be favoured more by older Warlpiris than by younger speakers.

Recall that in 2.3.4 and 6.5.1 I suggested using the features used to decompose grammatical functions with the added specification of antecedency for antecedent features. I said that if X has the feature [+ "SUBJECT"] this is interpreted as meaning that X's antecedent has the grammatical function SUBJECT. If X has the feature [+ SUBJECT], this is intepreted as meaning that X has the function SUBJECT. Quotation marks distinguished the antecedent use of these features, from the non-antecedent use.

The antecedent feature [+ "SUBJECT"] will correctly express the requirement that antecedent of the SUBJECT of a *karra* clause must be itself a SUBJECT. Both *rlarni* clauses and *kurra* clauses require that the antecedents of their SUBJECTs *not* be a SUBJECT, which can be expressed by the antecedent feature [- "SUBJECT"]. To distinguish these two from each other, however, another feature is needed. In 2.3.4, I argued that both OBJECTs and Adjunct DATIVEs are [+ OBJECT] (in contrast to OBJECT 2s, which are [- OBJECT]. Therefore [+ "OBJECT"] does not distinguish the antecedent of a *rlarni* clause from the antecedent of a *kurra* clause. To distinguish OBJECTs from Adjunct DATIVEs I used the feature [±DIRECT]. As an antecedent feature, [± "DIRECT"] can distinguish between *rlarni* and *kurra* clauses. The antecedent feature system then is as follows.

(116) **Antecedent Features Of Complementizer Suffixes**

	"SUBJECT"	"DIRECT".	
karra	+	+	SUBJECT control)
kurra	-	+	(OBJECT control)
rlarni	-	-	(oblique DATIVE control)

This antecedent system is sufficient to distinguish the antecedents of *karra*, *kurra* and *rlarni* clauses from each other. Observe that the negative specification of the antecedent features for *rlarni* can be interpreted as allowing a *rlarni* clause not to have an antecedent at all. If the feature [- "SUBJECT"] is interpreted as *It is not the case that the antecedent of the rlarni clause SUBJECT is a SUBJECT*, this is true, whether or not the *rlarni* clause SUBJECT has an antecedent. Thus a *rlarni* clause, but not the other obviation complementizer suffixes, may have an overt SUBJECT.

The antecedent features given in (116) are not sufficient to distinguish the antecedent of a *rlarni* clause from OBLIQUE arguments. To represent the fact that, if there is no overt lexical SUBJECT, the SUBJECT of a *rlarni* clause must be controlled by an Adjunct DATIVE, I propose to link the appearance of the antecedent feature ["OBJECT"], (which distinguishes OBJECTs and Adjunct DATIVEs from other arguments), with the appearance of a null pronominal.

(↑SUBJ PRED) = 'PRO' → (↑SUBJ "OBJECT") = +
(↑SUBJ U) = +

This is read as follows: *If the SUBJECT is a null pronominal, then the value for the antecedent feature ["OBJECT"] of the SUBJECT is +.*

The feature U (standing for *morphologically unexpressed*) was introduced in Bresnan (1982a) to characterize the difference between null pronominals and other pronominals. Its use is essential here, because otherwise the equation would make the incorrect prediction that free pronominals appearing as lexical SUBJECTs of *rlarni* clauses must have Adjunct DATIVEs as antecedents.

The lexical entries for the complementizer suffixes specify the controller of the SUBJECT of the clause-nucleus which they form by means of these antecedent features. I give complete lexical entries for *karra* and *kurra* below, and a partial lexical entry for *rlarni*.

(117) **Lexical entries for obviation system complementizers**

	Karra
karra:]N^{-1} ___]N	attaches to N^{-1} to form N
(↑SUBJ PRED) = 'PRO'	obligatory null pronominal SUBJECT which prevents appearance of lexical SUBJECT.
(↑SUBJ "OBJECT" = − "SUBJECT" = +	features marking SUBJECT's antecedent as SUBJECT
[+ dependent tense]	

Kurra

kurra:	]N^{-1} ___]N	attaches to N^{-1} to form N
(↑SUBJ PRED) = 'PRO'		obligatory null pronominal SUBJECT which prevents appearance of lexical SUBJECT.
(↑SUBJ	"OBJECT" = +	features indicating SUBJECT's
	"DIRECT" = +	antecedent as OBJECT
	"SUBJECT" = -	
[+ dependent tense]		

The [+ "DIRECT"] antecedent feature for *kurra* distinguishes it from *rlarni*.

Rlarni

rlarni:	]N^{-1} ___]N	attaches to N^{-1} to form N
((↑SUBJ PRED) = 'PRO')		optional null pronominal SUBJECT In its absence, a lexical NP may appear.
(↑SUBJ	"DIRECT" = -	features marking SUBJECT's antecedent
	"SUBJECT" = -	if present, as neither SUBJECT nor OBJECT nor OBJECT 2.

(↑SUBJ PRED) = 'PRO' → (↑SUBJ "OBJECT") = +
(↑SUBJ U) = +
[+ dependent tense]

When the SUBJECT of the *rlarni* clause is controlled by an Adjunct DATIVE, *rlarni* can receive DATIVE case, in agreement with the case of its SUBJECT's antecedent, as other

ADJUNCTs do. [25] This concludes the discussion of controlled *rlarni* clauses. In the next section, I will consider the situation in which the *rlarni* clause has an overt SUBJECT.

6.6.1.1 **Non-finite clauses with overt SUBJECTs:** *rlarni*

A *rlarni* clause with a non-finite verb can have an overt SUBJECT marked with DATIVE case, (although some speakers, especially younger speakers, (Laughren, p.c.) allow an overt SUBJECT to have the case normally required by the verb. This SUBJECT apparently has to be clause-initial. Interestingly, not only nominalized verbs with *rlarni*

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25. However, DATIVE case-marking is optional on *rlarni*. To express this, I shall assume that the lexical entry for *rlarni* optionally contains the statement (↑CASE) = DATIVE. That is, *rlarni* can be inherently DATIVE, thus fulfilling the Adjunct Agreement Convention.

can take overt SUBJECTs. When *rlarni* occurs on a nominal,[26] it can also have an overt DATIVE SUBJECT, as the following examples show.

(118) Kurdu-kurdu ka-lu manyu-karri-mi karru-wana *ngatinyanu-ku*
children-ABS PRES-3pl play-stand-NPST creek-PERL mother-DAT
wirlinyi-rlarni.
hunting-OBLCOMP
The children are playing in the creek while their mother is away hunting. [manyu]

(119) Yapa-kari ka-rla ngarrka wangka-mi karnta-ku,
man-OTHER-ABS PRES-DAT man-ABS speak-NPST woman-DAT,

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26. All the obviation system complementizers can occur on nominals. A few examples with *kurra*, the OCOMP, follow.

i. *Lirra* *wanka-ngku* *ka-lu-ngalpa* *ngarri-rni* *waparlku-kurra*
mouth bad-ERG PRES-3pl-1plin call-NPST unaware-OCOMP
ngula-ngku *karnta-karnta-rlu + ju.*
that-ERG woman-woman-ERG + EUPH
Those women swear at us using bad words when we are innocent. [lirra wanka]

ii. *Jakarrjakarr-ya-ni-rni,* *jakarr-jakarrpa-kurra* *kajika-npa*
squeakingly-go-NPST-HERE, squeakingly-OCOMP POT-2sg
yapa *purdanya-nyi. ...* *Kaji-lpa* *ya-ntarla-rni* *yangka*
person-ABS hear-NPST IF-PAST go-IRR-HERE the
wirliya kajika-npa purdanya-nyi – – *jakarrjakarr-ya-ninja-kurra.*
foot-ABS POT-2sg hear-NPST squeakingly-go-INF-OCOMP
To go along squeakingly, you could hear someone being squeaking...If someone goes along, you might hear that person walking squeakingly with his feet. [Hale tape 28 jakarrjakarrayani]

iii. *Larrka-luwa-rnu* *-ngku* *karli-ngki* *kaninjarni-kirra* *yujuku-kurra.*
midst-shoot-PAST -2sg boomerang-ERG inside-OCOMP house-OCOMP
He threw and hit you with a boomerang when you were inside the hut. [larrka-luwarni]

ii. is rather interesting because it shows *kurra* first occurring on an action nominal, and then occurring on an infinitive consisting of the verb *yani* 'go' combined with the same action nominal acting as a preverb. iii. shows that the *kurra* complementizer can attach to an ordinary referential nominal, and act as an argument-taking predicate just as an *ATP* case-suffix can.

kalinyanu-ku *wirlinyi-rlarni.*
husband-DAT hunting-OBLCOMP
Some man is talking to the woman while her husband is out hunting. [wangkami]

(118) and (119) show a typical action nominal, *wirlinyi*, taking a DATIVE SUBJECT with the complementizer suffix *rlarni*. In (120), a DATIVE SUBJECT occurs with a *rlarni*-marked nominal, in which *rlarni* functions rather like a LOCATIVE suffix.

(120) Yankirri -lpa-lu ngapa-kurra ya-nu-rnu *ngaju-ku*
emu-ABS -PAST-3pl water-ALL go-PAST-HERE I-DAT
yirntatu-rlarni,
blind-OBLCOMP
The emus came to the waterhole while I was (hidden) in the hunting blind.

(121) shows that, even when *rlarni* provides the argument-taking predicate, and the nominal to which *rlarni* attaches acts as an argument of this predicate, a DATIVE SUBJECT can be present.

(121) Wirlinyi ka-lu mardukuja-patu ya-ni wardapi-ki
hunting PRES-3pl woman-PL-ABS go-NPST goanna-DAT
paka-rninja-ku, *wati-patu-ku* *marlu-ngkarni.*
kill-INF-DAT man-PL-DAT kangaroo-OBLCOMP
The women are going hunting to kill goannas, while the men are involved with kangaroos. [mardukuja]

The fact that overt DATIVE SUBJECTs can occur with action nominals or referential nominals or nominalized verbs with the complementizer suffix *rlarni* is predicted by an account which treats nominals and nominalized verbs as essentially equivalent. Recall that the second $\bar{N}$ rule (given in 6.4.3) which expands nominalized verb + COMP can also expand nominal + COMP. Both are Ns, and so both can appear in this rule. To capture the fact that the SUBJECT of a *rlarni* clause has to be DATIVE and must be initial, I will add an optional annotation to the first element of the $\bar{N}$.

(122) Revised second phrase structure rule for expanding $\bar{N}$

$$\bar{N} \rightarrow \left(N\right) \quad \bar{N}^{*} \quad N$$
$$(\uparrow SUBJ) = \downarrow \qquad \uparrow = \downarrow$$
$$(\uparrow CASE) = DATIVE$$

Since both the action nominal and the nominalized verb can select SUBJECTs, they can have SUBJECTs by virtue of this rule. The rule allows the generation of an overt DATIVE SUBJECT in initial position. (The equation (↑SUBJ PRED) = 'PRO' normally introduced by *rlarni* must be optional, so as to permit the appearance of the overt SUBJECT.) What forces the overt SUBJECT of a *rlarni* clause to be DATIVE? I propose a condition on the lexical entry of *rlarni* constraining the case of the SUBJECT to be DATIVE if the SUBJECT is overt (i.e. has a negative (unmarked) value for the feature U (unexpressed morphologically)).

$$((\uparrow SUBJ\ U) = -) \quad \rightarrow \quad ((\uparrow SUBJ\ CASE) = DATIVE)$$

It seems that the fact that the overt SUBJECT of *rlarni* is DATIVE, and the fact that its controller must be DATIVE, should find a single explanation. In my account, these two facts are separated. The controller's case is DATIVE because the antecedent features constrain the antecedent to be an Adjunct DATIVE, and ADJUNCTs agree in case with their antecedents. The overt SUBJECT's case is DATIVE by virtue of an equation (↑CASE) = (↑SUBJ CASE) which attaches to *rlarni*. This means that the case of *rlarni* (DATIVE) is the case of the SUBJECT. However, the fact that some speakers allow *rlarni* clauses to have overt SUBJECTs with ERGATIVE case, while maintaining the generalization that only Adjunct DATIVEs can control *rlarni* clauses, suggests that a single explanation of the two instances is undesirable.

An interesting question to raise is: what case does an ADJUNCT predicated of the SUBJECT of a *rlarni* clause have? Preliminary work suggests that speakers fluctuate between assigning DATIVE case to a subject-controlled ADJUNCT, and assigning it the case that the non-finite verb selects for its SUBJECT.

6.6.2 Subsequent action suffixes

Examples (123) through (128) illustrate the five suffixes denoting subsequent action: *ku* DATIVE, *kurra* ALLATIVE, *kungarnti* PREPARATORY, *kupurda* DESIROUS, and *kujaku* ADMONITIVE.

(123) Milpingi ngulaju kala-lu pu-ngu marna
young.spinifex-ABS that USIT-3pl hit-PAST grass-ABS
yujuku-ku nganti-rninja-ku.
hut-DAT build-INF-DAT
They used to pull up the young spinifex to make huts. [milpingi]

(124) (..)ngaju ka-rna ya-ni *kuyu panti-rninja-kurra.*
I-ABS PRES-1sg go-NPST meat-ABS spear-INF-ALL.
I am going off to spear game. [Hale typed notes: 0316]

(125) Yapa, marlu ka yangka kankarlu nyina-mi-rni
person-ABS kangaroo-ABS PRES the upward sit-NPST-HERE
parnka-nja-kungarnti + lki.
run-INF-PREP + THEN
Humans and kangaroos both sit upright before running away. [jarntarru]

(126) Wati karri-nja-pardi-ja. *wangka-nja-kupurda*
man-ABS stand-INF-rise-PAST speak-INF-DESIR
The man stood up, wanting to speak. [Survey]

(127) A: Pirigka -rlipa mata-ma-ninja-*kujaku* ya-ni.
slow-ABS -1plin tired-CAUS-INF-ADMON go-NPST
We'll go slowly for fear of getting tired. [[H60Dial: 7.11]

All these examples show subsequent action complements controlled by ABSOLUTIVE SUBJECTs. Examples (128) through (132) show that these five suffixes can appear on complements controlled by ERGATIVE SUBJECTS.

(128) Wati-ngki kurlarda pikirri-rla yirra-rnu, *marlu*
man-ERG spear-ABS spearthrower-LOC put-PAST kangaroo-ABS
panti-rninja-ku.
spear-INF-DAT
The man put the spear on the spearthrower, to spear the kangaroo. [Survey]

(129) (..)ngula ka yampi-mi-rra ngapa *pangi-rninja-kurra-rlu + lku*

that PRES leave-NPST-THERE water-ABS dig-INF-ALL-ERG + THEN
(..) he leaves it to dig for water. [ML: NUM]

(130) Muwa ka-npa yirra-rni *jarra-ma-ninja-kungarnti-rli*
unlit.fire-ABS PRES-2sg put-NPST light-CAUS-INF-PREP-ERG
murnma + wiyi.
not.yet + BEFORE
You set up a fire first before lighting it. [murnma]

(131) Wati-ngki kurlarda pikirri-rla yirra-rnu, *marlu*
man-ERG spear-ABS spearthrower-LOC put-PAST kangaroo-ABS
panti-rninja-kupurda-rlu.
spear-INF-DESIR-ERG
The man put the spear on the spearthrower, wanting to spear the kangaroo. [Survey]

(132) Kala-lu-nyanu karnta-ngku + ju ngapa + ju wirlinyi-kirra + ju
USIT-3pl-refl woman-ERG + EUPH water-ABS + EUPH hunting-ALL + EUPH
ka-ngu ngami-ngka *purraku-jarri-nja-kujaku + ju.*
carry-PAST container-LOC thirsty-INCH-INF-ADMON + EUPH.
The women would take water for themselves in water-carriers for hunting so that they would not get thirsty. [NM]

Kurra, kungarnti and *kupurda* all allow the affixation of ERGATIVE case. *Ku* and *kujaku* do not. I assume that *kurra, kungarnti* and *kupurda* act like semantic case-suffixes (like the ALLATIVE in fact), in not transmitting case. Therefore they can receive extra case-marking. *Ku*, on the other hand, like the normal DATIVE case-suffix, has the equation (↓CASE = DATIVE) attached, and therefore cannot receive additional case-marking without violating *Consistency*. I must also assume that the ADMONITIVE *kujaku* is a case-suffix with a similar property, preventing it from receiving extra case-marking.

(133) shows that a nominalized verb with a subsequent action complementizer forms a single constituent together with its arguments, and can precede the AUX.

(133) *Miyi* *ŋa-rninja-kungarnti-rli* -rna-ju rdaka + wiyi
food-ABS eat-INF-PREP-ERG -1sg-1sg hand-ABS + BEFORE
parlju-rnu.
wash-PAST
Before eating the damper I washed my hands. [parljirni]

Like other complementizers, subsequent action complementizers can occur on nominals. (134) shows a action nominal, and the remainder have an OBLIQUE$_{theta}$. (136) shows ERGATIVE case-marking.

(134) Mata-parnta ka-lu panu-kari-rli yirra-rni-rra
tired-PROP-ABS PRES-3pl mob-OTHER-ERG put-NPST-THERE
wirlinyi-kirra (..)
hunting-ALL
The others leave the tired person as they go on to hunt, (..) [yirrarni]

(135) M: Nyiya mayi ka-lu-nyanu ka-nja-ya-ni (..)
what-ABS WONDER PRES-3pl-refl carry-INF-PROG-NPST
mayi *ngapa-rlangu-kujaku* + ju?
WONDER water-E.G.-ADMON + EUPH
I wonder what they carry for the rain? [H60Dial: 8.67]
(Incidentally, this example shows that, like a normal case-suffix, the suffix *kujaku* can follow a derivational clitic attached to a nominal.)

(136) Mardukuru-rlangu ka-lu-nyanu kiji-rni palka-*kurra*
fluff-E.G.-ABS PRES-3pl-refl throw-NPST body-ALL
wati-patu-rlu *purlapa-kungarnti-rli.*
person-PL-ERG corroboree-PREP-ERG
The men put fluff and all onto their bodies in preparation for a corroboree. [mardukuru]

(137) Mannga-jarri-nja-rla yarnka-ja *karnta-kupurda.*
randy-INCH-INF-SEQ leave-PAST woman-DESIR
He got randy and then went in search of a woman. [mannga]

Subsequent action clauses are often found controlled by non-SUBJECTs,[27] such as

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27. I have not yet found an example of a purposive use of the ALLATIVE controlled by anything other than a SUBJECT.

OBJECTs or DATIVEs.

(138) Wati-ngki + ji -jana maliki + ji langa + juku
man-ERG + EUPH -3pl dog-ABS + EUPH ear-ABS + STILL
muurlpa-paju-rnu *purdanya-nja-kujaku*
care-cut-PAST hear-INF-ADMON
The man carefully cut off the dogs' ears so that they would not hear. [JK]

(139) Kala-lu karnta-ngku + ju maliki + ji ka-nja-ya-nu
USIT-3pl woman-ERG + EUPH dog-ABS + EUPH carry-INF-PROG-PAST
kuyu-ku parnti-nya-nja-ku.
meat-DAT sniff-see-INF-DAT
The women would go along taking dogs to sniff out the game. [NM]

When controlled by DATIVEs, *kungarnti* and *kupurda* have DATIVE case suffixed, as (140) and (141) illustrate. When *kujaku* or *ku* are controlled by a DATIVE, of course they do not receive extra case-marking, as (142) illustrates:

(140) Ngarrka -rla wangka-ja karnta-ku, *ya-ninja-kupurda-ku.*
Man-ABS -DAT speak-PAST woman-DAT go-INF-DESIR-DAT
The man spoke to the woman, who was wanting to go. [Survey]

(141) Ngarrka -rla wangka-ja karnta-ku, *ya-ninja-kungarnti-ki.*
Man-ABS -DAT speak-PAST woman-DAT go-INF-DESIR-DAT
The man spoke to the woman, who was preparing to go. [Survey]

(142) Ngapa-ku + nya – – *walyiwalyi-wanti-nja-kujaku* -lpa-rla
water-DAT + EMPH – -- spill-fall-INF-ADMON -PAST-DAT
jarlki-nguna-ja.
block-lie-PAST
It lay (in the coolamon) for the water to stop from spilling over. [mina]

(143) and (144) show that the DATIVE, at least for *kujaku* clauses, does not have to be an OBJECT of the verb, but can be an ADJUNCT DATIVE.

(143) Watiya-rlu -jana jurnta-lalypa-ma-nu taya + ju
tree-ERG -3pl away-flat-CAUSE-PAST tyre-ABS + EUPH
wirlinyi-kijaku.
hunting-ADMON
The stake flattened their tyre so they could not go hunting. [lalypa]

(144) Wirliya-rlu ka-lu-rla warru kati-rni ngulya-warnu
foot-ERG PRES-3pl-DAT around tread-NPST burrow-ASSOC
wardapi-ki *rduul-pardi-nja-kujaku*.
goanna-DAT emerge-INF-ADMON
They trample down the holes of the goanna's burrow so that it can't get out. [katirni]

In (145), the DATIVE is not even registered.

(145) Luun-kiji-rni -ka-lu juka-patu-rlu *yulpurru-ku*
ritually.place-NPST -PRES-3pl ritual.kinterm-PL-ERG family-DAT
nya-nja-ku, wirriji, (..)
see-INF-DAT hairstring-ABS
The initiate's brothers-in-law put down all the hairstring for the family of the young initiate to see, (..) [luunkijirni]

Some of these suffixes also allow control by an arbitrary referent. This is particularly striking in the case of *ku*.

(146) Pikirri, ngulaju *kurlarda* *kiji-rninja-ku*.
spearthrower-ABS, that spear-ABS throw-INF-DAT
A spearthrower, that is for throwing spears. [Hale typed notes: 0325]

Some also allow overt SUBJECTs.

(147) Mangkurdu ka-lu pardi-mi marumaru, *ngapa*
raincloud-ABS PRES-3pl rise-NPST black-ABS rain-ABS
wanti-nja-kungarnti
fall-INF-PREP
Black rainclouds come up before it rains. [EFW]

(148) Wurdungu-jarri-yarla -lpa-rlipa, *kurdu-kurdu*
silent-INCH-IRR -PAST-1plin child-child-ABS
yakarra-pardi-nja-kujaku
awake-rise-INF-ADMON
Let's be silent so the children don't wake up. [EFW]

In 2.2.8 I gave an example of a sentence (26) containing a nominalized verb with a DATIVE suffix following an unmarked nominal, and mentioned Nash's remark that the unmarked nominal could be interpreted as the SUBJECT of the nominalized verb.

(149) Japanangka karlarra-jarri-ja *Jupurrula* *nya-ṇa-ku.*
Japanangka-ABS west-INCH-PAST Jupurrula see-INF-DAT
Japanangka went west, for Jupurrula to see him(self). [Nash, p.c.]

Nash commented that *Jupurrula* could also have ERGATIVE case. The fact that the overt SUBJECT of a non-finite clause need not have the required case by the ') of its SUBJECT in a finite clause is somewhat problematic for my account. I suspect that there is interference from the fact that the nominalized verb *nyaṇaku* is also a nominal, as I argued in 6.3.2.1. Nominals used as matrix predicates always have ABSOLUTIVE SUBJECTS, and it is possible that when nominalized verbs are used as secondary predicates there is a tension between whether their SUBJECTs are understood as having the case-suffix required by the verb which heads the nominal, or the case-suffix required of the SUBJECT of a nominal.

In (150) I summarize the properties of the subsequent action suffixes discovered so far. This is very tentative; it is quite possible that some of the suffixes which I have said cannot have lexical SUBJECTs will turn out to have them, and also that the constraints on antecedents for some of the suffixes will be found to be too strong.

The possibility of an overt SUBJECT is expressed by the optionality of the equation ↑SUBJ PRED = 'PRO'. The possibility of arbitrary control is expressed by the lack of any constraints on the antecedent of the SUBJECT. Since I have found no clear examples of arbitrary control with *kungarnti*, it is conceivable that *kungarnti* has as part of its lexical entry an antecedent equation constraining the antecedent to be a SUBJECT, or perhaps an argument with the grammatical function feature [+ DIRECT]. Such an antecedent equation could be attached to the (↑SUBJ PRED = 'PRO') equation. When that equation is present, an antecedent must be present, ruling out the possibility of arbitrary control.

(150) **Lexical entries for subsequent action complementizer suffixes**

Possibility of overt subject:

kurra	↑SUBJ PRED = 'PRO'
ku	↑SUBJ PRED = 'PRO'
kupurda	↑SUBJ PRED = 'PRO'
kujaku	(↑SUBJ PRED = 'PRO')
kungarnti	(↑SUBJ PRED = 'PRO')

Antecedents:

kurra	[+ "SUBJECT"]
kupurda	[? + "DIRECT"]
ku	apparently no constraints
kungarnti	? [+ "DIRECT"]
kujaku	apparently no constraints

6.6.3 Circumstantial suffixes

There are two complementizer suffixes which I have classed as 'circumstantial', because they both describe the circumstances surrounding the event described in the matrix clause. *Rla* clauses describe an event which precedes the event described in the matrix, and *puru* clauses describe a state of affairs concurrent with the event described in the matrix (usually the weather, time of day, or external environment). I therefore assume that *rla* has the tense features:

[+ PAST]
[– UNREALIZED]

while *puru* has the tense features:

[- PAST]

[- UNREALIZED]

An example of each follows:

(151) Ngarrka-patu ka-lu yujuku-rla nyina-mi, *ngapa*
man-PL-ABS PRES-3pl shelter-LOC sit-NPST rain-ABS
wanti-nja-puru
pour-INF-CIRC
The men are sitting in the shelter while it is raining. [EFW]

(152) Kuyu ka nguna japi-ngka *walyka-jarri-nja-rla*
meat-ABS PRES lie-NPST shop-LOC cool-INCH-INF-SEQ
lalka + lku.
cool-ABS + THEN
The meat in the shop is now frozen solid from being chilled. [lalka]

Rla and *puru* differ with respect to their SUBJECT and antecedent properties.

Rla never appears with an overt SUBJECT, while *puru* normally has an overt SUBJECT, as in the example given. *Rla* appears to be obligatorily controlled by the SUBJECT, whether ABSOLUTIVE, as in (152), or ERGATIVE, as in (153).

(153) Watakiyi ka-rnalu *lakarn-pi-nja-rla* nga-rni
bush.orange-ABS PRES-1plex skin-INF-SEQ eat-NPST
miyi + lki.
fruit-ABS + THEN
Having skinned it we eat the flesh of the bush orange. [lakarn-pinyi]

Observe that the SEQ *rla* does not receive case in agreement with the ERGATIVE SUBJECT. This is one major difference between the SEQ *rla* and the homophonous LOCATIVE suffix, which can also attach to nominalized verbs. (See 6.6.5.) I assume that *rla* has as part of its lexical entry the condition that its SUBJECT be a null pronominal, and that the antecedent feature of its SUBJECT is [+ SUBJECT]. This will express the constraints on its distribution.

Since *puru* usually occurs with an overt lexical SUBJECT, it will not have this constraint. Normally the SUBJECT of the *puru* clause has the same case that the SUBJECT would have in the corresponding finite clause, as in (154) and (155) which show an ABSOLUTIVE and an ERGATIVE SUBJECT respectively:

(154) Wiri-wiri ka-lu nyina, *kurdu-kurdu* *manyu-karri-nja-puru*
big-big-ABS PRES-3pl sit-NPST child-child-ABS play-stand-INF-CIRC
The grownups are sitting while the children are playing. [Hale: typed notes 0319]

(155) *Ngarrka-ngku* *panti-rninja-puru.* kuyu-ku, ngula yi-ka-lu-rla
man-ERG spear-INF-CIRC game-DAT that REAS-PRES-3pl-DAT
kamparru + yijala nyina.
in.front + ALSO sit-NPST.
While the man is spearing, for game, they wait ahead for him. [Hale: typed notes 0319]

However, Hale (EFW) notes that DATIVE has been elicited on the SUBJECT, as in the following example:

(156) Ngarrka-patu-rlu ka-lu-jana puluku turnu-ma-ni,
man-PL-ERG PRES-3pl-3pl bullock-ABS muster-NPST
karnta-patu-ku *miyi* *purra-nja-puru.*
woman-PL-DAT food-ABS cook-INF-CIRC
The men are mustering cattle while the women are cooking the food. [Survey]

In fact, even when *puru* has no overt SUBJECT, apparently it cannot be construed as predicated of some argument in the matrix. An example follows:

(157) *Wanta-puru* ka-rna yama-ngka nyina-mi.
sun-CIRC PRES-1sg shade-LOC sit-NPST
I sit in the shade when it is sunny. [EFW]

Examples without overt SUBJECTs mostly involve nominals. Perhaps the simplest solution is to suppose that when *puru* itself acts as the functional head (when it attaches to an ordinary nominal) it has the lexical entry <(OBL*theta*)>. It does not select a

SUBJECT, but, like a temporal adverb, is predicated of the clause as a whole.[28] A *puru* clause can have additional ERGATIVE case-marking just as a normal temporal adverb can.

(158) --- kala-lu ka-nja-nu ngiji, warlu,
USIT-3pl carry-INF-PROG-PAST firestick-ABS fire-ABS,
ngapa-puru-rlu + ju
rain-CIRC-ERG + EUPH
- -- when it was raining they used to carry live firesticks around with them. [parntimi]

6.6.4 Derivational suffixes

There are two major types of derivational suffix which attach to nominalized verbs, those which create derived nominals which can take any function, and those which behave more like other complementizer suffixes. The first type include the PROP *parnta*, the POSS *kurlangu*, the CAP *marda*, the EXCESS *witawangu* and the CHARACTERISTIC

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28. *Puru*, when attached to a nominal, behaves just like a semantic case-suffix. Like a semantic case suffix, it can undergo spreading, as in i.

i. , *ngula ngapa-yati kala warrarda wanti-ja - -*
munga + yijala
that water-ABS USIT always fall-PAST night + ALSO
- - wanta + yijala kala warrarda wanti-ja - - yarnunjuku + lku
day + ALSO USIT always fall-PAST hungry + THEN
marda-rnu - ngapa-puru wiri-puru.
keep-PAST water-CIRC big-CIRC
The rain kept falling, all night, all day it kept falling; it kept them inside hungry, in the big rain. [H66PSJ:112O]

Wanta wiri-puru, (...)ngulaji ka ngulya-ngka yuka.
day large-CIRC, that PRES burrow-LOC enter-NPST
When the sun is high, then it goes into its burrow. [Hale Tape 28 *wardapi kujaka nyina*]

ii. shows that a *puru* nominal can also form a single constituent with an N^{-1} which modifies the nominal.

panu.[29] The second type include the ASSOC *warnu* and the PRIV *wangu*.

Derivational suffixes of the first type create nominals which can have any function (and any case-suffix). Their uses are illustrated below.

(159) "Langarrpanu" ngulaju langa wurduju *purda-nya-nja-parnta*
sharp-eared that ear-ABS good-ABS hear-INF-PROP
"Langarrpanu" is one who has good ears and who can hear. [langarrpanu]

(160) Warlawurruju ka nyina *panti-rninja-parnta.*
eagle-ABS + EUPH PRES sit-NPST stab-INF-PROP
The wedge-tailed eagle is a stabber. [pantirni]

(161) Mardu wita. wita-nyayirni *kardi-rninja-kurlangu*, kamina-rlu
dish small-ABS small-VERY-ABS fetch-INF-POSS girl-ERG
kala-lu warru ka-ngu.
USIT-3pl around carry-PAST
A small wooden dish, a very small one, for fetching water, the young girls used to carry it around with them. [mardu]

(162) "Mutunypa" ka-lu yapa-ngku ngarri-rni walypali-kirlangu
"mutunypa" PRES-3pl person-ERG call-NPST European-POSS-ABS
"file" yangka *yiri-ma-ninja-kurlangu + ju.*
the sharp-CAUS-INF-POSS-ABS + EUPH
"Mutunypa" is what Warlpiri people call the White man's file, that thing used for sharpening.' [mutunypa]

(163) Langa-jarra + ju ngulaju *purda-nya-nja-kurlangu.*
ear-DU-ABS + EUPH that hear-INF-POSS
The two ears are for hearing with. [langa]

(164) "Jalkaji" ka nguna pikirri-piya, *kurlarda*

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29. *Witawangu* can also be used as an independent nominal meaning *large*, just as *panu* is used as an independent nominal meaning *mob, many*.

Milpirri *yalumpu + ju* *wita-wangu* *rdipi-ja* (..)
raincloud that.near-ABS small-PRIV-ABS meet-PAST
That big rain cloud has come. [wantimi]

The suffix *witawangu* is semantically composite: *small-PRIV*. It may be more accurate to think of *panu* and *witawangu* as forming compounds with nominalized verbs, rather than as suffixes on nominalized verbs.

jalkaji-ABS PRES lie-NPST pikirri-LIKE-ABS spear-ABS
kiji-rninja-kurlangu.
throw-INF-POSS
A "jalkaji" is like a "pikirri", it is for throwing spears. [jalkaji]

(165) Jurnta-ya-nu -rnalu-rla walypali-ki punku-ku – –
away-go-PAST 1plex-DAT European-DAT rotten-DAT
wangka-nja-witawangu-ku.
talk-INF-EXCESS-DAT
We left that bad white fellow -- the one who talked too much. [yani]

(166) Kurdu-pardu yangka + ju *wapa-nja-marda* + yijala
child-DIM-ABS the move-INF-CAP + ALSO
And that little child can walk too , [wapami]

(167) Manu ka wardapi + ji nyina jamipardu
and PRES lizard.sp.-ABS + EUPH sit-NPST harmless-ABS
pi-nja-marda-wangu + lku – – kartirdi wita-kurlu.
bite-INF-CAP-PRIV + THEN tooth small-PROP
And the desert goanna is harmless and cannot bite – – it has small teeth. [kartirdi]

(168) Wati nyampu + ju ka nyina-mi lirra pati
person-ABS this-ABS PRES sit-NPST mouth hard-ABS
wangka-nja-marda-wangu.
speak-INF-CAP-PRIV
This man refuses to speak, can't talk. [lirra pati]

Such suffixes lend themselves to further derivation, as (167) and (168) illustrate.

Dependent tense is not relevant to these suffixes; they describe a general state of affairs: thus *kijirninja-kurlangu* in (164) does not describe the act of throwing with respect to any particular time. I propose therefore, that these suffixes, like ordinary nominals, should be [– TENSE]. These suffixes are the morphological heads of the derived nominals they create. Their features take precedence over those of the nominal to which they attach. Therefore, even though the nominalized verb has the features [dependent tense], when a derivational suffix attaches to it, the resulting structure is [– TENSE]. Therefore, because the whole derived nominal is [– TENSE], it is not subject to the constraints on assignment of function to elements with dependent tense. Therefore it can act as the matrix predicate, as an ADJUNCT, as a SUBJECT etc.

However, these structures cannot be considered unanalyzable words for the purposes of syntax, because, as (164) shows, they can have overt arguments. In (164) the OBJECT of *kiji* 'throw' is overt. Observe that, if in the structure *kiji-rninja-kurlangu*, *kijirninja* is taken as the functional head , (providing the argument-taking predicate), then the Second $\overline{N}$ expansion rule will allow *kurlarda* to act as the OBJECT of *kijirninja*, and the correct functional structure will be obtained. (169) provides another example:

(169) Yali + nya ka-rnalu ngarri-rni jintilykaji – – *marna*
that.rem + EMPH PRES-1plex call-NPST grasshopper-ABS grass-ABS
nga-rninja-parnta.
eat-INF-PROP
That is what we call grasshopper -- a grass-eater. [jintilykaji]

The second type of derivational suffix, the suffixes *wangu* and *warnu*, share properties both with derivational suffixes and with other complementizer suffixes. Like the other derivational suffixes, they can be lexicalized, as in (170), in which a *warnu* nominal and its complement form a nominal 'betrothed'.

(170) Jakamarra ka-rla *wanarri-rla* *yirra-rninja-warnu* nyina
Jakamarra-ABS PRES-DAT thigh-LOC put-INF-ASSOC sit-NPST
Napaljarri-ki + ji.
Napaljarri-DAT + EUPH
Jakamarra is the betrothed of Napaljarri. [wanarri]

It is probably also the derivational suffix property which allows the occasional attachment of further derivational suffixes, as in (171).

(171) Yinjirlpi ka lurlurl-karri-mi watiya
water-ABS PRES drop-NPST tree-ABS
yurnku-yurnku-ma-ninja-warnu-jangka.
shake-CAUS-INF-ASSOC-SOURCE
The water drops off the tree which has been shaken. [lurlurl-karrimi]

Like derivational suffixes, *wangu* and *warnu* nominals can sometimes occur as matrix predicates, as in (172):

(172) (..)maliki + ji marlu *wajili-pi-nja-wangu*
dog-ABS + EUPH kangaroo-ABS chase-INF-PRIV
The dog is not chasing the kangaroo. [Excerptions].
or, The dog is not a kangaroo-chaser (M. Laughren, p.c.)

Observe that in this example, although the verb *wajili-pinyi* requires an ERGATIVE SUBJECT, *maliki*, which acts as the SUBJECT of the nominal *wajili-pinja-wangu* actually is unmarked for case. However, the nominal *marlu* which represents the OBJECT of *wajili-pinyi* is also unmarked for case, just as the OBJECT of *wajili-pinyi* in a verb-headed sentence would be. Normally the OBJECT of a nominal has DATIVE case (see 2.4). I assume that in this instance *wangu* is the functional head, and *wajilipinja* is the OBLIQUE argument of *wangu*.

Unlike the other derivational suffixes, however, *warnu* and *wangu* often have a dependent tense meaning. *Warnu* denotes an action or event which has been completed by the time of the event denoted by the matrix, while attaching *wangu* to a clause asserts that the state of affairs described in the clause does not hold at the time of the event described by the matrix clause. Illustrative examples follow:

(173) Kurdu -rna ka-ngu wajipitirli-kirra, *watiya-ngurlu*
child-ABS -1sg carry-PAST hospital-ALL tree-EL
wanti-nja-warnu.
fall-INF-ASSOC-ABS
I carried the child to hospital which had fallen from a tree. [Survey]

(174) Jarda -lpa-pala nguna-ja *purdanya-nja-wangu*
sleeping PAST-3du lie-PAST hear-INF-PRIV-ABS
They slept without hearing anything. [JK]

(175) *Wangka-nja-wangu* -lpa-lu nyina-ja + lku wanta jirrama-ku.
speak-INF-PRIV-ABS -PAST-3pl sit-PAST + THEN summer two-DAT
palyawarnu + ju
bereaved.mother-ABS + EUPH
The bereaved mothers then went for two years without speaking. [jirramaku]

I will express this by assigning to *warnu* the tense features [+ PAST, - UNREALIZED], and to *wangu* the features [- PAST, - UNREALIZED].

With respect to antecedency, it seems that *warnu* and *wangu* can be predicated of nominals with any case, and that when they do so, they agree in case with their antecedent. (176) , (177), (178) and (179) show ERGATIVEs being modified. (180) shows a DATIVE. (181) and (182) (brought to my attention by Mary Laughren) show *wangu* and *warnu* clauses modifying a nominal in the ALLATIVE and LOCATIVE respectively. (183) shows a *warnu* clause modifying the OBJECT of an ERGATIVE instrumental.

(176) Warru -lpa walya marnpu-rnu *nya-nja-wangu-rlu.*
around PAST ground-ABS feel-PAST see-INF-PRIV-ERG
He felt all around on the ground without seeing it. [ML NUM]

(177) Jurnta -lpa-rla puuly-marda-rnu tarnnga-ngku + juku
away -PAST-DAT hold-PAST always-ERG + STILL
yilya-nja-wangu-rlu.
send-INF-PRIV-ERG
He held on to it and kept it from her without sending it back to her. [yarnkami]

(178) Ngarrka-ngku kuyu nga-rnu, wirlinyi-jangka
man-ERG meat-ABS eat-PAST hunting-SOURCE
ya-ninja-rni-warnu-rlu.
go-INF-HERE-ASSOC-ERG
The man ate the meat after coming back from hunting. [Survey]

(179) Maliki-rli ka marlu pi-nyi *jaarl-parnka-nja-warnu-rlu.*
dog-ERG PRES kangaroo-ABS hit-NPST cut.off-run-INF-ASSOC-ERG
The dog attacks the kangaroo after running to cut it off. [pinyi]

(180) Luurr-nguna-mi ka-rna-ju-rla kurdu-ku yapunta-ku
sad-lie-NPST PRES-1sg-1sg-DAT child-DAT orphan-DAT
yula-nja-warnu-ku.
cry-INF-ASSOC-DAT
I am feeling sad because of the little orphan who has been crying. [luurr-ngunami]

(181) Watiya-kurra ka-rna ya-ni *paka-rninja-wangu/warnu-kurra*
tree-ALL PRES-1sg go-NPST chop-INF-PRIV/ASSOC-ALL
I am going to the tree which has not been chopped/ which someone chopped.

(182) Mulju-ngka ka nyina-mi *wantiki-ma-ninja-warnu/wangu-rla.*
soak-LOC PRES sit-NPST wide-CAUS-INF-ASSOC/PRIV-LOC
He is sitting at the soak which he has widened, which has not been widened.

(183) Kala-rnalu-nyanu mapa-rnu maru-karda marrkirdi-rli,
USIT-1plex-refl rub-PAST black-TRANSL plum-ERG
purra-nja-warnu-rlu.
cook-INF-ASSOC-ERG
We used to paint ourselves with the plum when it had ripened to make ourselves black. [marrkirdi]

I will express this by placing no conditions on the antecedents of *warnu* and *wangu*.

Perhaps the most striking feature of the suffix *warnu* is its ability to take overt SUBJECTs, and the appearance of OBJECT control. Consider the following examples with overt SUBJECTs:

(184) Kurdu yula-ja, *jarntu-ngku* *yarlki-rninja-warnu.*
child-ABS cry-PAST dog-ERG bite-INF-ASSOC
The child cried because the dog bit him. [Survey]

(185) Maliki pali-ja *warna-ngku* *yarlki-rninja-warnu.*
dog-ABS die-PAST snake-ERG bite-INF-ASSOC
The dog died after being bitten by a snake.

Both these examples have overt SUBJECTs with ERGATIVE case. But, just as (172) has an ABSOLUTIVE SUBJECT, so too it is possible for the ERGATIVE to be omitted when the clause is used as a secondary predicate; thus the following sentence is ambiguous:

(186) Kurdu yula-ja, *jarntu* *yarlka-rninja-warnu*
child-ABS cry-PAST dog bite-INF-ASSOC
The child cried, after biting/being bitten by a dog.

Again I must assume that because the *warnu* clause is a nominal, the rule governing assignment of case to SUBJECTs of nominals takes precedence. I suggest that this results from taking either the nominalized verb or the suffix *warnu* as the head of the clause.

What differentiates *warnu* clauses with overt SUBJECTs from *puru* clauses or ADMONITIVE *kujaku* clauses with overt SUBJECTs is that if a *warnu* clause has an overt SUBJECT, normally the verb is transitive and the OBJECT is expressed by a null

pronominal coreferential with some argument of the matrix.[30] A further property of *warnu* clauses with null pronominal OBJECTs is that the *warnu* clause can agree in case with the antecedent of the OBJECT, as the following examples show:

(187) Karli-ki ka-rna-rla warri-rni *nyuntulu(-rlu)*
boomerang-DAT PRES-1sg-DAT seek-NPST you-ERG
ngurrju-ma-ninja-warnu-ku
good-CAUS-INF-ASSOC-DAT
I am looking for the boomerang you made. [message to Hale, July 13, 1976]

Even if the SUBJECT is a null pronominal, the *warnu* clause can still agree with the antecedent of the OBJECT if the OBJECT is a null pronominal. In fact having a null

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30. It is apparently not necessary for the *warnu* clause to have an explicit argument which is coreferential with an argument of the matrix. Vague semantic association is sufficient. Consider the following example.

(..), *yirra-rnu* *-lpa-lu-rla* *rurrpa-ngka + ju,*
put-PAST -PAST-3pl-DAT incision-LOC + EUPH
kuna-ma-ninja-warnu-rla.
gut-CAUS-INF-ASSOC-LOC
They would put it (a stick) in the incision from where the intestines had been withdrawn. [kijirni]

Rurrpa-ngka represents the LOCATIVE argument of *yirrarni*. *Kunamaninjawarnu-rla* is not predicated of *rurrpa-ngka*, since it is not clear that an incision can be gutted. Rather, the wnole nominal *kunamaninjawarnu-rla* is in apposition to *rurrpa-ngka*, "in the incision, in the thing which has been gutted". So, *kunamaninjawarnu* is predicated of the $OBLIQUE_{theta}$ of the LOCATIVE suffix, *rla*.

SUBJECT is more common[31] than the presence of an overt SUBJECT.

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31. An alternative strategy is to express the SUBJECT by means of a SOURCE-marked nominal, as in the following example.

Miirlmiirl-jarri-mi *-ka* *wati-jangka* *ngarri-rninja-warnu.*
angry-INCH-NPST PRES man-SOURCE tell-INF-ASSOC
She gets really angry when a man swears at her. [miirlmiirl]

The *jangka* nominal can appear separated from the *warnu* clause, as in the following example:

Manjanja *rdaka* *karli-jangka* *murrumurru* *luwa-rninja-warnu.*
crippled hand-ABS boomerang-SOURCE sore-ABS throw-INF-ASSOC
The hand is sore and crippled from being hit by a boomerang. [manjanja]

I assume that the *jangka* nominal does not function syntactically as the SUBJECT of the *warnu* clause, but rather that it functions as an ADJUNCT denoting reason or cause, whose $OBLIQUE_{theta}$ argument can be understood as coreferential with the SUBJECT of the *warnu* clause. Thus I take a sentence like the one just given to mean something like 'The hand is sore and crippled on account of a boomerang, on account of it hitting the hand'. It is clear that *jangka* must be able to denote a reason ADJUNCT, because it can occur in sentences with *warnu* clauses, in which it cannot possibly denote the SUBJECT of the *warnu* clause, as illustrated.

Mirdi jaarn-karri-mi ka wati yama-ngka
knee-ABS crossed.leg-stand-NPST PRES person-ABS shade-LOC
wirlinyi-jangka, *parnka-nja-warnu.*
hunting-SOURCE run-INF-ASSOC
That man is lying in the shade with one leg resting on his knee after hunting and running. [mirdi]

In this example the action nominal *wirlinyi* is clearly not the SUBJECT of *parnka*. It is an attribute of the sentence, denoting a time period. (Note also the bodypart nominal preceding the AUX together with the verb. Presumably this is a topicalized bodypart.)

Jangka nominals have also been found with the SEQ complementizer. In i. the *jangka* nominal is coreferent with the OBJECT of the SEQ clause.

i. *Kala-lu* *yatijarra* *ya-nu,* *jurnpurnpu-jangka + ju* *paji-rninja-rla.*
USIT-3pl north go-PAST tobacco-SOURCE + EUPH cut-INF-SEQ
They went north after picking the tobacco. [pajirni]

ii. *Warlkalpa-jangka,* *muku* *-lu* *wanti-ja – –* *yankirri + ji*
poison.bush-SOURCE all -3pl fall-PAST emu-ABS + EUPH
– – nga-rninja-rla.
From the poison bush, the emus all fell down, after ingesting it. [wantimi]

In ii. the *jangka* nominal is separated from the SEQ clause, but it seems that the OBJECT of the SEQ clause is coreferent with the *jangka* nominal.

(188) Jarntu lalka-jarri-ja *paka-rninja-warnu.*
dog-ABS hard-INCH-PAST hit-INF-ASSOC-ABS
The dog stiffened after being hit. [lalka]
(*warnu* is ABSOLUTIVE agreeing with the matrix ABSOLUTIVE SUBJECT which is the antecedent for the *warnu* clause OBJECT)

(189) Yapa-kari + lki marlaja-rdipa-ja marlu-ku + ju,
person-OTHER-ABS + THEN cause-meet-PAST kangaroo-DAT + EUPH
panti-rninja-warnu-ku + ju
spear-INF-ASSOC-DAT + EUPH
Someone came across a kangaroo that another person had speared. [marlaja]
(*Warnu* is DATIVE, agreeing with *marlu-ku*, the antecedent of the OBJECT of the *warnu* clause).

(190) Milpa wijini + lki ka nyina-mi *watiya-ngurlu*
eye sore-ABS + THEN PRES sit-NPST stick-EL
panti-rninja-warnu.
poke-INF-ASSOC
He has a sore eye as a result of being poked in the eye with a stick. [milpa]
(*warnu* is ABSOLUTIVE, agreeing with antecedent of its OBJECT, the matrix ABSOLUTIVE SUBJECT, rather than ELATIVE agreeing with the antecedent of its SUBJECT, the matrix ELATIVE nominal)

(191) Wanta-kurra ka-lu yirra-rni pulyku *nga-rninja-warnu*
sun-ALL PRES-3pl put-NPST sinew-ABS eat-INF-ASSOC
lalka-karda.
hard-TRANSL
They put the sinew which has been chewed out in the sun, so that it will harden. [lalka]
(*Warnu* is ABSOLUTIVE, agreeing with the matrix OBJECT, which is the antecedent of the OBJECT of the *warnu* clause, rather than with the matrix ERGATIVE SUBJECT, which is the antecedent of the SUBJECT of the *warnu* clause.)

Observe that the Adjunct Agreement Convention does not prevent this agreement. It merely states that if an adjunct modifies an argument, then it must not disagree in case with that argument. It does not state that the argument which the ADJUNCT modifies must be the antecedent for the SUBJECT of the ADJUNCT. *Modification* (or *predication*) is a semantic relation; it usually corresponds to the relation between an argument and an argument-taking predicate which has an open place (or null pronominal) for one of its arguments which, syntactically, acts as the SUBJECT of that predicate. But, the evidence

from the *warnu* clauses suggests that the null pronominal or open place can correspond syntactically to an OBJECT. That is, the classical distinction between SUBJECTs (the argument modified), and PREDICATES (the modifier of the argument - an argument-taking predicate together with its complements - excluding the SUBJECT) does not necessarily correspond to the syntactic distinction between the grammatical function SUBJECT, and the verb or nominal together with its other complements. The modified argument can function syntactically as an OBJECT.

One could attempt to save the idea that only argument positions corresponding to syntactic SUBJECTs can be controlled by supposing that the suffix *warnu* optionally passivizes the verb to which it attaches. [32] Some support could be lent to this approach by the predominance of null SUBJECTs, and the use of the SOURCE morpheme *jangka* to express the SUBJECT. One could also try to argue that the optional absence of ERGATIVE case on SUBJECTs corresponds to incorporation of oblique agents - as in the English compounds: *mice-infested, moth-eaten*. But such a passive rule would be very difficult to state, because of the optionality, and because of the possibility of lexical SUBJECTs appearing with ERGATIVE case. I conclude that, since anaphoric control of OBJECTs is permitted within LFG, (and independently motivated for Malayalam in Mohanan 1982b), and since this requires fewer additional stipulations than the passive account, it is a better account of the *warnu* clauses.[33] *Wangu* clauses can also have

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32. This approach was adopted for a similar construction in Ngarluma, a related language, by Simpson (1980), and by Nash and Simpson (1981). It was argued that a certain complementizer suffix obligatorily passivized the verb to which it attached, and that this gave the appearance of OBJECT control. Evidence for it came from the fact that the overt SUBJECT is expressed by the same case as is the oblique agent of a passive in Ngarluma. However, later fieldwork done by Alan Dench and Peter Austin provided some examples of the complementizer suffix attaching to a couple of intransitive verbs, in which case the SUBJECT is controlled.

33. However, I do not as yet have sufficient data on the appearance of *warnu* clauses as matrix predicates with the SUBJECT of the whole sentence acting as the OBJECT of the *warnu* nominal. As can be seen from my hesitancy in discussing the case-marking of SUBJECTs of such clauses, we do not have adequate data. But, whatever the outcome, it is likely that my analysis will require revision to cover these.

overt SUBJECTs, as in (192) and (193).

(192) Ngaju ka-rna kutu-wapa *pirriya-rlu* *pi-nja-wangu*(..)
I-ABS PRES-1sg just-walk-NPST cold-ERG hit-INF-PRIV
I can just walk around without being affected by the cold. [miljiji]

(193) Kula-lpa milpingi-pardu nga-njarla murluru-rlangu-rlu –
not-PAST spinifex.hut-DIM-ABS eat-IRR white.ant-E.G.-ERG
murluru-rlu *nga-rninja-wangu*
white.ant-ERG eat-INF-PRIV
Things like white ants cannot eat out huts made of spinifex grass, (they) are not eaten by white ants (un-white.ant-eaten) [murluru]

Although there is not very much data, it does seem that occasionally *wangu* clauses can have controlled OBJECTs, as in (194).

(194) Jirdi, ngulaju ngurlu *yarli-rninja-warnu* – – murnma
seed.sp.-ABS that seed-ABS moisten-INF-ASSOC wait
puyu-pi-nja-wangu.
grind-INF-PRIV
"Jirdi" are seeds which have been moistened but not yet ground. [jirdi]

However, I do not have enough data on these to put forward an account. A particularly interesting example is provided by (195).

(195) ngula-jangka ngapa-kurra wanti-ja + lku wiyarrpa – –
that-SOURCE water-ALL fall-PAST + THEN poor.thing-ABS
ngawarra-rlu ka-ngu-rra *nya-nja-wangu-kurra*
flood-ERG carry-PAST-THERE see-INF-PRIV-ALL
And then the poor thing [dog] fell into the water – the flood carried him to somewhere where he could not be seen.

The structure of the *wangu* nominal is as follows :

[[PRO_{arb} *see* PRO_{dog}] PRIV] ALL

The nominal *nyanjawangu* acts as the $OBLIQUE_{theta}$ argument of the ALLATIVE. It has two null pronominal arguments, a SUBJECT, which is arbitrary in reference, and an OBJECT, which is coreferential to the matrix SUBJECT.

6.6.5 Case-suffixes

Several case-suffixes can appear on nominalized verbs. In 6.6.2 I discussed the DATIVE and ALLATIVE, and noted that they have marked dependent tense when attached to a nominalized verb. The three case-suffixes to be discussed here, the LOCATIVE *rla*, the ERGATIVE *rlu*, and the COMITATIVE *rlajinta*, all have time-references simultaneous with that of the matrix verb (i.e. the unmarked time-reference).

The LOCATIVE is homophonous with the SEQ affix *rla*, and much rarer than it. It differs from the SEQ in several ways. First, unlike the SEQ, it has unmarked dependent tense, and thus denotes an action taking place at the same time as the matrix clause. Second, a LOCATIVE nominalized verb clause can be controlled by an argument which is not a SUBJECT, in contrast to the SEQ, which can only be controlled by SUBJECTs. (196) illustrates this. Third, a LOCATIVE suffix appearing on a nominalized verb can, like its nominal counterpart, take further case-marking, as (196) and (197) illustrate:

(196) Ngarrka -lpa-rla karnta-ku wangka-ja *ngurra-ngka*
man-ABS -PAST-DAT woman-DAT speak-PAST camp-LOC
nyina-nja-rla-ku.
sit-INF-LOC-DAT
The man was speaking to the woman while she was sitting in camp. [R. Granites. ?message]

(197) *Wapa-nja-rla-ku* + juku -palangu wanta + ji yuka-ja manu
move-INF-LOC-DAT + STILL -3du sun-ABS + EUPH enter-PAST and
pardi-ja.
rise-PAST
As they walked the sun went down and came up on them. [yukami]

Now, I distinguished the use of the ERGATIVE as an *AGR* suffix from its use as an *ATP* instrumental, by assuming that in the former instance, the ERGATIVE has no syntactically relevant meaning, that is, no PRED feature, while in the latter use it has a PRED feature. It is a debateable point whether, when the ERGATIVE suffix attaches to a nominalized verb, we should consider the ERGATIVE suffix as the head (as in the instrumental use of nominals) with the nominalized verb as its argument, or whether we should consider the nominalized verb as the head. Semantically, the former is probably preferable, since the

ERGATIVE seems to have the same semantic function in both instances. Syntactically, however, the account is simplified if we assume that the nominalized verb is he head. I have no evidence bearing either way. and so will leave this point.

The ERGATIVE's appearance on nominalized verbs has the same constraints as its instrumental use on nominals. It can only be controlled by an ERGATIVE SUBJECT, which is predicted by the Adjunct Agreement convention. An example follows:

(198) Ngarrka-ngku pirilyipirilyi pu-ngu *kati-rninja-rlu.*
man-ERG beetle-ABS hit-PAST tread-INF-ERG
The man killed the beetle by treading on it. [Survey]

So, again, nothing special needs to be said about the antecedent of the ERGATIVE-marked nominalized verb.

The final suffix to be discussed is the COMITATIVE *rlajinta*. Calling this suffix the COMITATIVE is in fact a departure from the views held in Hale (EFW), Nash (1980), Simpson and Bresnan (1982). In these works, *rlajinta* is considered part of the obviation system, and its homophony with the COMITATIVE is considered on a par with the homophony of the OBJECT-control complementizer *kurra*. One of the chief reasons for this was that *rlajinta* clauses were thought only to be controllable by SUBJECTs, and in particular reflexive SUBJECTs. However, further evidence has come to light, suggesting that, just as COMITATIVE nominals can be predicated of non-SUBJECTs, so can nominalized verbs with *rlajinta*.

I will first illustrate the COMITATIVE suffix, showing that it can be predicated of ABSOLUTIVE and ERGATIVE SUBJECTs, as well as DATIVEs, although it occurs most frequently with intransitive ABSOLUTIVE SUBJECTs.

(199) Kurdu + ju ka nyina-mi *karnta-ngkajinta.*
child-ABS + EUPH PRES sit-NPST woman-COM-ABS
The child is sitting with the woman. [Survey]

(200) Kurdu-ngku ka ngurlu kipi-rni *karnta-ngkajinta-rlu.*
child-ERG PRES seed-ABS winnow-NPST woman-COM-ERG
The child is winnowing seed with the woman. [Survey]

(201) Kurdu-ku ka-rna-rla wangka-mi *karnta-ngkajinta-ku.*
child-DAT PRES-1sg-DAT speak-NPST woman-COM-DAT
I am talking to the child who is with the woman. [Survey]

Rlajinta clauses never have an overt lexical SUBJECT. *Rlajinta* clauses can be controlled by SUBJECTs or OBJECTs. Most commonly, the controller of a *rlajinta* clause is a SUBJECT in a reflexive sentence, as (202) illustrates.

(202) Ngarrka-ngku -nyanu ramparl-paja-rnu, *karli*
man ERG -refl mistake-cut-PAST, boomerang-ABS
jarnti-rninja-rlajinta.
trim-INF-COMCOMP
The man accidentally cut himself while trimming a boomerang. [Survey]

The "accidentally" in the gloss is essential, because *-rlajinta* clauses in general have the meaning that because X did Y, X accidentally did something, usually to himself. The SUBJECT need not be reflexive, provided that this *accident* implication is present. The SUBJECT can have ERGATIVE or ABSOLUTIVE case, as in (203) and (204).

(203) Wati kuntul-pu-ngu *ngapa* *nga-rninja-rlajinta.*
Man-ABS cough-PAST water-ABS drink-INF-COMCOMP
The man coughed while drinking water.

(204) *Kurlarda* *maja-rninja-rlajinta,* ngula -rna rdilyki-katu-rnu
spear-ABS straighten-INF-COMCOMP, that -1sg break-tread-PAST
wirliya-rlu + lku.
foot-ERG + now.
It was when I was straightening the spear that I broke it with the pressure from my foot. [majarni]

But, if it is controlled by the ERGATIVE SUBJECT, it apparently does not get ERGATIVE case agreeing with that SUBJECT.

A *rlajinta* clause can also be controlled by the OBJECT of a sentence, as the examples given below illustrate.

(205) *Kuyu* *purra-nja-rlajinta* -ju warlu-ngku janka-ja.
meat-ABS cook-INF-COMCOMP -1sg fire-ERG burn-PAST
While I was cooking meat the fire burned me. [JS]

(206) *Yapa-kari-ki* *piki-wangka-nja-rlajinta* -ju-lu
person-OTHER-DAT danger-speak-INF-COMCOMP -1sg-3pl
kurnta-ngarru-rnu.
shame-tell-PAST
When I was speaking up for the other person they told me off. [JS]

The difference between the instrumental ERGATIVE and *rlajinta* may perhaps be that the instrumental provides a direct cause or instrument for the action described by the matrix. The *rlajinta* clause provides an indirect cause. [34]

Semantically, the idea of accompanying indirect cause is perhaps not too removed from the COMITATIVE case-suffix. However, the main obstacle to calling the two suffixes the same is case-marking. The examples of the COMITATIVE case-suffix given earlier showed double case-marking. The *rlajinta* suffix which appears on nominalized verbs never shows double case-marking.[35] When I put an example of the COMITATIVE suffix with ERGATIVE case to two speakers, one flatly rejected it, thus making no distinction between the COMITATIVE and the *rlajinta* which appears on nominalized verbs. The other speaker accepted it, (but this speaker uses ERGATIVE case-marking much more freely than the other speaker, even putting ERGATIVE case on the TRANSLATIVE suffix

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34. The presence of this indirect cause is probably the semantic component which distinguishes *rlajinta* clauses from, say *karra* clauses. In a sentence such as the following, the *karra* clause merely indicates what the SUBJECT was doing at the time of killing the beetle, it does not have any inference of causation.

Ngarrka-ngku *pirilyipirilyi* *pu-ngu* *kati-rninja-karra-rlu.*
man-ERG beetle-ABS hit-PAST tread-INF-SSCOMP-ERG
The man killed the beetle while dancing. [Survey]

35. The fact that the suffix *rlajinta* never takes additional case-marking, no matter what the case of its antecedent was readily explicable in the account given in Simpson and Bresnan (1982), in which *rlajinta* had the features [+Subjective, +Objective]. Adjuncts cannot disagree in case with their controllers. But if both the SUBJECT and the OBJECT are the controller, the *rlajinta* clause, if it agrees with one of them in case, will disagree with the other. Therefore it cannot get marked with either case.

karda). I conclude that, without detailed further study of dialect differences with respect to the use of double case-marking, the behaviour of case-markers when attached to *rlajinta* is not a reliable test for distinguishing two homophonous suffixes.

Leaving aside the case-marking difficulties, the *rlajinta* suffix can probably be treated as an instance of the COMITATIVE suffix, in which case nothing further need be specified about its behaviour.

This concludes the outline of the properties of the complementizer suffixes. The charts below summarize some of the main properties

	TENSE	TENSE	
	TENSE	PAST	UNREALIZED
Obviation			
karra	+	–	–
kurra	+	–	–
rlarni	+	–	–
Subsequent			
ku	+	–	+
etc.			
Circumstantial			
rla	+	+	–
puru	+	–	–
Derivational			
parnta	–		
etc.			
warnu	(+)	+	–
wangu	(+)	–	–
Case			
rla	+	–	–
etc.			

The labels in the next table need explaining. 'Overt' refers to whether or not the clause

can have an overt lexical SUBJECT. 'Antecedent' refers to whether or not the suffix places constraints on the antecedent of its SUBJECT (excluding case agreement constraints). "SUBJECT", "OBJECT" and "DIRECT" denote antecedent features. "Agr." refers to case agreement – is it obligatory or not.

Lexical Subjects and antecedent features

	Overt	Antec.	SUBJECT	OBJECT	DIRECT	Agr.
Obviation						
karra	–	+	+	–	+	+
kurra	–	+	–	+	+	+
rlarni	+	+	–	+	–	+
Subsequent						
ku	–	–?				–
kurra	–	+	+	–	+	–
kupurda	–	+			?+	+
kungarnti	+	+			?+	+
kujaku	+	–				–
Circumstantial						
rla	–	+	+	–	+	–
puru	+	–				–
Derivational						
parnta	?	–				+?
etc.						
warnu	+	–				+
wangu	+	–				+
Case						
rla	–	–				+
rlu	–	–				+
rlajinta	–	–				–/+

6.6.6 Multiple ADJUNCTs

Finally, I will conclude by examining three instances of apparently discontinuous expressions involving complementizer suffixes.

The first type was foreshadowed in the discussion of the complementizer suffix *puru*. It comprises the situation when a complementizer suffix is being used like a semantic case suffix, and the nominal to which it attaches acts as the OBLIQUE_{theta} of that complementizer suffix. Thus, if an expression such as *ngapa-puru...wiri-puru* 'rain-CIRC large-CIRC' is discontinuous, *wiri* must still be interpreted as an ADJUNCT modifying the OBLIQUE_{theta} of the predicate *puru*, namely *ngapa*. This can be represented in exactly the same way in which I represented discontinuous semantic case-suffixes in Chapter 4. Nothing more need be said about it, except that it is not common.

The second type is perhaps the most common. Two nominals appear in a sentence. They have the same complementizer suffix, but one is an ordinary nominal and the other is a nominalized verb. The ordinary nominal apparently acts as the OBJECT of the nominalized verb. Examples follow:

(207) Narnngu + ju wita watiya kuja-ka-lu jilypi-yirra-rni
hook-ABS + EUPH small-ABS tree-ABS REL-PRES-3pl insert-put-NPST
pikirri-rla *kurlarda-ku* *jirri.marda-rninja-ku*.
spear thrower-LOC spear-DAT- hold-INF-DAT
A hook is a small piece of wood which is secured with sinew onto a spear-thrower in order to hold a spear. [narnngu]

(208) *Paji-rninja-rla* *watiya-rla*, laju manyani ka-lu
break-INF-SEQ tree-SEQ grub grub.sp-ABS PRES-3pl
yapa-ngku nga-rni.
person-ERG eat-NPST
They break open the tree and then they eat the 'manyani' grub. [manyani]

The nominals with identical case-marking need not be adjacent.

It is possible that an account similar to that which I developed for discontinuous semantic expressions could be developed for these too. Under such an account, the nominal with the complementizer suffix would function syntactically as the OBJECT of the nominalized verb, just as a semantic case expression can have an $OBLIQUE_{theta}$ and an ADJUNCT of that $OBLIQUE_{theta}$ which are not adjacent in c-structure. However, there are technical difficulties with such an account, and furthermore, there is some evidence against it. Consider (209).

(209) *Maliki-kirra* -rna *ngirnti-kirra* nya-ngu yapa
dog-OCOMP -1sg tail-OCOMP see-PAST person-ABS
ya.nka-nja-kurra.
grab-INF-OCOMP
I saw the man grab the dog by the tail.

Observe that the verb *yarnka* normally takes a DATIVE:

(210) *Ngirnti-ki* -rna-rla yarnka-ja *maliki-ki.*
tail-DAT -1sg-DAT grab-PAST dog-DAT
I grabbed the dog by the tail. [bodypart elic.]

If *maliki-kirra ngirnti-kirra* is acting as the syntactic OBJECT of *yarnkanjakurra* in (209), then the selectional restrictions of *yarnkanja* are not satisfied, since *maliki-kirra ngirnti-kirra* does not have DATIVE case.

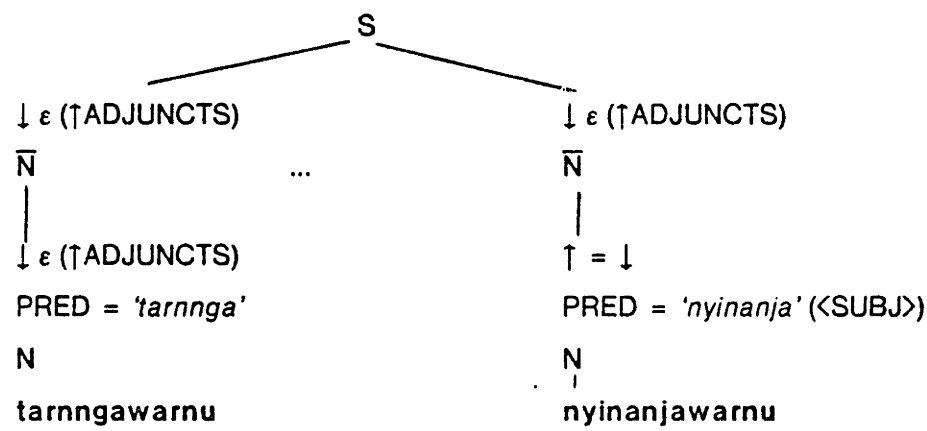
An alternative approach is the one I developed in 6.6.4 for apparent SUBJECTs marked with the SOURCE case, namely to assume that these apparent OBJECTs are really part of a separate ADJUNCT which happens to be construed with the nominalized verb ADJUNCT. This account relies heavily on the fact that ordinary nominals with complementizer suffixes can appear freely in the sentence, whether or not a nominalized verb with the same complementizer suffix is present. Under such an account, in (207) *kurlarda-ku* would be an ADJUNCT, *ku* would be its functional head, and *kurlarda* the $OBLIQUE_{theta}$ of *ku*. *Jirrimardarninjaku* would also be an ADJUNCT, and *jirrimardarninja* would provide the functional head. It is subcategorized for an OBJECT, and introduces a null pronominal for that OBJECT. This null pronominal is anaphorically linked with the $OBLIQUE_{theta}$ of *ku* in the other ADJUNCT, namely *kurlarda*. A paraphrase then might be:

[for a spear, for hooking it].

The third type of discontinuous expression to consider is somewhat less common. This is the situation when a nominal with a complementizer suffix and a nominalized verb with a complementizer suffix both appear in the same sentence, and the nominal is interpreted as an ADJUNCT predicated of the event described by the nominalized verb. An example follows:

(211) (..)waku -rna tarlarlma-nu, *tarnnga-warnu* *nyina-nja-warnu.*
arm-ABS -1sg flex-PAST always-ASSOC sit-INF-ASSOC
I flexed my arms after sitting for a long while. [Excerptions]

I propose to treat these in much the same way as I treated discontinuous semantic constituents. An abbreviated annotated c-structure tree follows.



Tarnngawarnu is labelled as an ADJUNCT which does not have a functional head (↑ = ↓), but exhaustively dominates another node labelled ADJUNCT. *Nyinanjawarnu* has a functional head. For the f-structure resulting from this annotated c-structure to be coherent, there must be something for *tarnngawarnu* to modify. This is achieved if it is merged with the f-structure containing *nyinanjawarnu.* It can then be predicated of the even which *nyinanja* describes. (The Adjunct Agreement Convention will need to be modified to encompass complementizer suffixes, ensuring that both ADJUNCTs have the same complementizer suffix).

There are many aspects of complementizer suffixes in Warlpiri which this account has either skimmed over, or left untouched; for instance, the embedding of non-finite clauses within other non-finite clauses, the possibilities for wo:ds to have several complementizer suffixes, the constraints on order within non-finite clauses, the constituency of non-finite clauses, the relationship of preverbs to non-finite verbs. For some of these areas, fuller accounts are given in Hale [EFW], and Nash (1980). For others, the data has yet to be analyzed. I have ignored the problems which these areas raise, in the hope of showing clearly that semantic case suffixes and complementizer suffixes share a number of properties. I have tried, moreover, to show that the principal similarities and differences between the case suffixes and the complementizers can be represented explicitly by developing a theory of the relationship between morphology and syntax.

BIBLIOGRAPHY

Abbreviations

AIAS:	Canberra: Australian Institute of Aboriginal Studies, (for publications since mid – 1976) Atlantic Highlands, N.J.: Humanities Press.
CLS:	*Proceedings of the Chicago Linguistics Society*
FofL:	*Foundations of Language*
IULC:	Indiana University Linguistics Club.
JL	*Journal of Linguistics*
Lg:	*Language*
LI:	*Linguistic Inquiry*
NELS:	*Proceedings of the North Eastern Linguistics Society*

Part 1: *Works treating Australian languages*

Andrews, Avery. 1982 b. A theory of syntactic case – marking. ms. Canberra: Australian National University.

Carrier, Jill. 1976. Grammatical relations in Warlpiri. ms. Cambridge: MIT

Dench, Alan. 1981. *Panyjima phonology and morphology.* Canberra: Australian National University MA thesis.

Dixon, R.M.W. 1971. *The Dyirbal language of North Queensland.* Cambridge, U.K.: Cambridge University Press.

Dixon, R.M.W. ed. 1976. *Grammatical categories in Australian languages.* Linguistic Series No. 22. AIAS.

Duncan, David. 1976. A proposal for adjunction in Walbiri. ms. Cambridge: MIT

Goddard, Cliff. 1982. Case systems and case marking in Australian languages: a new interpretation. *Australian journal of linguistics*: 2, 167-196.

Granites, Robin Japanangka. 1976. Short esssays in Warlpiri linguistics. ms. Cambridge: MIT.

Granites, Robin Japanangka, Kenneth Hale, and David Odling-Smee. 1976. Survey of Warlpiri grammar. ms. Cambridge: MIT.

Hale, Kenneth. 1967. Preliminary remarks on Walbiri grammar. ms. Cambridge: MIT.

Hale, Kenneth. 1973 a. Person marking in Walbiri. In *A Festschrift for Morris Halle*. Ed. by Stephen Anderson and Paul Kiparsky. pp. 308 - 344. New York: Holt, Rinehart & Winston, Inc.

Hale, Kenneth. 1973 b. Deep - surface canonical disparities in relation to analysis and change: an Australian example. In *Current Trends in Linguistics*, Volume 11. Ed. by Thomas Sebeok. pp. 401 - 458. The Hague: Mouton.

Hale, Kenneth. 1974. Warlpiri - English vocabulary, prepared for use in the Yuendumu Warlpiri language program. mimeo. Cambridge: MIT.

Hale, Kenneth. 1975. Gaps in grammar and culture. In *Linguistics and Anthropology. In Honor of C.F. Voegelin*. Ed. by M. Dale Kinkade, Kenneth L. Hale and Oswald Werner. pp. 295 - 315. Lisse: The Peter de Ridder Press.

Hale, Kenneth. 1976. The adjoined relative clause in Australia. In Dixon, ed. *q.v.*, pp. 78 - 105.

Hale, Kenneth. 1981 a. *On the position of Walbiri in a typology of the base.* Bloomington: *IULC*. (Published version of *On the position of Walbiri in a typology of the base*, 79pp. mimeo, MIT, 1979).

Hale, Kenneth. 1981 b. Preliminary remarks on the grammar of part - whole relations in Warlpiri. In *Studies in Pacific languages and cultures in honour of Bruce Biggs*. Ed. by Jim Hollyman and Andrew Pawley. Auckland: Linguistics Society of New Zealand.

Hale, Kenneth. 1982 a. Preliminary remarks on configurationality. *NELS* 12: 86 - 96.

Hale, Kenneth. 1982 b. The essential features of Warlpiri main clauses. In Swartz ed., *q.v.*. (Published version of: *The essential features of Warlpiri main clauses*. 125 pp. mimeo., MIT, 1978)

Hale, Kenneth. 1982 c. Reflexives in Warlpiri and Aranda. mimeo problem - set. Cambridge: MIT.

Hale, Kenneth. (to appear) Warlpiri and the grammar of non - configurational languages. *Natural language and linguistic theory* No. 1.

Hale, Kenneth. n.d.a. Coincidence: a Warlpiri semantic category. Handout for talk.

Hale, Kenneth. n.d.b. Two Aboriginal semantic traditions in Australia. Handout for talk. Cambridge: MIT.

Kesteven, Sue. 1975. Comparatives and adjuncts in Walbiri. Talk given at Linguistics Seminar. Canberra: A.N.U.

Laughren, Mary. 1977. Pronouns in Warlpiri and the category of number. ms. Yuendumu, N.T.: Dept. of Education.

Laughren, Mary. 1978. Directional terminology in Warlpiri. ms. Yuendumu, N.T.: Dept. of Education.

Laughren, Mary. 1981. Number strand - Warlpiri. ms. Yuendumu, N.T.: Dept. of Education.

Laughren, Mary. 1982 a. A preliminary description of propositional particles in Warlpiri. In Swartz, ed. *q.v.*.

McConvell, Patrick. 1978. Hierarchical variation in pronominal clitic attachment in the Eastern Ngumbin languages. In *Australian Linguistic Studies*. Papers in Australian Linguistics No. 13. Pacific Linguistics A.59. Ed. by S.A. Wurm. Canberra: Department of Linguistics, Research School of Pacific Studies, A.N.U.

McConvell, Patrick. n.d. Nasal cluster dissimilation and constraints on phonological variables in Gurindji and related languages. Handout for talk.

Nash, David. 1979 a. A preliminary vocabulary of the Warlmanpa language. Grammatical preface. Warlmanpa verbs. 41 + 13p. ms, Cambridge: MIT (revised June 1981).

Nash, David. 1979 b. Warlpiri vowel assimilations. In *Papers on syllable structure, metrical structure and harmony processes*. Ed. by Kenneth Safir. pp. 12 - 25. MIT Working papers in Lingustics. Vol. 1. Cambridge: MIT

Nash, David. 1980. *Topics in Warlpiri Grammar*. MIT dissertation. Cambridge.

Nash, David, and Jane Simpson. 1981. Ngarluma is not split-ergative. Paper presented at the Australian Linguistics Society Meeting. Canberra. August, 1981.

Nash, David. 1982. Warlpiri preverbs and verb roots. In Swartz, ed. *q.v.*.

O'Grady, Geoffrey N. 1961. In 'More on Lexicostatistics'. [A compilation of comments by several authors on Dell Hymes: 'Lexicostatistics so far', *Current Anthropology* 1.1: 3 - 44]. *Current Anthropology* 1.4: 338 - 339.

O'Grady, Geoffrey N. 1964. *Nyangumata grammar*. Oceania Linguistics Monographs, No. 9. Sydney: University of Sydney.

O'Grady, Geoffrey N., & C.F. and F.M. Voegelin. 1966. Languages of the World: Indo - Pacific Fascicle Six. *Anthropological Linguistics* 8.2(February),1 - 197.

Simpson, Jane. 1980. Ngarluma as a W* language. ms, Cambridge: MIT.

Simpson, Jane, and Jeffrey Heath. 1982. A sketch grammar of Warumungu. ms. Cambridge: MIT and Harvard.

Simpson, Jane and Joan Bresnan. 1982. Control and obviation in Warlpiri. In *Proceedings of the First Annual West Coast Conference on Formal Linguistics*, Stanford University, January 1982. A substantially revised version is to appear in *Natural language and linguistic theory*, No.1.

Simpson, Jane. 1983 a. Discontinuous verbs and the interaction of morphology and syntax in Warlpiri. Paper to appear in the *Proceedings of the Second Annual West Coast Conference on Formal Linguistics*. February, 1983.

Simpson, Jane. 1983 b. Interaction of morphology and syntax. Paper accepted for the GLOW Colloquium, York.

Steriade, Donca. 1979. The input representations to Warlpiri's vowel assimilation rules. Appendix to: 'Vowel harmony in Khalka Mongolian'. In *Papers on syllable structure, metrical structure and harmony processes*. Ed. by Kenneth Safir. MIT Working papers in Lingustics. Vol. 1. Cambridge: MIT

Swartz, Stephen. 1982. Syntactic structure of Warlpiri clauses. In Swartz, ed. *q.v.*.

Swartz, Stephen, ed. 1982. *Papers in Warlpiri grammar: in memory of Lothar Jagst, Work - Papers of SIL - AAB.* Series A, Volume 6. Berrimah, N.T.: Summer Institute of Linguistics.

Tsunoda, Tasaku. 1978. *The Djaru language of Kimberley, Western Australia.* Monash University dissertation: Melbourne, Australia. Published 1981. *The Djaru Language of Kimberley, Western Australia.* Pacific Linguistics, Series B - No.78. Department of Linguistics, Research School of Pacific Studies, A.N.U. Canberra.

Tsunoda, Tasaku. 1980. Djaru syntax and relational grammar. *Bulletin of Faculty of Letters*, LXXVI: 77 - 85. University of Nagoya.

Tsunoda, Tasaku. 1981. Interaction of phonological, grammatical and semantic factors: an Australian example. ms. University of Nagoya.

Wordick, Frank J. 1981. *The Yindjibarndi language.* Written in cooperation with the

members of Ieramagadu Group Inc., Roebourne,W.A. ms. Canberra.

Part 2: General Works

Allan, Keith. 1973. Complement noun phrases and prepositional phrases, adjectives and verbs. *FofL* 10: 3, 377 – 397.

Allen, Margaret. 1978. *Morphological investigations*. University of Connecticut PhD dissertation.

Anderson, Stephen. 1974. *The organization of phonology*. New York: Academic Press.

Andrews, Avery. 1971. Case agreement of predicate modifiers in Ancient Greek. *LI* 2.2, 127 – 151,

Andrews, Avery. 1981. The rudiments of coordinate structure in LFG. Canberra: A.N.U.

Andrews, Avery. 1982 a. A note on the constituent structure of adverbials and auxiliaries. *LI* 13.3 313 – 317

Andrews, Avery. 1982 c. Long distance agreement in Modern Icelandic. In *The Nature of Syntactic Representation*. Ed. by Pauline Jacobson and Geoffrey Pullum. Dordrecht: D. Reidel Publishing Company.

Andrews, Avery. 1982 d. The representation of case in modern Icelandic. In J. Bresnan, ed. *q.v.*

Archangeli, Diana. 1982. Georgian: some syntax and some morphology. ms. Cambridge: MIT.

Aronoff, Mark. 1976. *Word formation in generative grammar*. Cambridge: MIT Press.

Bach, Emmon. 1975. Nouns and noun – phrases. In *The logic of grammar*. Ed. by Donald Davidson and Gilbert Harman. Encino: Dickenson.

Baker, Mark. 1982. Objects, themes and lexical rules in Italian. ms. Cambridge: MIT.

Baker, Mark. 1983. "Assume GF" and the order of morphemes. ms. Cambridge: MIT.

Bell, Sarah J. 1981. Comparative restrictiveness of Relational Grammar and Lexical Syntax. *Lingua* 55: 1 – 39.

Bolinger, Dwight. 1967. Adjectives in English: attribution and predication. *Lingua* 18: 1 – 34.

Bolinger, Dwight. 1971. *Tne phrasal verb in English*. Cambridge: Harvard University Press.

Borer, Hagit. 1980. *Parametric variations in clitic configurations*. MIT dissertation: Cambridge.

Bresnan, Joan. 1976. Toward a realistic model of transformational grammar. Paper presented at the Convocation on Communications, March 9 – 10, 1976, MIT.

Bresnan, Joan. 1978. A realistic transformational grammar. In *Linguistic Theory and Psychological Reality*. Ed. by M. Halle, J. Bresnan, and G. Miller. Cambridge: MIT Press.

Bresnan, Joan. 1979. A theory of grammatical representation. duplicated lecture notes, Cambridge: MIT.

Bresnan, Joan. 1980 a. Polyadicity. In T. Hoekstra, H. van der Hulst and M. Moortgat, eds. *q.v.*. Revised in J. Bresnan, ed.*q.v.*

Bresnan, Joan. 1980 b. The Passive in lexical theory. *Occasional Paper # 7*, The Center for Cognitive Science, MIT. Also in J. Bresnan, ed. *q.v.*

Bresnan, Joan. 1982 a. Control and complementation, *LI* 13:3. Also in J. Bresnan, ed. *q.v.*

Bresnan, Joan. ed. 1982 b. *The mental representation of grammatical relations.* Cambridge: MIT Press.

Burzio, Luigi. 1981. *Intransitive verbs and Italian auxiliaries*. MIT dissertation. Cambridge.

Carlson, Gregory. 1977. *Reference to kinds in English.* University of Amherst dissertation. Amherst. Also, Bloomington: *IULC*, 1978.

Carlson, Lauri. 1978. Central problems in Finnish syntax. Parts 1 and 2: Clause types, case and control. ms. Cambridge: MIT.

Carter, Richard. 1976. Some linki ıg regularities. ms.

Chapin, Paul. 1970. Samoan pronominalization. *Lg*:46: 2, 366 – 378.

Chomsky, Noam. 1965. *Aspects of the Theory of Syntax*. Cambridge: MIT Press.

Chomsky, Noam. 1970. Remarks on nominalization. In *Readings in English Transformational Grammar*. Ed. by R. Jacobs and P. Rosenbaum. Waltham: Ginn.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris Publications.

Cole, Peter, and Jerrold M. Sadock. eds. 1977. *Syntax and semantics: Vol. 8: Grammatical relations*. New York: Academic Press.

Comrie, Bernard. 1977. In defense of spontaneous demotion: the impersonal passive. In P. Cole and J. Sadock, eds. *q.v.*, p.47 – 59.

Comrie, Bernard. 1978. *Aspect*. Cambridge: Cambridge University Press.

Corum, Claudia. 1973. Anaphoric peninsulas. *CLS* 9.

Cruse, D.A. 1973. Some thoughts on agentivity. *JL* 9:1, 11 – 23.

Dixon, R.M.W. 1982b. *Where have all the adjectives gone? and other essays in semantics and syntax*. Berlin: Mouton.

Dowty, David R. 1979. *Word meaning and Montague grammar*. Dordrecht: D. Reidel.

Dryer, Matthew. (to appear). Indirect objects in Kinyarwanda revisited. In *Studies in Relational Grammar*. Ed. by David Perlmutter and Carol Rosen.

Emonds, Joseph. 1972. Evidence that indirect object movement is a structure – preserving rule. *FofL* 8: 4, 546 – 561.

Fillmore, Charles J. 1968. The case for case. In *Universals in linguistic theory*. Ed. by Emmon Bach and Robert Harms. p.1 – 90. New York.

Fillmore, Charles J. 1977. The case for case reopened. In Cole and Sadock, eds. *q.v.* p.59 – 83.

Fraser, Bruce. 1976. *The Verb-Particle combination in ENglish*. New York: Academic Press.

Freidin, Robert and Leonard Babby. 1982. On the interaction of lexical and structural properties. Case structure in Russian. ms.

Gary, Judith O. and Edward L. Keenan. 1977. On collapsing grammatical relations in universal grammar. In Cole and Sadock, eds. *q.v.*, p.83 – 120.

Gazdar, Gerald. 1982. Phrase structure grammar. In *The nature of syntactic representation*. Ed. by Pauline Jacobson and Geoffrey Pullum. Dordrecht: D. Reidel.

Green, Georgia. 1970. How abstract is surface structure? *CLS* 6. 270 – 281.

Green, Georgia. 1972. Some observations on the syntax and semantics of instrumental verbs. *CLS* 8: 83-98.

Green, Georgia. 1973. A syntactic syncretism in English and French. In *Issues in Linguistics: Papers in Honor of Henry and Renee Kahane*. Ed. by B. Kachru et al., 257 – 278. Urbana: University of Illinois Press.

Grimshaw, Jane. 1979. Complement selection and the lexicon, *LI* 10.2.

Grimshaw, Jane. 1980. On the lexical representation of Romance reflexive clitics. *Occasional Paper # 5*, The Center for Cognitive Science, MIT. Also in J. Bresnan, ed. *q.v.*

Grimshaw, Jane. 1982. Subcategorization and grammatical relations. In A. Zaenen, ed. *q.v.*, p.35.

Gruber, Jeffrey. 1970. *Studies in lexical relations*. Bloomington: *IULC*.

Ingria, Robert. 1978. Greek predicate case agreement and the theory of indexing. ms. Cambridge: MIT.

Hale, Kenneth. 1978. Obviation in Modern Irish. ms. Cambridge: MIT.

Halliday, M.A.K. 1967. Notes on transitivity and theme in English. Part 1. *JL* 3. 37 – 8

Halvorsen, Per – Kristian. (to appear). Semantics for lexical – functional grammar. To appear in *LI* 14.

Halvorsen, Per – Kristian. 1982. Norwegian reflexives and lexical – functional grammar. ms. Cambridge: MIT.

Harris, James, and K.P. Mohanan. in prep. The mismatches between morphology and syntax. Camrbidge: MIT. Kimball. New York: Seminar Press.

Hoekstra, T., H. van der Hulst, and M. Moortgat, eds. 1980. *Lexical Grammar*. Dordrecht: Foris Publications.

Huang, C-T. J. 1979. A lexicalist account of resultative compounds and resultative complements in Chinese. ms Cambridge: MIT.

Huang, C-T. J. 1982. *Logical relations in Chinese and the theory of grammar.* MIT dissertation. Cambridge.

Huang, C-T. J. 1983. Small PRO, control, and local identification of the empty category Paper presented at WCCFL 2, 1983.

Jackendoff, Ray S. 1972. *Semantic interpretation in generative grammar*. Cambridge: MIT Press.

Jackendoff, Ray S. 1976. Towards an explanatory semantic representation. *LI* 8:1, 89-150.

Jackendoff, Ray S. 1977. $\overline{X}$ *Syntax: A study of phrase structure*. Cambridge: MIT Press.

Jacobson, Pauline. 1982. Comments on 'Subcategorization and grammatical relations' by Jane Grimshaw. In A. Zaenen, ed. *q.v.* p.57.

James, Deborah. 1979. Two semantic constraints on the occurrence of adjectives and participles after the noun in English. *Linguistics* 17: 687 – 705.

Jespersen, Otto. 1961. *A modern English grammar on historical principles.* Parts 3 and 5. London: Allen & Unwin.

Jespersen, Otto. 1933. The system of grammar. In *Selected Writings of Otto Jespersen*. London: George Allen & Unwin Ltd.

Johnson, David. 1977. On relational constraints on grammars. In Cole and Sadock, eds. *q.v.*, p.151 – 78.

Kaplan, Ronald, and Joan Bresnan. 1980. Lexical – functional grammar: A formal system for grammatical representation. *Occasional Paper # 13*, The Center for Cognitive Science, MIT. Also in J. Bresnan, ed. *q.v.*

Kimenyi, Alexander. 1980. *A relational grammar of Kinyarwanda.* Berkeley: University of California Press.

Kiparsky, Paul. 1982. Lexical morphology and phonology. In *Linguistics in the morning*

calm, ed. by I.-S. Yang. Seoul: Hanshin.

Kiparsky, Paul. (to appear). Word-formation and the lexicon. In *Proceedings of the 1982 Mid-America Linguistics Conference*, ed. by F. Ingemann. University of Kansas, Lawrence, Kansas.

Klavans, Judith. 1982. Configuration in non – configurational languages. In *Proceedings of the First West Coast Conference on Formal Linguistics*

Kuno, Susumo. 1970. Some properties of non – referential noun – phrases. In *Studies in general and oriental linguistics, presented to Shiro Hattori on the occasion of his sixtieth birthday.* Ed. by R. Jakobson and S. Kawomoto. pp 348 – 73. Tokyo: TEC company.

Levin, Beth. (to appear) Unaccusative verbs in Basque. *NELS* 13.

Levin, Beth. 1983. *On the nature of ergativity.* MIT dissertation. Cambridge.

Levin, Lori. 1981. Lexical representation of quirky case in Icelandic. ms. Cambridge: MIT.

Levin, Lori. 1982. Sluicing: a lexical interpretation procedure. In J. Bresnan ed. *q.v.*. pp.590 – 654.

Levin, Lori. forthcoming MIT dissertation.

Levin, Lori, and Jane Simpson. 1981. Quirky case and the structure of Icelandic lexical entries. *CLS* 17: 185 – 196.

Lieber, Rochelle. 1980. *On the organization of the lexicon.* MIT dissertation. Cambridge. Also published, 1981, Bloomington: *IULC*.

Ljung, Magnus. 1975. State control. *Lingua* 37: 129 – 150.

Luján, Marta. 1981. The Spanish copulas as aspectual indicators. *Lingua* 54: 165 – 210.

Lyons, John. 1977. *Semantics, vols 1 and 2.* Cambridge: Cambridge University Press.

Maling, Joan. 1981. Transitive adjectives: a case of categorial reanalysis. In *Linguistic Categories: Auxiliaries and Related Puzzles.* Ed. by Frank. W. Heny. Dordrecht: D. Reidel.

Maling, Joan. 1982 . Reflexives in Modern Icelandic. ms. Cambridge: MIT and Brandeis.

Manzini, Maria Rita. 1982. On control and control theory. ms. Cambridge: MIT.

Marantz, Alec. 1981. *On the nature of grammatical relations.* MIT dissertation. Cambridge.

Marantz, Alec. 1982. Grammatical relations and explanation in linguistics. In A. Zaenen, ed. *q.v.*.

Marantz, Alec, and Timothy Stowell. eds. 1982. *MIT Working Papers in Linguistics*, Vol. 4. Cambridge: MIT.

McConnell – Ginet, Sally. 1982. Adverbs and logical form: a linguistically realistic theory. *Lg* 58, 1: 144 – 185

Mohanan, K. P. 1981 a. Move NP or Lexical Rules: Evidence from Malayalam Causativization. ms. Cambridge: MIT.

Mohanan, K. P. 1981 b. On pronouns and their antecedents. ms. Cambridge: MIT.

Mohanan, K. P. 1982 a. Infinitival subjects, government, and abstract case. *LI* 13.2 323 – 327.

Mohanan, K. P. 1982 b. Functional and anaphoric control. ms. University of Texas at Austin.

Mohanan, K. P. 1982 c. Grammatical relations and clause structure in Malayalam. In J. Bresnan, ed. *q.v.*

Mohanan, K. P. 1982 d. *Lexical phonology.* MIT dissertation. Cambridge.

Mohanan, K. P. 1983. A lexical linking theory of inflectional morphology. ms. Cambridge: MIT.

Montalbetti, Mario. 1981. Consistency and clitics. ms. Cambridge: MIT.

Muysken, Pieter. 1981 a. Quechua word structure. In *Binding and filtering*, ed. by Frank W. Heny. 279-327. Cambridge: MIT Press.

Muysken, Pieter. 1981 b. The theory of morphological control. *NELS* 11: 219-234.

Muysken, Pieter. 1982. Mechanisms constraining word order in Quechua: Alternatives to phrase structure. *NELS* 12: 187-198.

Neidle, Carol. 1982 a. *The role of case in Russian syntax*. MIT dissertation. Cambridge.

Neidle, Carol. 1982 b. Case agreement in Russian. In J. Bresnan, ed. *q.v.*

Nichols, Johanna. 1978. Secondary predicates. *Berkeley Linguistics Society*, 4: 114-127.

Ostler, Nicholas. 1979. *Case-linking: a theory of case and verb diathesis applied to classical Sanskrit*. MIT dissertation. Cambridge. (Abridged version *A theory of case linking and agreement* published by IULC, 1980.)

Pesetsky, David. 1979. Russian morphology and lexical theory. ms. Cambridge: MIT.

Pesetsky, David. 1982. *Paths and categories*. MIT dissertation. Cambridge.

Platzack, Christer. 1982. Transitive adjectives in Swedish. *The Linguistic Review*.

Postal, Paul. 1969. Anaphoric islands. *CLS* 5.

Postal, Paul. 1970. On coreferential complement subject deletion. *LI* 1: 4 439 – 500.

Pullum, Geoffrey. 1982. Free word – order and phrase structure rules. *NELS* 12: 209 – 220.

Quicoli, Antonio. 1972. *Aspects of Portuguese complementation*. SUNY dissertation. Buffalo.

Randall, Janet. 1981. A lexical approach to causatives. *University of Amherst Occasional Papers in Linguistics*, 7. Amherst: University of Massachusetts.

Rappaport, Malka. 1980. On the derivation of derived nominals. ms. Cambridge: MIT.

Riviere, Claude. 1982. Objectionable objects. *LI* 13: 4.

Rosen, Carol. 1981. *The relational structure of reflexive clauses: evidence from Italian*. Harvard dissertation. Cambridge.

Rosen, Carol. 1982. The interface between semantic roles and initial grammatical relations. In A. Zaenen, ed. *q.v.*, p. 71.

Ross, John Robert. When the Be's go, the frost comes. In *Explorations in linguistics: Papers in honour of Kazuko Inoue*. Ed. by George Bedell et al., 464 – 470. Kenkyusha: Tokyo.

Sadock, Jerrold M. 1980. Noun incorporation in Greenlandic. *Lg* 56, 2: 300 – 319

Sapir, Edward. 1911. Noun incorporation in American languages. *American Anthropologist*, n.s. 13. 250-282.

Schein, Barry. 1982 a. Non – finite clauses in Russian. Cambridge: MIT. In Marantz and Stowell, eds. *q.v.*

Schein, Barry. 1982 b. Small clauses and predication. ms. Cambridge: MIT.

See Gebauer, Margaret. 1980. The lexical phrase: syntactic manoeuvering in the lexicon. *NELS* 10: 127 – 151 [*Cahiers linguistiques d'Ottawa.* Vol.9]

Selkirk, Elisabeth O. 1982. *The syntax of words.* Cambridge: MIT Press.

Simpson, Jane. 1980. Noun phrase structures in Amoy. ms. Cambridge: MIT.

Simpson, Jane. 1982a. The role of PRO in case-agreement. ms. Cambridge: MIT.

Simpson, Jane. 1982b. Secondary predicates in English, Icelandic and Finnish. ms. Cambridge: MIT.

Simpson, Jane. Resultative attributes. To appear in a volume on Lexical-Functional Grammar, edited by Lori Levin, Malka Rappaport and Annie Zaenen. IULC.

Speas, Peggy. 1981. Navajo verbal prefixes in current morphological theory. ms.

Stanley, Richard. 1969. *The phonology of the Navaho verb.* MIT dissertation. Cambridge.

Stowell, Timothy. 1981. *Origins of phrase structure*. MIT dissertation. Cambridge.

Stowell, Timothy. 1982 a. Conditions on reanalysis. In Marantz and Stowell, eds. *q.v.*

Stowell, Timothy. 1982 b. The tense of infinitives. *LI* 13.2 561 – 570.

Stump, Gregory. 1981. *The formal semantics and pragmatics of free adjuncts and absolutes*. Ohio State University dissertation. Columbus.

Teyssier, J. 1968. Notes on the syntax of the adjective in Modern English. *Lingua* 20: 225 – 249.

Thomason, Richmond, and Robert Stalnaker. 1973. A semantic theory of adverbs. *LI* 4.2

195 – 219.

Thompson, S.A. 1973. Resultative verb compounds in Mandarin Chinese: a case for lexical rules. *Lg* 49:2. 361 – 79.

Thráinsson, Höskuldur. 1979. *On complementation in Icelandic*. Harvard dissertation. Cambridge.

Travis, Lisa. 1980. X – Comps and adjuncts. ms. Cambridge: MIT.

Van Riemsdijk, Henk. 1981. On 'Adjacency' in phonology and syntax. *NELS* 11: 399-413.

Visser, F. Th. 1970. *An historical syntax of the English language.* Vol.1. Leiden: E.J. Brill

Whitman, John. 1981. The internal structure of NP in verb final languages. *CLS* 17

Whitman, John. 1982. Configurationality parameters. ms. Cambridge: Harvard.

Williams, Edwin. 1980. Predication. *LI* 11.1.

Williams, Edwin. 1981. On the notions 'Lexically Related' and 'Head of a word'. *LI* 12.

Zaenen, Annie. 1981. Double Objects in Kikuyu? ms. Cambridge: Harvard.

Zaenen, Annie. ed. 1982. *Subjects and other subjects.* Proceedings of the Harvard conference on the representation of grammatical relations, December 1981. Bloomington: IULC.

Zubizarreta, Maria Luisa. 1982 a. *On the relationship of the lexicon to syntax*. MIT dissertation. Cambridge.

Zubizarreta, Maria Luisa, and Jean – Roger Vergnaud. 1982 b. On virtual categories. In Marantz and Stowell, eds. *q.v.*.