reactions to any feature of the journal. Preference will be given to letters of 500 words or less. Finally, we would mention that this first issue is longer than the intended normal length.

THE EDITORS

KEN HALE

WARLPIRI AND THE GRAMMAR OF NON-CONFIGURATIONAL LANGUAGES*

0. Introductory Remarks

The grammar of Warlpiri, an Aboriginal language of Central Australia, exhibits a number of properties which have come to be associated with the typological label 'non-configurational,' including, among others, (i) free word order, (ii) the use of syntactically discontinuous expressions, and (iii) extensive use of null anaphora. The present paper represents a report on work in progress dealing with the question of the position of warlpiri, and other languages of the type it represents, in a typology defined by a general theory of natural language. Specifically, I am concerned with the question of whether there exists a unified explanation for the concurrence in Warlpiri of certain properties, including those mentioned above, which distinguish it observationally from languages of another type, to which the label 'configurational' has been applied and which includes, among others, English.[1] To put the question in other words: Is there a parameter, clearly definable within a general theory of language, from which the observed differences between the two linguistic types follow straightforwardly?

Free word order is amply exemplified in any sufficiently large body of Warlpiri narrative or conversation. Moreover, to an extraordinary degree, it is true of Warlpiri that sentences containing the same content words in different linear arrangements count as repetitions of one another. Thus, for example, a sentence like (1) below may be rendered with the subject, object, and verb in any order, the only requirement being that the element which

* I would like to thank a number of Warlpiri speakers and colleagues in Warlpiri linguistics for helping me to learn what I know of Warlpiri grammar: Sam Japangardi Johnson, George Jampijinpa Robertson, Robin Japanangka Granites, Paddy Jupurrula Stuart, Darby Jampijinpa, Dinny Japaljarri Anderson, Mary Napaljarri Laughren, David Jungarrayi Nash, and Jane Nangala Simpson. And I wish to dedicate this paper to the memory of the late Mick Jupurrula Connell who got me started on the study of Warlpiri. I am also extremely grateful to Ann, Adrian, and Frank for urging me to write this essay, and especially to Sally, Caleb, and Ezra for making it possible for me to do so. None of the above mentioned people is to be blamed for shortcomings and distortions in this paper.

[1] The terms 'configurational' and 'non-configurational' are used in Chomsky, 1981, where a number of thought-provoking suggestions are made concerning the grammar of Japanese, assuming it to be non-configurational, as suggested in Farmer, 1980. I use these terms in essentially the same sense, though I am contrasting what might be termed "canonical" exemplars of the types (Warlpiri vs. English), while recognizing that many languages present mixed testimony in the extent to which they exhibit the superficial characteristics of non-configurational languages.

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we will refer to as the "auxiliary" (AUX) be in "second" (or Wackernagel's) position:[2]

(1) Ngarrka- ngku ka wawirri panti- rni.
man ERG AUX kangaroo spear NONPAST
The man is spearing the kangaroo.

Hence also:

(2) Wawirri ka panti-rni ngarrka-ngku.
(3) Panti-rni ka ngarrka-ngku wawirri.

And so on.

The use of syntactically discontinuous expressions is illustrated in (4) below, in which one nominal element appears in a position linearly non-adjacent to another nominal with which it may form a single expression in the logical form of the sentence, taking logical form, in general, to be that level of linguistic representation which expresses the manner in which the meaningful elements appearing in a sentence are related to one another (including, as in this instance, the relation which a restrictive determiner bears to the noun it qualifies):

(4) **Wawirri** kapi-rna panti- rni **yalumpu**.
kangaroo AUX spear NONPAST that
I will spear that kangaroo.

Here again, the relative linear order of words, apart from AUX, is free. This sentence receives, as its foremost reading, an interpretation in which the discontinuous pair **wawirri** 'kangaroo' and **yalumpu** 'that' form an expression corresponding to that represented by the single syntactic constituent **wawirri yalumpu** 'that kangaroo' in (5):

(5) Wawirri yalumpu kapi-rna panti- rni.
kangaroo that AUX spear NONPAST

[2] More detailed discussions of this and other aspects of Warlpiri grammar are to be found in Hale (1973, 1976, 1982b) and Nash (1980).

Morpheme-by-morpheme glossing of Warlpiri examples is for the most part self-explanatory – grammatical morphemes (suffixes and enclitics) are generally glossed in upper case, while the stems of lexical items are generally in lower case. Other notational practices will be explained in the text.

English translations, beneath the glossings, is extremely free and, in particular, does not attempt to reflect accurately the definiteness of noun phrases (thus, *the kangaroo* appearing in translations could also be *a kangaroo* in the majority of instances).

In claiming that Warlpiri word order is 'free', I do not intend to deny that word order influences the interpretation of sentences. The role of word order in interpretation is an aspect of Warlpiri still very much in need of investigation.

Here, the position of the AUX shows that what precedes it is a single syntactic constituent. If it were not, then (5) would constitute a violation of the otherwise general requirement that the AUX appear in second position.

I use the term 'null anaphora' to refer to the situation in which an argument (e.g., subject, object) is not represented by an overt nominal expression in phrase structure. It is exemplified in the sentences of (6) below:

(6) a. Ngarrka- ngku ka panti- rni.
man ERG AUX spear NONPAST
The man is spearing him/her/it.

b. Wawirri ka panti- rni.
kangaroo AUX spear NONPAST
He/she is spearing the kangaroo.

c. Panti- rni ka.
spear NONPAST AUX
He/she is spearing him/her/it.

In (6a), the object argument is non-overt, in the sense that it is not represented by a nominal expression in phrase structure. Similarly, the subject is non-overt in (6b), while in (6c) both the subject and the object are non-overt. In each such case, the non-overt argument is understood as having definite reference, just as do the English pronouns in the corresponding (rough) translations. That the arguments are taken to be third person singular is a function of the morphology of the auxiliary, in which the person markers are phonologically null. The situation in this latter regard could have been otherwise, as it in fact is in (5), where the morphology of the auxiliary indicates that the subject is first person singular (cf. section 2 below).

The essential features of Warlpiri phrase structure may be represented by means of the following two X-bar rule schemata (in which the symbol *X* designates a categorially vacuous node, rather than a variable in the usual sense):

(7) (a) $\bar{X} \rightarrow \bar{X}^* X$
(b) $\bar{V} \rightarrow AUX\ \bar{X}^* V\ \bar{X}^*$

The first schema represents the general case, expressing the fact that the head (the constituent which determines the categorial membership of the dominating $\bar{X}$) is final; it defines the structures of nominal expressions and of infinitive clauses. Categorial instantiation of the terminal and non-terminal

nodes is effected by lexical insertion and the percolation of categorial features inherent in the X-bar principle.[3] The second rule schema defines the phrasal structures of finite clauses, expressing the fact that the head (i.e., V) need not be final and the fact that finite clauses have an auxiliary. This latter element functions in concert with the verb to signal temporal, aspectual, and modal features of the sentence and to register certain information concerning the argument structure of the verb (e.g., the person and number of the subject, and of the object if there is one). In these functions, the auxiliary can properly be thought of as a part of the verb, so that the head of a tensed clause is, in effect, a discontinuous entity in phrase structure. The auxiliary is also the locus of sentence negation and the elements ('complementizers') which mark clausal subordination. The position of the auxiliary is considered here to be basically initial. Under appropriate conditions, it is inserted into second position, optionally or obligatorily, depending on certain phonological factors.[4] I assume that this is by means of a local movement rule belonging to that component of the grammar which concerns itself with the phonological form of sentences (i.e., the PF component of Chomsky, 1981, and references cited there.)

The rule schemata of (7) are sufficiently 'permissive' to define, among others, the phrase structures assumed to be associated with the sentences used above in illustrating the superficial syntactic properties of Warlpiri sentences. In particular, the three non-configurational characteristics cited at the outset are permitted by the system.

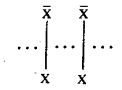
Free word order can be viewed as a joint function of lexical insertion and the phrase structure rules. Since the latter do not specify categorial membership of $\bar{X}$ constituents (apart from tensed clauses), lexical insertion is free to instantiate them in any relative linear order whatsoever.[5] Thus, for example, in

[3] Inherent in the X-bar theory of phrase structure (Chomsky, 1970; Jackendoff, 1977) is the principle that the head of a phrase at each hierarchical level (or 'type') belongs to the same category as does the phrase as a whole. Thus, for example, the categorial features of a noun phrase (i.e., [+ N, − V], in Chomosky, 1970) will be present at the lexical level (N), and at each node dominating the lexical item, up to, and including, the maximal projection of the category ($\bar{N}$, in Warlpiri). This, in essence, is what is meant when it is said that the categorial features of a lexical item 'percolate' to its maximal projection.

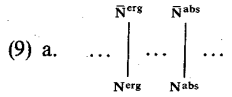
[4] Essentially, if the portion of the auxiliary preceding the subject person marker (*subj*, see 2 below) is monosyllabic or phonologically null, then the auxiliary must insert and become enclitic to the word which immediately precedes it upon insertion. Otherwise, insertion is optional (Hale, 1973). An alternative analysis of the auxiliary position, and of the constituent structure of Warlpiri clauses, is being developed by Simpson (in preparation; and see also Simpson and Bresnan, 1983).

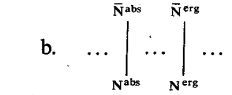
[5] I follow Lieber (1980) in assuming that the entities inserted into phrase structures are fully inflected words. Thus, an insertable nominal lexical item will not only be categorially a noun (N), but it will also belong to a particular case category (ergative, absolutive, dative, ...).

a string of the form

(8) 

an ergative nominal may insert at either X (thereby defining the category of the dominating $\bar{X}$, by virtue of the X-bar principle). An absolutive (morphologically unmarked) nominal is likewise free to insert at either X. Thus, the two case categories may appear in either order relative to one another. Thus,

(9) a. 

b. 

And by virtue of rule schema (7b), each of these nominal categories may appear either before or after the verb in a tensed clause. This, in essence, is what free word order amounts to, in the view adopted here for Warlpiri. In an intuitively clear sense, then, free word order follows from free lexical insertion within the relatively unconstrained limits defined by the Warlpiri system of phrase structure rules.

The existence in Warlpiri of discontinuous expressions – in particular, discontinuous nominal expressions, as illustrated in (4) above – can also be seen, in part, as a function of free lexical insertion. Since any nominal lexical item can be inserted at any X, there is, of course, nothing to prevent the insertion of, say, two absolutives at separate X nodes, dominated by separate $\bar{X}$ sisters to the same verb. It happens that Warlpiri sentences formed in this way receive coherent interpretations, including ones in which the syntactically separate nominals constitute single composite expressions in logical form.

Finally, the use of null anaphora, as characterized above and illustrated by (5–6), can also be seen as partially a consequence of this minimally constrained system. The phrase structure rule schemata permit the appearance of any number of $\bar{X}$ constituents as sisters to a given head, including none at all. This is the meaning of the 'star' notation ($\bar{X}^*$) in (7). If lexical insertion is also free, so that, for example, any tensed verb can be inserted at any V in a phrase marker defined by (7b), then it will sometimes be the case that the argument structure of a verb is not fully represented by overt

nominals in phrase structure. It is a fact of Warlpiri that sentences exhibiting this disparity are interpretable and fully grammatical.

In previous attempts to come to grips with the question of the typological position of Warlpiri, I have assumed that its non-configurational characteristics are simply a consequence of the particular system of phrase structure rules it employs (cf. Hale, 1981a, 1982a). That is to say, it has been my view that these characteristics follow in some natural way from the combination of 'flat' structure (i.e., projection of lexical categories just to the one-bar level) and categorial non-specificity in the initial, prelexical, definition of phrase markers. This is clearly one way to view the matter. However, it is also very reasonable to be skeptical of this approach and to argue that it simply begs a fundamental and more interesting question, namely: Why does Warlpiri use a phrase structure system of this highly 'permissive' type? This is a more interesting question because it focusses attention on the status of phrase structure in grammatical theory, rather than simply assuming that to be a matter which is essentially settled.

Much recent work in theoretical linguistics, in a variety of frameworks, suggests very strongly that certain (perhaps most) aspects of phrase structure are derivative of independent grammatical processes and principles. The X-bar theory of phrase structure, for example, itself incorporates as a fundamental principle the notion that 'phrasal types' (i.e., phrase internal 'levels' of structure, symbolized by number of bars or primes) are projections of lexical categories (cf. Chomsky, 1970; Jackendoff, 1977; George, 1980), suggesting that the hierarchical dimension of phrase structure is basically a lexical matter, rather than a matter pertaining to an autonomous phrase structure component. Moreover, the constituency of phrases is, to a very large extent, predictable from the subcategorizational properties of their lexical heads (cf., Grimshaw, 1981; Bresnan, 1982), suggesting a further diminution in the role of phrase structure as an autonomous system. And within the theory developed in *Lectures on Government and Binding* (Chomsky, 1981, hereinafter, GB), certain aspects of the internal organization of phrases in configurational languages can be seen as derivatives of independent principles of grammar (cf. Stowell, 1981, for a detailed study along these lines). Thus, for example, within the GB framework, the requirement that a noun phrase bearing the grammatical relation 'object' occupy a certain position in phrase structure can be seen as a function of the principles according to which it is assigned a Case and a thematic role, rather than as a function of the rules of phrase structure.

In short, it could well turn out that phrase structure, as an autonomous entity in linguistic theory, reduces to a bare minimum in the unmarked case – i.e., to statements stipulating just the relative linear ordering of the

head and its sisters within each phrasal type (i.e., at each level of hierarchical structure).

If phrase structure were essentially derivative in this sense, then it would be a mistake to give it a position of primacy in any attempt to characterize the fundamental typological difference between, say, Warlpiri and English. To give primacy to the phrase structural differences would be to miss the point.

In light of these considerations, I would like now to look at the matter from another angle. Specifically, I would like to explore the possibility that the typological distinction at issue here finds its origins not in phrase structure itself but, rather, in the nature of the relationship between phrase structure (PS) and LEXICAL STRUCTURE (LS). I use the term LS to refer to the argument structure of a predicator (e.g., a verb), and I assume that the logical form (LF) of a clause is defined, in part, by the relation of LS to PS. It is by virtue of this relation, for example, that the ergative nominal in the PS of sentences (1–3) above corresponds to the subject argument in the LS of the verb, and that the absolutive in the same sentences corresponds to the object argument.

To proceed in exploring the typological question from this point of view, it is necessary of course to enter into a discussion of the processes by means of which sentences are interpreted (in the limited sense just alluded to). This will be done here in an elementary fashion only, and in relation to sentences of the simplest sort. I believe, however, that despite this limited scope, enough of a foundation can be established to suggest what the fundamental configurationality parameter might be and to suggest avenues of inquiry in the future study of languages of the type which Warlpiri represents.

It is appropriate to mention that the conception of configurationality which I have arrived at in viewing the matter from this perspective is not really new, since, in one form or another, the essential ideas are already in the linguistic literature.[6] What I hope to do here is to present certain of these ideas in a particular combination and conceptual framework which will bring into view those aspects of so-called non-configurational languages which must be studied in depth in order, ultimately, to arrive at an adequate characterization of their grammars and, thereby, to determine their proper position in the linguistic typology defined by a general theory of grammar.

[6] The conception of free word order which I adopt here is essentially that found in Farmer (1980), Whitman (1979), and Lapointe (1980). My view of 'theta-role assignment' has been much influenced by the work of Carter (1976, 1976-7, and conversations over a number of years). And the entity which I refer to as 'lexical structure' (LS) here is essentially an amalgam of the 'virtual structure' of Vergnaud and Zubizarreta (1982) and the 'logico-semantic structure' of Marantz (1981), though my conception of this construct might be considered a distortion by those authors. Other ingredients of the view developed in this paper derive from a variety of sources, and these will be indicated in the text.

1. An Elementary Account of Warlpiri Lexical Structure and Linking

I will be concerned here with the mechanisms by means of which a simple verbal clause of Warlpiri is assigned an interpretation in the elementary sense of a properly defined set of associations between LS, thematic roles, and overt nominal expressions in PS. I will refer to an interpretation in this elementary sense as an initial FUNCTIONAL STRUCTURE (using this term in the spirit, but not the precise and careful detail, of Kaplan and Bresnan, 1982; and Bresnan, 1982).

I will assume that the lexical entry of a Warlpiri verb is a composite consisting at least of a categorial designation, a phonological form, a lexical structure (LS), and a dictionary definition. I will limit my attention here to the latter two components of the verbal entry.

The LS of a verb consists of an argument array and a predicate name (representing the meaning of the predicator and symbolized here by the spelling of the Warlpiri verb itself, in the nonpast form). Thus, the LS of the verb **panti-rni** 'pierce, poke, jab, spear,...' may be represented in preliminary fashion as in (10) below, depicting the fact that the verb is diadic, i.e., takes two arguments:

(10) [arg_x, arg_y, panti-rni]

The alphabetic subscripts to arguments in LS indicate the associations of arguments in LS with variables in the dictionary definition, or meaning of the verb. The verb under consideration here has, very roughly, the following definition, in which the variables correspond to participants involved in the action or process denoted by the verb.[7]

(11) { *x* produce indentation or puncture in the surface of *y*, by point coming into contact with said surface }

An argument in LS may be said to 'evaluate' the associated variable in the definition. It is by virtue of this association that an argument receives its thematic, or semantic, role. Adopting the terminology of the GB framework

[7] This definition is designed to express the 'common core' of the meaning of **panti-rni** in what might be termed its 'literal' uses. The definition consists of two parts, one (the first clause) expressing the *effect*, the other the *means*. Various general lexico-semantic rules of Warlpiri apply to the 'means clause' to specify the manner in which the effect is produced. In the unmarked case, the 'point' (mentioned in the means clause) is identified with *x* (e.g., as when *x*, a thorn, 'pricks' *y*, the bottom of one's foot); the PW (part-whole) rule of interpretation defines the 'point' as 'part of *x*' (e.g., as when *x*, say a child, 'pokes' *y*, say a person's stomach, with its finger); and the INST (instrumental) rule defines the 'point' as 'an entity used by *x*' (e.g., as when *x*, a man, 'spears' *y*, a kangaroo, with a spear); and so on.

here, I will say that an argument is "assigned a theta-role" (Chomsky, 1981, and elsewhere) in just this way. Accordingly, arg_x in (10) above is assigned the agent theta-role, taking 'agent' to be a term which embraces, among other notions, the 'producer of an effect' (i.e., in this instance, the entity producing the indentation or puncture). Similarly, arg_y is assigned the patient theta-role, that corresponding to the 'entity affected' (i.e., in this instance, the entity whose surface acquires an indentation or puncture). For expository convenience, I will henceforth make use of the familiar semantic role terms (agent, patient, goal, etc.), without thereby intending to take a position in regard to their status in linguistic theory, though I suspect that the proper way to view the matter is in terms of the association of LS arguments with variables in the definitions of predicators.

The assignment of theta-roles is not random, though this cannot be shown without attributing more texture to LS. The arguments in LS must be distinguished in terms of their grammatical functions (subject, object, etc.). Quite generally for verbs of the general type represented by Warlpiri **panti-rni**, the agent role is assigned to the subject argument, and the patient role is assigned to the object (cf. Hale, 1982b). The representation of these functions in LS, and their role in Warlpiri grammar, will be discussed at a later point.

Arguments in LS are also to be distinguished in terms of their associations with Warlpiri case categories. Here again, the associations appear to conform to quite general principles. For verbs of the agent-patient semantic class, like **panti-rni**, the subject (agent) is associated with the ergative case, while the object (patient) is associated with the absolutive case (morphologically unmarked). For monadic verbs (with a few possible exceptions), the subject is associated with the absolutive case, as in (12) below, regardless of the theta-role assigned to that argument:

(12) a. Kurdu ka wangka- mi.
child AUX speak NONPAST
The child is crying.

b. Kurdu kapi wanti- mi.
child AUX fall NONPAST
The child will fall.

Warlpiri also exhibits a number of other case arrays – e.g., absolutive-dative (with **parda-rni** 'await', **rdanpa-rni** 'accompany',...), ergative-absolutive-dative (with **yi-nyi** 'give', **punta-rni** 'take away',...), and ergative-dative (with **warri-rni** 'seek', **wapal-pangi-rni** 'dig in search of',...). The cases appearing in these arrays, sometimes referred to as 'grammatical cases', mark what might

properly be called 'direct arguments' of the verb – arguments assigned their theta-roles directly by the verb. In addition to these, Warlpiri also possesses a number of 'semantic cases' (e.g., locative, perlative, allative, elative,...) which can be viewed as introducing 'oblique arguments' whose theta-roles are assigned not by the verb, but by the semantic cases themselves (cf. Simpson, in preparation).[8] In this paper, I will limit my focus to the behavior of direct arguments of the verb.

While the associations of Warlpiri case categories with theta-roles are evidently governed by general principles, albeit ones which are as yet only partially formulable at this incipient stage in our understanding of verbal meanings, the correlations are almost certainly not perfect. In any event, I will take them to be stipulated properties of lexical items, incorporating them notationally into the LS representations of predicators by replacing the symbol *arg* with the appropriate case name (abbreviated: *erg*, *abs*, *dat*,...). Thus the LS of **panti-rni** will now appear as in (13) below:

(13) [erg_x, abs_y, panti-rni]

(The subscripts here continue to represent the theta-role assignments, though in the interests of typographical and visual simplicity, these will generally be presupposed, and suppressed in the notation, henceforth.)

I will refer to the case labels associated with arguments in LS as LINKING REGISTERS. Their function in the grammatical system being developed here corresponds to what can properly be considered a principal function of case marking in Warlpiri – namely, that of signaling the correct associations of constituents in PS to arguments in LS. In this capacity, the cases may be seen, functionally speaking, as mediating between PS constituents and thematic roles in the processing of sentences.

Leaving vague the precise nature of the 'association' involved, I propose that a nominal in PS is associated with, or 'linked' to, an argument in LS by means of the following rule:

(14) *Linking Rule*:
Co-index $\bar{N}$ in PS with *arg* in LS, provided the case category of $\bar{N}$ is identical to that of *arg* (assigning a distinct index to each *arg* in LS).

[8] Semantic cases selected by a verb have the character of 'complements' in the sense of Bresnan (1982). An argument introduced by a semantic case is necessarily overt in PS, since the semantic cases are bound morphemes (suffixes) whose appearance in PS is contingent upon that of a nominal with which it is combined by lexical processes of word formation. Thus, oblique arguments introduced by semantic cases do not behave like direct verbal arguments with respect to null anaphora. In this respect, Warlpiri differs from certain other non-configurational languages in which oblique arguments are introduced by adpositions (e.g., the inflected postpositions of Navajo) which can appear without an overt nominal object in PS.

The rule is subject to a general locality condition applying in Warlpiri and requiring that constituents related by rule be sisters in PS – here, $\bar{N}$ must be a PS sister to the verb whose LS contains the arguments with which it is linked.

Successful application of this rule defines an initial functional structure for a clause, in the sense that it correctly associates nominal expressions in PS with arguments in the LS of the verb which heads it. This I take to be an essential step in defining the logical form of a clause. The initial functional structure of sentences (1–3) may be set out, in schematic and abbreviated form, as follows:

(15) [ngarrka-ngku^i, wawirri^j, [*erg*^{i}, *abs*^{j}, panti-rni]]

Sentences (1–3) can be said to be COHERENT (cf. Kaplan and Bresnan, 1982), and to this extent at least, well-formed, since the nominal constituents in PS are properly linked to arguments in LS. By contrast, sentences (16a, b) below are INCOHERENT, and ill-formed, since they each contain an ergative nominal which cannot be linked to an argument in LS:

(16) a. *Kurdu- ngku ka yula- mi.
child ERG AUX cry NONPAST

b. *Kurdu- ngku ka-ju rdanpa-
child ERG AUX accompany
rni ngaju- ku.
NONPAST me DAT

The monadic verb of (16a) takes only an *abs* argument, and the diadic verb of (16b) takes the array *abs-dat*. In neither sentence, therefore, can the ergative nominal in PS be linked and thereby integrated into a coherent logical form. The Linking Rule and the principle of coherence jointly comprise one mechanism which guarantees correct constituency in PS, by precluding incorrect selection of nominal case categories, and thereby constraining the potential for overgeneration inherent in the highly underdetermined Warlpiri system of phrase structure.

Whatever the nature of the association established by the Linking Rule (14), it is evidently not a biunique relation in Warlpiri. The rule simply provides for the association of an appropriately case-marked $\bar{N}$ with an argument in the LS of the predicator which heads the clause of which $\bar{N}$ is an immediate constituent. There is nothing in the rule itself, or in the grammar of Warlpiri generally, which prevents the linking of more than one $\bar{N}$ in PS to a single argument in LS, as the well-formedness of sentences of the type represented by (4) above attests. Something must, of course, be said about

the interpretation of sentences exhibiting this sort of many-to-one linking, but nothing prohibits it.

Moreover, while the coherence principle requires that a case-marked $\bar{N}$ in PS be linked, the dependency is not reciprocal. Thus, a given argument in LS may or may not have a $\bar{N}$ linked to it, as the sentences of (6) show – these sentences are COMPLETE (cf. Kaplan and Bresnan, 1982).

How, then, is an LS argument to be interpreted if no $\bar{N}$ is linked to it? The answer to this question, I believe, has to do with the fundamental nature of these abstract LS entities I have referred to as 'arguments'. As the translations of the sentences of (6) suggest, unlinked LS arguments are understood in essentially the same way as are the definite pronouns in English. I would like to suggest, however, that this is more than a matter of translation and that LS arguments properly belong to the set of categories to which the terms 'pronoun' and 'anaphor' are applied, in the terminology, say, of the Binding Theory of the GB framework (Chomsky, 1981; and see below for further discussion). It is simply that LS arguments represent these categories at the level of LS, not PS. If we assume that LS arguments in Warlpiri, in and of themselves, instantiate the category *pronoun*, then the well-formedness of the sentences of (6) follows automatically, given the properties of pronouns. If this is correct, then the initial functional structure of a sentence like (6c), in which no $\bar{N}$ appears in PS, consists solely of the LS itself:

(17) [*erg*, *abs*, panti-rni].

Before moving on to the next stage in this discussion, that of suggesting what the configurationality parameter might be, it is necessary to say something about the representation of grammatical functions in LS. This will be done in a preliminary manner in the following section.

2. Grammatical Functions and the Structure of LS

A number of processes of Warlpiri grammar make reference to particular arguments in LS, discriminating among them along lines parallel to the traditional, and much discussed, apportionment of arguments to grammatical functions, subject, object, etc. I will assume here the essential correctness of the view that grammatical functions are universal (cf., Perlmutter, to appear; Bresnan, 1982; Marantz, 1981). But I will also maintain that the subject function is to be correlated with the notion 'external argument' (cf. Williams, 1981; Marantz, 1981) in a fashion to be detailed presently.

Among the processes and principles of Warlpiri grammar which make reference to grammatical functions are: person marking, control (of infinitivals), and the interpretation of the reflexive-reciprocal construction.

Person marking in Warlpiri is to be observed in clauses which contain an auxiliary (e.g., tensed verbal clauses). As mentioned earlier, the morphology of the auxiliary supplies information concerning the person and number of the subject, and of the object if the verb takes an object. Simplifying somewhat, overt person markers belong to two sets, *subj* and *obj*, appearing in that order following the auxiliary base (i.e., that part, sometimes itself phonologically null, which functions in concert with the verb to mark tense, aspect, etc.).

If an argument in LS may instantiate the category *pronoun*, then it is to be expected that it will exhibit the typically pronominal categories of person and number. But since LS is an abstract construct, arguments in LS are not themselves audible. It is reasonable, therefore, for a language of the Warlpiri type, in which LS arguments can function alone as pronouns, to possess some audible means for determining the person and number categories to which LS pronouns belong.[9] The Warlpiri person marking system fulfills this function, either by indicating pronominal categories overtly, or else by implying them by default.

Overt *subj* person markers in AUX indicate the person and number of the subject argument in LS, and overt *obj* markers indicate the person and number of the object argument. This can be illustrated with a subset of the forms (see Hale, 1973, for the full set): **-rna** 'first person singular *subj*' (glossed 1*subj*); **-ngku** 'second person singular *obj*' (2*obj*); **-pala** 'third person dual

[9] This is evidently not a necessary condition for the use of null anaphora in a particular language. Although it is common for the use of null anaphora to co-occur with a system of person marking (as it does in Warlpiri), the correlation is not perfect. Thus, for example, the Arandic languages of Central Australia lack a person-number agreement system, yet null anaphora is regularly used in connected discourse. Consider, for example, the following passage from Kaititj:

Weye wampere atye are- nhe, eylpwere- rle
meat possum I(ERG) see PAST hollow LOC

anteyanenge- warle, elepe- le- lke atye arte- nherre,
sitting COMP axe INST AFTER I(ERG) chop PAST,

eylpwere, alarre- nhe atye.
hollow kill PAST I(ERG)

I saw a possum sitting in a hollow tree: so then I chopped it, the hollow tree; and I killed it.

The final clause here lacks an overt nominal corresponding to the object argument of the verb **alarre**-'kill, hit'. The object argument (in LS) functions in this clause as a pronoun, referring back to (**weye**) **wampere** 'possum'. An overt accusative pronoun (**kwere** 'him/her/it') could have been used in this clause, serving the same function, but the use of null anaphora is equally appropriate – particularly for a third person singular direct verbal argument, as in this instance.

subj' (33*subj*); and **-jana** 'third person plural *obj*' (333*obj*):

(18) a. Ngaju ka- **rna** wangka- mi.
I *PRES 1subj speak* *NONPAST*
I am speaking.

b. Ngaju ka- **rna- ngku** parda- rni nyuntu-
I *PRES 1subj 2obj await* *NONPAST you*
ku.
DAT
I am waiting for you

c. Ngajulu- rlu ka- **rna- ngku** nyuntu nya-
I *ERG PRES 1subj 2obj you* *see*
nyi.
NONPAST
I see you.

d. Maliki- jarra- rlu ka- **pala-** jana puluku- patu
dog *DUAL ERG PRES 33subj 333obj bullock PL*
wajilipi- nyi.
chase *NONPAST*
The two dogs are chasing the several bullocks.

Person marking is strictly a matter of indicating the person and number categories of arguments in LS and, accordingly, applies regardless of whether or not an overt nominal in PS is linked in LS. Overt nominals are included in the above examples simply to reveal the case arrays associated with the verbs (*abs* in (18a), *abs-dat* in (18b), and *erg-abs* in (18c, d)).

Interpretation by default applies to the pronominal category 'third person singular' – if *subj* or *obj* is not overt in the auxiliary, then the corresponding argument in LS is understood to be third singular, as in:

(19) a. Wangka- mi ka.
speak *NONPAST PRES*
He/she/it is speaking.

b. Nya- nyi ka- rna.
see *NONPAST PRES 1subj*
I see him/her/it.

If the verb is triadic, taking the argument array *erg-abs-dat*, only two of the arguments can be represented overtly in the auxiliary – in this situation, the *subj* is construed with the *erg* argument, and the *obj* is construed with the *dat* argument. Here again, the default principle applies, so that the unconstrued *abs* argument is interpreted as third person singular:

(20) Punta- rni kapi- **rna- ngku.**
divest *NONPAST FUT 1subj 2obj*
I will take him/her/it away from you.

A minor modification of the above remarks should be made. Where a third person singular argument is *dat*, this fact is registered in the auxiliary by means of a special suffix, **-rla**. This is not strictly speaking a person marker; rather, it is an element with a variety of functions, including that of registering the presence of a third singular dative in LS:

(21) a. Yi- nyi kapi- rna- **rla.**
give NONPAST FUT 1subj **rla**
I will give it to him/her/it.

b. Parda- rni ka- rna- **rla.**
await *NONPAST PRES 1subj* **rla**
I am waiting for him/her/it.

This account of person marking is much reduced, but it is sufficient for present purposes. The essential point is this: Any formal description of Warlpiri person marking must make reference to *particular* arguments in LS. Thus, the proper construal of *subj* must make reference to the *subject* argument in LS, and the proper construal of *obj* must make reference to the *object* argument. There is a straight-forward and exceptionless correlation between the case category of an LS argument and its grammatical function, as reflected in the person marking system. The following two-step procedure will make the proper correlation: (1) identify the subject function with the *erg* argument, if there is one, otherwise with the *abs* argument; (2) identify the object function with the *dat* argument, if there is one, otherwise with the *abs* argument (if this is not already identified as the subject). An examination of the sentences of (18) above will reveal that these correlations are correct. While these correlations are exact, and while to that extent the subject and object functions can be 'defined' in terms of case, I will nonetheless assume that the grammatical functions themselves are the relevant notions in an account of Warlpiri person marking.

Grammatical functions are also relevant to the proper characterization of

control in Warlpiri (see Simpson and Bresnan, 1983). In structures of obligatory control, the subject argument of an infinitival subordinate clause is bound by an argument of the matrix clause. The subject, in this sense, corresponds precisely to the argument so identified by the person marking system – i.e., *erg* if there is one, otherwise *abs*. This is illustrated in the following sentences, in which the matrix object controls the subject argument of the infinitival clause (set off by brackets):

(22) a. Purda- nya- nyi ka- rna- ngku
aural perceive NONPAST PRES 1subj 2obj
[wangka- nja- kurra].
[*speak INF COMP*]
I hear you speaking.

b. Ngarrka- patu ka- rna- jana nya- nyi
man PL PRES 1subj 333obj see NONPAST
[wawirri panti- rninja- kurra].
[*kangaroo spear INF COMP*]
I see the several men spearing a kangaroo.

c. Marlu- ku ka- rna- rla wurruka- nyi
(*kangaroo DAT PRES 1subj rla stalk NONPAST*
[marna nga- rninja- kurra (-ku)].
[*grass eat INF COMP (DAT)*]).
'I am sneaking up on the kangaroo (while it is) eating grass.'

Not only is the controlled, or bound, argument properly identified in terms of a grammatical function, i.e., the subject, but the controller in the matrix clause is also so identified for some structures of obligatory control. Infinitivals marked with the complementizer **-kurra** are controlled by the matrix object (i.e., *dat* if there is one, as in (22c) above, *abs* otherwise, as in (22a, b)). And for many, perhaps most, speakers of Warlpiri, infinitivals marked by **-karra** are controlled by the matrix subject, as in (23) below:

(23) a. Ngarrka- ngku ka purlapa yunpa- rni
man ERG PRES corroboree sing NONPAST
[karli jarnti- rninja- karra- rlu].
[*boomerang trim INF COMP ERG*].
The man is singing a corroboree song while trimming the boomerang.

b. Karnta ka- ju wangka- mi [yarla karla
woman PRES 1obj speak NONPAST [*yam dig*
nja- karra].
INF COMP].
The woman is speaking to me while digging yams.

Notice that infinitivals in **-karra** agree in case with the controller. Infinitivals in **-kurra** may also show agreement with a *dat* controller, but this is optional (as indicated for (22c) above). For further discussion of control, and for evidence suggesting the need for further discrimination among non-subject arguments, see Simpson and Bresnan (this issue).

As a final illustration of the role of grammatical functions in Warlpiri, I will briefly describe the reflexive-reciprocal construction. Among the *obj* person markers in the auxiliary is a special form **-nyanu** which indicates that the object argument in LS is bound by the subject. Sentences in which this element appears are open to the interpretation commonly referred to as the 'reflexive' and, alternatively, if the subject in nonsingular, to a 'reciprocal' interpretation. The *obj* marker **-nyanu** (glossed *refl*) occurs in place of the ordinary *obj* person markers in all instances, except first singular and second singular imperative, where the ordinary *obj* markers are used in a reflexive function. The reflexive-reciprocal construction identifies case categories with grammatical functions in the same manner as do person marking and control – i.e., the subject is *erg*, otherwise *abs*; and the object is *dat*, otherwise *abs*. The following sentences exemplify the reflexive-reciprocal (using verbs having the following argument arrays: *erg-abs*, *abs-dat*, and *erg-abs-dat*, in that order):

(24) a. Kurdu- jarra- rlu ka-
child dual ERG PRES
pala- **nyanu** paka- rni.
33subj refl strike NONPAST
The two children are striking themselves/each other.

b. Karnta ka- **nyanu** yarnka-
woman PRES refl grab
mi (jurru- ku).
NONPAST (head DAT)
The woman is grabbing herself (by the head).

c. Ngarrka- patu- rlu ka- lu- **nyanu** kuruwarri
man PL ERG PRES 333subj refl design
yirra- rni.
put NONPAST
The men are putting designs on themselves/each other.

I believe that the processes just exemplified clearly establish the relevance of grammatical functions to the grammar of Warlpiri. The primary functions assigned to direct arguments of the verb are, quite clearly, subject and object. The examples I have used here suggest that at least one additional grammatical function must be recognized among the direct verbal arguments in LS, namely, that associated with the orphan-like *abs* member in the *erg-abs-dat* array. I will assume that this is a SECOND OBJECT function (cf. Bresnan, 1982, and elsewhere, in which a second object function, symbolized OBJ2, is recognized).

I turn now to the question of how the grammatical functions, associated with the direct arguments of verbs, are to be represented in LS. I will attempt only a partial answer to this question here, restricting my attention to the subject relation and the manner in which it might be distinguished in LS representations from non-subject arguments as a block. One possibility, of course, is to do nothing at all and to simply allow the case category disjunction '*erg* otherwise *abs*' to identify the subject relation (cf. Hale, Jeanne, and Platero, 1977). Another possibility is to represent the subject relation by means of a label (SUBJ, or so) assigned to the appropriate argument (cf. Simpson and Bresnan, this issue). But I would like to consider a third possibility, one which attributes a configurational structure to LS, in place of the 'flat linear' structure depicted heretofore (e.g., (13) above), and to be likened conceptually to the 'virtual structure' of Vergnaud and Zubizarreta (1982; Zubizarreta, 1982).

Warlpiri grammatical processes attest to a certain subject-object asymmetry among the arguments in LS. In an intuitively clear sense, the subject is 'superior' to the object; it is 'more prominent'. It is the subject which dominates in the binding relation involved in the reflexive-reciprocal construction (i.e., the subject binds the object), and it is the subject, not the object, which is accessible to binding by an external argument in structures of obligatory control (i.e., a matrix argument binds the subject of an infinitival). This suggests, to me at least, that the internal organization of LS, and a natural expression of the subject-object asymmetry, might be revealed through a study of the manner in which the Binding Theory of the GB framework (Chomsky, 1981) operates in Warlpiri, following up on the idea

put forth earlier that arguments in LS belong to the class of linguistic elements to which the terms 'pronoun' and 'anaphor' are appropriately applied.

Suppose we say that the reflexive-reciprocal *obj* marker **-nyanu** marks the object argument in LS as anaphoric (assigning it the feature [+an]), that the complementizers **-kurra** and **-karra**, among other things, mark the subject argument of an infinitival as anaphoric ([+an]), and that an argument not so marked is simply non-anaphoric (and, by convention, assigned the feature [−an]). Under this assumption, LS can be seen as containing arguments of two sorts – pronouns ([−an]), and anaphors ([+an]) – whose behavior can be expected to conform to conditions (A) and (B) of the Binding Theory (cited here as taken from Chomsky, 1981, p. 188):

(25) *Binding Theory*:
(A) An anaphor is bound in its governing category.

(B) A pronoun is free in its governing category.

Simplifying matters somewhat, suppose we say, further, that the LS of a tensed clause constitutes the governing category of each argument which it contains. This will force an anaphor to be bound within LS, and it will force a non-anaphor to be free therein. Now, assuming that an anaphor cannot c-command its antecedent (cf. Reinhart, 1976), we can account for the unidirectional character of the binding relation involved in the reflexive-reciprocal construction if we assume that LS, rather than having the flat structure depicted in (13) above, has an internal syntactic organization over which an asymmetrical c-command relation can be defined. If this is correct, then the LS representation of the Warlpiri verb **panti-rni** 'pierce, etc.' will more properly be as depicted in (26) below:

(26) $[_{v'}$ *erg*, $[_{v}$ *abs*, panti-rni$]]$

(The subscripts v' and v represent LS projections of the verbal category. Lower-case bracket labels are used to distinguish LS from PS, where the traditional upper-case labels will be used.) Taking seriously the idea that this is a true (though abstract) syntactic structure, we can say that the *erg* argument (the subject) asymmetrically c-commands the *abs* argument (the object). This will account straightforwardly for the fact that an object can be marked as anaphorically bound to the subject, but not the reverse. This, in turn, allows us to pose, and to answer, a question concerning the morphology of the person marking system in Warlpiri: Why is there no alternative morphology according to which the *subj* person marker, rather than *obj*, is replaced by a special form indicating that the subject is bound within its governing category (e.g., by the object)? The answer to this question is clear, given the

c-command asymmetry. So far as I am aware, languages which mark the reflexive and the reciprocal in the Warlpiri manner reflect morphologically the same directionality in the binding relation.[10] I suspect that this organization of LS into a subject-predicate partitioning is universal (see Marantz, 1981, for another sort of evidence in support of this partitioning; and see Bresnan, 1982, for a critical discussion of this evidence). I will assume here that the proper way to represent the subject-predicate partitioning of a verbal LS is in the form of a syntactic configuration in which the subject is immediately dominated by the LS category *v'* and sister to the remainder, which constitutes an immediate constituent *v* containing the predicate name (e.g., **panti-rni**) and the non-subject arguments, if any are selected by the verb. This representation, then, mirrors the familiar NP-VP partitioning assumed for the PS representation of clausal structure in configurational languages (cf. Chomsky, 1957, and all subsequent work). If this general picture is correct, then the subject argument in LS can be identified as the 'external' argument in the syntactic representation of LS.

The subject argument in the LS of a tensed clause cannot be marked anaphoric, of course, because it could not be bound within its governing category, and it would thereby violate condition (A) of the Binding Theory, given the conception of LS developed above. I have suggested, however, that the subject of an infinitive can be marked anaphoric. I am not prepared to pursue this idea further at this point, since to do so would require a fully developed theory of the functional structures of both simple and complex clauses in Warlpiri (i.e., a theory along the lines of that developed in Kaplan and Bresnan, 1982, and Bresnan, 1982; and for Warlpiri, that being developed by Simpson, in preparation). It is sufficient to say here that a proper account of control, under the assumption that the controlled subject is an anaphor, will require a characterization of the 'governing category' which will allow

[10] The Warlpiri reflexive-reciprocal construction is to be distinguished from another type, common in Australia, according to which the verb is detransitivized (cf. French, as described in Grimshaw, 1982), thereby reducing the subject-object pair of arguments to a single argument (bearing the subject relation). In Warlpiri, the bound object in the reflexive-reciprocal construction is clearly present as an argument in LS, since it may, independently of the subject, have a nominal open structure predicated of it (see (34) below), and it can control the subject of an infinitival, in the manner of a matrix object (cf. Simpson, in preparation).

In the reflexive-reciprocal constructions of true ergative languages, it is presumably the patient (absolutive, and therefore *apparent* object) which binds the agent (ergative, and therefore *apparent* subject). But this follows from the ergative hypothesis of Marantz (1981), according to which the patient is assigned the subject function, while the agent is assigned the object function – hence, in an ergative language, as in an accusative language, the subject binds the object in the reflexive-reciprocal.

the subject of an infinitival (but not the object thereof) to be bound by a matrix argument.[11]

With this background, it is possible now to turn to a consideration of the primary concern of this paper, namely, the position of Warlpiri in a typology defined by a theory of grammar.

3. The Configurationality Parameter

If the structure of LS is universally configurational (rather than flat), then all languages are configurational at that level of linguistic representation. But it is evident that some languages mirror LS configurationality in PS, while others do not. Perhaps, then, the place to look for the fundamental difference between configurational and nonconfigurational languages, as these labels are commonly used, is in the relation between LS and PS – i.e., specifically, in the manner in which particular languages instantiate the principle according to which properties of lexical items are projected onto syntax.

The possibility I would like to suggest here is that configurationality is to be stated in terms of the projection principle as it is conceived in the GB framework. I cite here an initial formulation (from Chomsky, 1981, p. 29):

(27) *The Projection Principle*:
Representations at each syntactic level (i.e., LF, and D- and S-structure) are projected from the lexicon, in that they observe the subcategorization properties of lexical items.

The subcategorization properties of a lexical item, say a verb, include, for example, the argument array which the verb selects. In what follows, I will restrict my discussion to 'subcategorization properties' in the narrow sense in which a verb may be said to 'select' a particular array of grammatical arguments – i.e., in effect, those arguments to which the verb assigns a theta-role directly (but also including the subject argument, to which a verb may or may not assign a theta-role, see below).

With this in mind, I restate the projection principle (along the lines of Chomsky, 1981, p. 38):

(27') *The Projection Principle (restricted)*:
If *verb* selects *arg* at L_i, then *verb* selects *arg* at L_j (where L_i, L_j range over the 'levels' LF, D-structure, S-structure in the syntactic representations of clauses).

[11] The proper definition of the domain relevant to the Binding Theory will probably make reference to the notion 'accessible subject' (Chomsky, 1981, p. 211).

In essence, the intent here is to prevent any syntactic rule (e.g., a movement rule) from altering the initial (i.e., lexical) assignment of theta-roles to arguments.[12]

Before continuing, I must attempt to articulate a somewhat more precise conception of what it means for a verb to 'select' an argument, in the sense of assigning a theta-role to it. Theta-roles are assigned not just to arguments, but to arguments bearing a particular grammatical function. In the case of the subject, at least, the grammatical function is defined in terms of structural position. In Warlpiri, for example, the agent role of the verb **panti-rni** is assigned to the argument immediately dominated by v' in LS, i.e., to the argument which also happens to be assigned the ergative case; the patient role, on the other hand, is assigned to the argument immediately dominated by v in LS, i.e., to the absolutive. (I leave unanswered here the natural question as to what the structurally defined distinction between the two objects of a triadic verb might be, if any; but see Stowell (1981) for a discussion of the analogous problem, the dative construction, in the PS syntax of a configurational language.) This conception of theta-role assignment, consistent with the idea that theta-roles are assigned to structural 'positions' (cf. Chomsky (1981) at several points in the text), allows for the possibility that a particular argument position, say the subject, may not be assigned a theta-role by a given verb. A syntactic rule (e.g., passive or raising) moving an argument into such a position would not violate the projection principle, since the moved argument would not thereby acquire a new (e.g., an additional) theta-role.

The configurationality parameter might now be stated as follows:

(28) *The Configurationality Parameter* (CP):
  (a) In configurational languages, the projection principle holds of the pair (LS, PS).
  (b) In non-configurational languages, the projection principle holds of LS alone.

The intent of the CP is to characterize a fundamental difference among languages in the manner in which expressions in PS are related to argument positions in LS – that is, a fundamental difference in the manner in which the initial functional structure is determined. For configurational languages, the projection principle can be viewed as defining this relation as one of *identity*, so that for each argument in LS there must be a corresponding

[12] This does not, of course, preclude the possibility of a *lexical* rule (e.g., the passive, say) relating one verb form to another such that the resulting distinction resides in a difference in theta-role assignment.

constituent in PS. And a 'strict' interpretation of the CP with respect to configurational languages might further require that the configurational definition of argument positions in LS be mirrored precisely in PS, forcing the phrasal syntax of configurational languages to exhibit the familiar NP-VP partitioning of clauses. Although this is almost certainly too strict an interpretation, I will assume it to be the correct one for 'canonical' configurational languages, like English or Chinese (cf., Huang, 1982).[13]

In a canonical configurational language, then, the initial functional structure of a well-formed clause containing a diadic verb, analogous, say, to Warlpiri **panti-rni**, might properly be represented as a structured system of equations, as depicted in (29) below:

(29) $[_{v'=S}\ arg_x = \text{NP}, [_{v=VP}\ arg_y = \text{NP}, verb = \text{V}]]$

The PS/LS argument relations here are to be contrasted with those in the initial functional structure depicted in (15) above, where the nominal expressions ($\bar{\text{N}}$) in PS are merely co-indexed with arguments in LS.

The CP, in short, determines a tight connection between LS and PS in configurational languages. But for non-configurational languages, by contrast, the CP does not determine any connection at all between LS and PS (leaving that to other principles of grammar). From this, the observed non-configurational properties of Warlpiri follow, assuming Warlpiri to be non-configurational. That is to say, because of the manner in which the projection principle holds in non-configurational languages, the system of phrase structure rules and the process of lexical insertion are allowed to apply in what appears to be a highly unconstrained manner. But in the conception of configurationality being considered here, this is not directly a function of phrase structure and lexical insertion themselves; rather, it is a function of the position of Warlpiri in regard to the CP and, consequently, of the manner in which the projection principle holds in Warlpiri. Thus, in the absence of independent principles of grammar which might impose limitations to the contrary, the relation between LS arguments and PS nominal expressions is neither bi-unique nor structurally isomorphic – hence the possibility of null anaphora (in the sense used here), discontinuous expressions, and free word order.

I believe that certain other characteristics of Warlpiri can be seen to follow from this conception of configurationality. Consider, for example, the fact

[13] A number of VSO languages have all the characteristics of configurational languages (e.g., Modern Irish, Classical Arabic). I assume, following a suggestion of Abdelkader Fassi Fehri (p.c.), that in these languages the subject-object asymmetry otherwise expressed by asymmetrical c-command is "translated" into a precedence asymmetry. This may be the case generally for "flat" PS structures (see section 5 below).

that Warlpiri lacks transformational rules of the type referred to as NP-movement (e.g., the passive and raising). Suppose NP-movement is to be seen as movement from a theta-position to a non-theta-position (as in Chomsky, 1981) – where a theta-position is an argument position to which a theta-role is assigned, and a non-theta-position is an argument position to which no theta-role is assigned (by a particular verb). It will follow, then, that Warlpiri, being non-configurational, cannot have NP-movement rules, since the notion 'argument position' applies only to LS – there are, strictly speaking, no argument positions in PS, where the category NP (or $\bar{N}$) is instantiated. And, in general, in non-configurational languages, rules like the passive, where they exist, are necessarily lexical rules, not rules of syntax operating in PS.

In configurational languages, on the other hand, rules of NP-movement can, in principle, exist, since there the notion 'argument position' is the LS/PS pair *arg* = NP. Suppose that the passive form of a verb, for example, is to be characterized as one in which no theta-role is assigned to subject position and in which the object position is assigned a theta-role as in the corresponding active form. Movement of an NP from object position to subject position in PS will necessarily entail movement from a theta-position to a non-theta-position, by virtue of the *arg* = NP identity determined by the projection principle in configurational languages. This presupposes, of course, that the subject argument in the initial structure of a passive, although it is not assigned a theta-role, is nonetheless a true argument position in the configurational sense of a LS/PS pair *arg* = NP. This is not unreasonable, since it follows without undue strain from the overall logic of the system. First, assuming the subject-predicate partitioning to be universal, i.e., that a verb necessarily "selects" a subject argument, there must be a subject argument in the LS of a passive (even if it is not assigned a theta-role).[14] Second, if, as I have assumed, the projection principle, as it applies to configurational languages, equates LS arguments with constituents (e.g., NPs) in PS, then the PS of a clause must contain a constituent identified with the subject argument, whether or not a theta-role is assigned to it by the verb.

For configurational languages, the projection principle forces the appearance in PS of certain categories of constituents not needed, and evidently not used, in non-configurational languages. One such category is the

[14] This goes counter to the proposal in Williams (1981) according to which an English verb like *seem* has no external argument. In the conception of LS which I assume here, *seem* must have a subject argument position in LS – to which no theta-role is assigned, to be sure. This forces the appearance of an NP in PS structure (and, in English, this is either filled by a pleonastic element or by a raised NP). This analysis is therefore more in tune with Bresnan's proposal that *seem* selects a "non-thematic" subject (Bresnan, 1982, p. 421).

base-generated empty element [$_{NP}$e], which is presumably involved in the passive construction – it occupies the subject position, to which the object NP moves in deriving the S-structure of the passive, and it is not assigned a theta-role by the verb. Another such category, presumably, is the base-generated empty element, symbolized PRO, which is involved in control – here again, the empty category occupies the subject position, but in this case it is assigned a theta-role, and the requirement that it be empty, or non-overt, is due to independent factors (e.g., the case filter, as in Chomsky (1981) and elsewhere). It seems to me reasonable to suggest that it is a general principle of grammar that the appearance of such categories in PS (at the initial, or D-structure, representations of clauses) must be motivated by the projection principle. If they are not so motivated, they may not appear. It will then follow that such categories are excluded from initial PS representations in non-configurational languages. If, as seems appropriate, the class of categories at issue here is extended to embrace not only empty categories, but expletive (or pleonastic) elements as well, then another non-configurational property of Warlpiri follows from the CP – namely, the lack of PS expletives in that language.

The position of Warlpiri in relation to the CP is also reflected in the manner in which case marking functions in that language, by contrast to the manner in which it functions in canonical configurational languages. Let us suppose that cases are assigned by a verb to the argument positions it selects (approximately in the manner assumed in the GB framework). But let us suppose further that case, in the sense of a morphological category assigned to lexical items, is a lexical matter, so that a nominal is inserted into PS with its case already determined. A general condition on the association of a PS nominal with an argument in the verbal LS is that the 'abstract' case (i.e., that assigned in LS) must agree with the morphological case (i.e., that assigned to a nominal in the lexicon). This condition can be regarded as a generalization of the Linking Rule (14). It will then follow that case, in a canonical configurational language, will appear to be assigned to positions in PS, by virtue of the LS/PS identification determined by the projection principle. In a non-configurational language, however, this will not be so. Since the projection principle holds only of LS, there will be no necessary correlation between the morphological case of a nominal and its position in PS. A given language, whether configurational or non-configurational, may or may not utilize morphological case to encode the grammatical functions of nominals in PS. A language which does not utilize morphological case simply fails to invoke the generalized Linking Rule; and case in such a language is entirely abstract.

The projection principle, as it is enacted in configurational languages,

determines a fixed and uniform relation between noun phrases occupying specific positions in PS and arguments occupying the corresponding positions in LS. I have proposed that the relation should properly be viewed as one of identity. Thus, it is appropriate to use the term 'argument' in reference to noun phrases in PS, since they enter into LS/PS equations of the form *arg* = NP. In non-configurational languages, however, the term 'argument' is appropriate only in reference to the *arg* terms in LS, in the initial functional structures of clauses at least. What, then, is the proper characterization of nominal expressions in the PS representations of clauses in non-configurational languages? Is there any sense in which they also can be referred to as 'arguments'? I will consider this question, in a preliminary fashion, in the following section.

4. On the Interpretation of PS Nominal Expressions in Warlpiri

So far, I have provided only the most meager of interpretations for nominal expressions appearing in the PS representations of Warlpiri clauses. The Linking Rule simply co-indexes $\bar{N}$s in PS with arguments in LS to define what I have called the "initial functional structure" of clauses. In fact, one could go even farther than this in the direction of descriptive parsimony by noting that, in Warlpiri at least, the Linking Rule itself is entirely redundant, since it adds no information not already present in the case marking. In an interesting study of agreement in Warlpiri, Carroll (1977) has suggested that a mechanism of this impoverished sort is essentially all that is needed, for an account of agreement at least. In this view, overt nominal expressions simply provide information defining the values of the variables standing for the direct arguments selected by a verb, in a manner not unlike that in which the person markers in the auxiliary supply such information (see above). A failure of agreement is simply the situation in which conflicting values are attributed to a single argument, thereby violating the general linguistic principle of consistency (cf. Bresnan, 1982; Kaplan and Bresnan, 1982). Thus, for example, sentence (30) below would, correctly, be defined as ill-formed by virtue of the inconsistency embodied in it:

(30) *Nyuntu ka- rna wangka- mi.
you PRES 1subj speak NONPAST

Here, the overt absolutive $\bar{N}$ **nyuntu** indicates that the subject is second person singular, while the *subj* person marker in the auxiliary, i.e., **-rna**, indicates that it is first person singular. This, then, is an inconsistency in the category of person. Similarly, sentence (31) below exemplifies an inconsistency

in the category of number:

(31) *Kurdu- jarra ka- lu wangka- mi.
child DUAL PRES 333subj speak NONPAST

In this instance, the overt absolutive **kurdu-jarra** indicates that the subject is dual in number, while the person marker **-lu** indicates that it is plural (i.e., more than two).

While I believe that this is essentially the correct way to account for agreement in Warlpiri, I do not believe that that the mere 'association' of $\bar{N}$s in PS with arguments in LS is a sufficient linguistic representation of Warlpiri clauses. While it might be said that the Linking Rule (whether this involves actual co-indexing or is, in effect, instantiated automatically by virtue of the case system) integrates PS nominals into an initial functional structure, it cannot, of course, discriminate among various interpretations which PS nominal expressions in fact receive, interpretations whose discrimination, I think, is properly the business of an adequate linguistic description. In fact, I think that the interpretation of PS structures is a major task for future research in Warlpiri linguistics, being by far the least understood aspect of the grammar (for some discussion and for some indication of the problems involved see Hale, 1981a, b; Nash, 1980; van Riemsdijk, 1981; and Simpson, in preparation). Be this as it may, I will assume that the initial functional structure of a clause merely indicates the correct grammatical associations and that it must be enriched through the operation of further principles of functional interpretation. I will not be able here to carry this program out in full. In fact, I will be able only to suggest an account of what I take to be a fundamental distinction among nominal readings – i.e., the distinction between the ARGUMENTAL and the PREDICATIVE uses of nominal expressions.[15] I will attempt, however, to preserve some of the parsimonious character of a linguistic description lacking special rules of functional interpretation.

Consider the following sentence:

(32) Ngarrka ka- rna nya- nyi.
man PRES 1subj see NONPAST

[15] I must say that I enter into this discussion with some trepidation. My claim that the argumental and predicative uses of PS nominal expressions are real and must be distinguished rests on my own intuitions about Warlpiri, acquired after a number of years of contact with Warlpiri and many hours of listening to oral essays on ethnoscientific matters in which, it seems to me, these richly varied nominal usages are evident in great abundance. However, the truth of this matter will come, I am certain, from the work of the Warlpiri-speaking language scholars who are working now in various capacities for the bilingual education programs at Yuendumu and other Warlpiri centers. In short, the matter will be settled, in reality, only when native speakers' intuitions are brought to bear on it.

The PS nominal expression in this sentence, **ngarrka** 'man, adult male', being absolutive is linked to the object argument in LS. It is open to two interpretations. On one, it functions, loosely speaking, as a 'referential expression', definite or indefinite, referring to some entity which has the property of being an adult male. In this use, **ngarrka** corresponds more or less exactly to the use of its English counterparts ('the man, a man') in their function as arguments in the appropriate translations:

(32′) I see the/a man.

I will refer to this as the ARGUMENTAL interpretation of the nominal. In a second interpretation of (32), **ngarrka** is simply predicated of the LS argument to which it is linked. In this case, only the LS argument itself can be said to refer to an entity, in the sense in which a definite pronoun can be said to have reference. In this use, **ngarrka** corresponds in its interpretation to a variety of dependent predicative expressions in English, including those appearing in parentheses in the following two rough translations:

(32″) I see him (as a man).
I see him (and he is a man).

I will refer to this as the PREDICATIVE interpretation.

Where the meaning of a nominal permits them, both the argumental and the predicative readings are possible. And the predicative reading is not rare in any sense. The predicative reading for (32) is perfectly natural in a variety of situations, including, for example, that in which the speaker sees a male person (formerly "a boy") after his initiation (now 'a man', in the proper sense of **ngarrka** as applied to humans). The predicative reading of PS nominals in general is somewhat enhanced by the use with them of the temporal enclitics **-lku** 'as of *t*' and **-wiyi** 'before *t*' (where *t* is some temporal reference point). This usage is exemplified in the following sentences:

(33) a. Nya- nyi ka- rna- ngku ngarrka- lku.
see NONPAST PRES 1subj 2obj man AFTER
I see you (as) a man now (i.e., as fully grown, or initiated).

b. Yipilanji kala nga- rnu kurdu- ngku-
witchitty PASTCUSTOM eat PAST child ERG
wiyi.
BEFORE.
He/she used to eat witchitty grubs before as a child (i.e., before, when he/she was a child).

Here, the temporal enclitics can be understood as fixing the relative time (i.e., 'as of *t*', 'before *t*') at which the secondary, or dependent, predication ('being a man', 'being a child') holds. I assume also that it is the predicative reading, rather than the argumental reading, that is involved when a nominal (other than a pronoun) is linked to an argument whose referent is fully determined in some independent manner – e.g., when the person category of the associated LS argument is other than third person, as in (33a) above, where **ngarrka** is predicated of a second person singular object, or when the associated argument is anaphoric, as in the following:

(34) Puyukuyuku- puru, kula- lpa- rlipa- nyanu
fog WHILE, NEG IMPERF 122subj refl
yapa nya- ngkarla.
person see IRREALIS
We (plural inclusive) cannot see one another as persons (i.e., our shapes or figures) when it is foggy.

Here, the nominal **yapa** 'person, human' is absolutive, and therefore linked to the object which, in turn, being anaphoric (as indicated by the *obj* person marker **-nyanu**), is bound by the subject.

The predicative use of PS nominal constituents is extremely important in Warlpiri, shouldering as it does a large portion of the expressive burden typically assumed, in languages like English, by adverbial constructions and dependent clauses, as well as by a much more narrowly constrained process of predication (cf. Williams, 1980). The full range of the uses of this sort of secondary, or dependent, predication in Warlpiri is still very much a matter of investigation, and it will almost certainly continue, for some time to come, to be one of the most important foci of interest in the study of Warlpiri grammar (cf. Simpson, in preparation). I will not attempt here to deal with the full range of uses, my present purpose being merely to contrast the predicative and argumental functions of PS nominal expressions.

Verbs (V) and nominals (N) constitute the major morphologically defined parts of speech in Warlpiri. It is a striking property of Warlpiri, and of a great many other Australian languages, that the nominal category covers a range of semantic functions which are typically apportioned to a variety of parts of speech in other languages. Speaking loosely, Warlpiri verbs typically denote actions, stances, or processes, while the class of nominals subsumes the rest, including functions often assigned to verbs in other languages. It is not surprising, therefore, that within this large nominal category, certain members are more likely than not to be used in an argumental function and, conversely, certain members are more likely than not to be used

in the predicative function. Using very rough semantic function labels, nominals may be arrayed in the following partial classification, reflecting an approximate continuum from (a), most likely (some exclusively) argumental, to (f), most likely (perhaps exclusively) predicative:

(35) a. PRONOUNS AND DETERMINERS. E.g., **ngaju** 'first person singular', **ngalipa** 'first person plural inclusive', **yangka** 'the, that (evocative, i.e., referent assumed by speaker to be known to addressee)', **nyampu** 'this', **yalumpu** 'that (mid-distal)', etc.[16]

b. NAMES. E.g., **Japanangka, Japangardi, Jupurrula,** and in general the subsection terms in their use as names rather than attributives.

c. SUBSTANTIVES. E.g., **karnta** 'woman', **ngarrka** 'man, adult male', **kurdu** 'child', **maliki** 'dog', **kuyu** 'meat, meated animal', etc.

d. ATTRIBUTIVES AND QUANTIFIERS. E.g., **wiri** 'big', **wita** 'small', **ngurrju** 'good', **kuluparnta** 'fierce, dangerous, bellicose', **jinta** 'one', **jirrama** 'two', **panu** 'many', etc.

e. MENTAL AND PSYCHOLOGICAL STATIVES. E.g., **pina** 'knowing, knowledgeable', **ngurrpa** 'not knowing, ignorant', **ngampurrpa** 'wanting, desirous', **jukuru** 'not wanting, apathetic', etc.

f. LOCATIVES AND DIRECTIONALS. E.g., **kulkurru** 'in the middle', **yatijarra** 'north, northward', **kaninjarra** 'inside, underneath, inward, downward', etc.

This is a very rough classification of nominals in terms of their semantic functions, and within each group a more sensitive subclassification can no doubt be made. Generally speaking, however, substantives and attributives (i.e., those placed mid-way in the array readily function either as arguments or as predicates, though their position in the 'continuum' indicates what I take to be the most likely function in a given instance, other things being equal.

Just as the predicative use of a nominal can be suggested by certain properties of the sentence in which it appears, so also can the argumental use be suggested, or even forced, in one way or another. Thus, for example,

[16] At the extremes in this classification, there are morphological characteristics which set certain nominals apart from other members of the category. Thus, for example, pronouns form their genitives with the suffix **-nyangu**, rather than with **-ku-rlangu**, the ending used on all other nominals. And at the predicative end of the spectrum, the directionals (N, E, S, W, up, down) exhibit a rich variety of special inflected forms (cf. Laughren, 1978).

the presence of the evocative determiner **yangka** in the absolutive nominal expression in (36) below demands the interpretation according to which the expression as a whole assumes the argumental function:[17]

(36) Wita yangka kapi- rna ma- ni.
small that *FUT 1subj take NONPAST*

I'm going to get that small one (i.e., whose identity the speaker assumes to be known to the addressee).

Assuming the contrast between argumental and predicative interpretations to be relatively clear, I would like now to turn to the question of how they are to be represented in the functional structures of Warlpiri sentences.

Suppose that Warlpiri nominals, like verbs, have lexical structures, i.e., LS representations, and further that each nominal LS has at least one argument, the 'subject' (of which the property denoted by the nominal is predicated). And suppose also that a nominal LS may be either an 'open' or a 'closed' structure (cf. Dik, 1980, 1982), the likelihood of a particular nominal being one or the other corresponding to its position in the array set out at (35). An open LS is one whose subject argument is not evaluated and, accordingly, must be bound by an external argument (as must the subject of an infinitival under control, for example). This gives rise straightforwardly to the predicative use of nominals. We can assume, simply, that an open nominal LS is interpreted (i.e., integrated into the functional structure of a sentence) by binding its subject to the verbal argument with which the nominal is associated (i.e., with which it is associated by the Linking Rule). In this sense, the subject of an open nominal LS is anaphoric, just as the subject of a Warlpiri infinitival clause is said to be anaphoric.

If this is correct, then it seems to me that virtually nothing additional has to be said in the grammar of Warlpiri to account for the predicative interpretation of PS nominals. For the most part, general linguistic principles operate to give the correct results. The principle of COHERENCE will require that each PS nominal be interpreted, and the principle of COMPLETENESS will require that the open (subject) *arg* in a nominal LS be bound. Finally, the Linking Rule can be understood as determining which matrix argument may be the binder – i.e., it will be that argument to which the nominal LS is associated by virtue of case congruence. If the Linking Rule is merely a mechanism for guarantee-

[17] In addition, certain derivational endings form nominals which demand one interpretation or the other. E.G., the argumental formative **-pirdinypa** 'restrictive' and the predicative formative **-panu** 'attributive'. And 'goal', or 'result' predicates are formed with the translative suffix **-karda**, which has the rather special property that it cannot itself be followed by other nominal inflection (cf. Simpson, in preparation).

ing case agreement between an argument and an associated predicative nominal, then it might be possible to reduce the Linking Rule to the general linguistic principle of CONSISTENCY. This would clearly be the desired state of affairs, since the interpretation of an open nominal LS would then follow entirely from general principles.

There is a technical detail that should perhaps be mentioned at this point. If we assume that an anaphoric argument must be c-commanded by its antecedent, then a nominal LS must be integrated into the functional structure in a particular way. Thus, for example, on the predicative reading of **ngarrka** in sentence (32) above, the nominal LS (i.e., roughly $[_{n'}\ arg[_{n}$ ngarrka]]) must be c-commanded by the object of the matrix verb, as in the following highly abbreviated depiction of the assumed functional structure (in which the double-headed arrow indicates the binding relation):

(37) $[_{v'}\ erg, [_{v}\ \overset{\downarrow}{abs}, \text{nya-nyi}, [_{n'}\ \overset{\downarrow}{arg}, [_{n}\ \text{ngarrka}]]]]$

There is, however, no serious problem here. In a sense, the desired functional structure follows from the CP and from the position of Warlpiri with respect to it. Since the projection principle stipulates no relation whatsoever between the PS nominal and the verbal LS, we can assume that the nominal is free to take any position at all. And among the positions it may occupy is one which is internal to *v*, where its subject will be c-commanded by the matrix verbal argument which binds it, as in the well-formed functional structure (37).

I turn now to the argumental interpretation of nominals, which, it seems reasonable to suggest, involves the 'closed' nominal LS. A closed LS is presumably one in which the subject argument is bound by a definite or indefinite operator (giving **ngarrka**, for example, interpretations corresponding to the English expressions 'the man' and 'a man', respectively). If this is correct, then it is clear that predication is not the appropriate mechanism for integrating a closed nominal LS into the functional structure representation of a clause – this follows, since the subject of the nominal is not anaphoric and therefore not available for binding by an external argument. How, then, is a closed nominal LS to be interpreted?

It seems to me that the appropriate mechanism here is Chomsky's rule Assume a GF (Chomsky, 1981, pp. 129–130) – i.e., let the nominal assume some grammatical function. For the purposes of the present discussion, I will interpret this to mean that a closed nominal LS becomes identified with an argument in the matrix verbal LS. In effect, the rule Assume a GF establishes an equation of the form $arg = \text{NP}$, just as does the projection

principle in a configurational language. In their argumental interpretations, then, PS nominals can properly be referred to as arguments.

On the argumental reading of **ngarrka** (whose closed LS will be abbreviated simply $[_{n'}$ ngarrka]), the functional structure of sentence (32) will be as depicted in (38) below:

(38) $[_{v'}\ erg, [_{v}\ abs = [_{n'}\ \text{ngarrka}], \text{nya-nyi}]]$

Here, application of the rule Assume a GF has, in effect, converted a pronominal argument in the verbal LS into an 'R-expression', in the sense of the Binding Theory (Chomsky, 1981, pp. 101, 188).

If we assume that closed nominal structures must assume a grammatical function, the correct interpretations will follow from general principles – COHERENCE will force the rule Assume a GF to apply, and CONSISTENCY will determine which grammatical function a nominal will assume (i.e., it must become identified with that verbal argument with which it agrees in case).[18]

Although I have not worked this system out in detail, I hope to have pointed the direction toward a conception of Warlpiri, and of non-configurational grammar generally, according to which nothing special has to be said about the interpretation of PS nominal expressions, in the 'core' or 'unmarked' case, at least. The basic idea is this: (a) the type of expression, i.e., open or closed, will determine whether a nominal is to be interpreted argumentally or predicatively; (b) the general principles of coherence and completeness will force a PS nominal to be interpreted in one way or another; and (c) the principle of consistency will exclude certain interpretations while allowing others. If the program to reduce the mechanisms of grammar to this extent succeeds, then it is conceivable that the essential difference between configurational and non-configurational languages resides indeed in the CP, as articulated in (28) above. Moreover, it is at least conceivable that the configurational type constitutes the marked member of the opposition.

Linguistic matters are never simple, however; languages typically override the boundaries of 'core grammar', and much work remains to be done to determine what must, and what must not, be stipulated in the grammar of a given language. In the case of Warlpiri, for example, I have not really addressed the problem of interpreting discontinuous expressions. The position of Warlpiri with respect to the CP *permits* discontinuous expressions, but it

[18] A closed nominal structure can, of course, be used predicatively (as in English: 'I am the doctor you were asking about.'). In Warlpiri, I assume that this sort of predication is made possible by a rule of 'Predicate Formation', which adds an external argument position to a closed nominal LS. Part-whole predication (cf. Hale, 1981b, and (41a) below) and Instrumental Predication (cf. (41b) below) are probably instances of the predicative use of closed structures.

may be the case that special mechanisms must be attributed to the grammar in order to interpret them. Thus, for instance, if it is true, as I assume it to be, that (4) above receives an interpretations synonymous with (5), then there must be some means of deriving the required interpretation. It is relatively clear what the correct interpretation is, in this case. The determiner **yalumpu** 'that (mid-distal)' functions as a sort of definite operator combining with the LS of **wawirri** 'kangaroo' to form an argumental expression corresponding in function to the unit constituent **wawirri yalumpu** 'that kangaroo'. In the best of all possible worlds, it would be the case that the mechanisms functioning to interpret the unit constituent **wawirri yalumpu** in (5) carry over without modification to the interpretation of the discontinuous expression **wawirri ... yalumpu** in (4), and recent within the Lexical Functional Grammar framework suggests that this might well be the case (Simpson, in preparation). It could turn out, however, that Warlpiri needs special rules of 'merger' to assemble the parts of discontinuous expressions in defining the functional structures of sentences (cf. Nash, 1980; Hale, 1981a). The same must, of course, be said of discontinuous expressions in which one part functions as a modifier. I take it to be a fact of Warlpiri that a sentence like (39) below is open to at least two interpretations:

(39) Maliki- rli Ø– ji yarlku- rnu wiri- ngki.
dog ERG PERF 1obj bite PAST big ERG
The/a big dog bit me.
The/a dog bit me and it was big.

(The symbol Ø in the Warlpiri represents the phonologically null auxiliary base associated with perfective aspect.) On one interpretation, the expression **wiri-ngki** (big-ERG) is taken as a modifier of **maliki-rli** (dog-ERG), forming with it a unit expression corresponding to the single constituent **maliki wiri-ngki** in the following sentence:

(40) Maliki wiri- ngki Ø- ji yalku- rnu.
dog big ERG PERF 1obj bite PAST
The/a big dog bit me.

This is the 'merged' interpretation. That the subject is a single PS constituent in (40) is shown not only by the position of the auxiliary but also by the manner in which the case category of the expression is marked (i.e., the ergative suffix appears on the final subconstituent only). On another interpretation of (39), **wiri-ngki** is simply predicated of **maliki-rli**. This interpretation is no problem, of course, since **maliki-rli** can be taken argumentally (i.e., as a closed structure assuming the subject function) while

wiri-ngki is taken predicatively (i.e., as an open structure whose subject is bound by the matrix subject). But if I am correct in believing that sentence (39) is open to the merged interpretation as well, then some mechanism must exist to provide that interpretation, here and for other sentences of the same sort. Again, it is to be hoped that the mechanisms applying in the interpretation of modifiers in unit PS constituents will carry over, without complication, to the synonymous discontinuous expressions. Perhaps an adequate general theory of grammar will define some principle which forces the merger of discontinuous expressions, thereby rendering superfluous any language specific rule of merger.

Another manner in which Warlpiri might be said to exceed the boundaries of core grammar can be appreciated by considering the range of semantic functions assigned to PS nominals. The interpretations discussed so far are semantically rather uncomplicated – they are the 'ordinary' interpretations, according to which a nominal expression quite straightforwardly denotes an entity referred to by an argument or else denotes a property predicated of an argument. But there are other, somewhat more complicated, interpretations which an adequate description of Warlpiri must give an account of. These include, among others, (a) the part-whole relation, (b) the instrumental relation, (c) split antecedent predication, and (d) the subset relation. These are exemplified in the following:

(41) a. Rdaka kapi- rna- rla yarnka- mi jurru-
hand FUT 1subj rla grab NONPAST head
ku.
DAT
I will grab it by the head with my hand.

b. Wawirri kapi- rna panti- rni kurlarda-
kangaroo FUT 1subj spear NONPAST spear
rlu.
ERG
I will spear the kangaroo with a spear.

c. Maliki- rli ka wawirri wajilipi- nyi mata-
dog ERG PRES kangaroo chase NONPAST tired
kariyinyanu.
RECIP
The dog is chasing the kangaroo, and they are tired.

d. Japanangka- jarra ka- rlijarra wirlinyi
Japanangka DUAL PRES 11subj hunting
ya- ni.
go NONPAST
Japanangka and I are going hunting.

In (41a), the overt nominals **rdaka** 'hand' and **jurru-ku** 'head' are, by virtue of case congruence, and therefore the Linking Rule, associated with the subject (*abs*) and object (*dat*) arguments of the verb, respectively. I have proposed elsewhere (Hale, 1981b) that the basic mechanism involved here is predication, extended by a special rule of interpretation defining the precise semantic relation between the PS nominal and the associated argument in LS – i.e., the nominal denotes the 'relevant part' of the entity referred to by the associated verbal argument, where the notion 'relevant' is to be understood in a manner consistent with the meaning of the verb and the roles it assigns to its arguments. In this instance, the hand is the part used to grab hold of the object, and the head is the part of the object which is seized. In an analogous fashion (following an implicit suggestion in Nash, 1980), I assume that the instrumental relation illustrated in (41b) is basically by predication, with a rule of interpretation defining the relation more precisely – i.e., the entity denoted by the subject 'makes use of' the entity denoted by the ergative nominal to produce the effect denoted by the verb. This rule of interpretation is applicable only to ergative nominals. Sentence (41c) illustrates a construction which, to my knowledge, is peculiar to Warlpiri, though it probably exists in other Australian languages as well. The nominal expression **mata-kariyinyanu**, formed by an entirely productive process of word formation, is associated, in this instance, with the object (*abs*) argument of the verb. The force of this expression, however, is to predicate the attribute denoted by the nominal root (here, **mata** 'tired') not only of the object, but of the subject as well (as indicated in the rough English translation). Finally, sentence (41d) exemplifies a usage which is extremely common in Australia, often employed to express the comitative (cf. Hale, 1966). The sentence receives an interpretation according to which the nominal associated with the subject (i.e., **japanangka-jarra**) denotes a set, whose cardinality is reflected in the number category embodied in inflection (dual, in this instance, hence two) and of which a subset, proper or improper, is denoted by the nominal base (**japanangka**, in this instance). Thus, this sentence may be used by a speaker who does not belong to the **japanangka** subsection (as suggested by the English translation given above).

It should be evident from this brief and informal discussion that the interpretation of PS nominal expressions is a major part of Warlpiri grammar. It occupies a more prominent position in Warlpiri grammar than it does in the grammars of many other putatively non-configurational languages. Thus, while the position of Warlpiri in relation to the CP clearly permits liberal and richly varied use of nominals in secondary predication, this feature of Warlpiri certainly does not follow from the CP in the strict sense of being a necessary property of non-configurational languages. Rather, an independent parameter of linguistic variation seems to be involved here – e.g., the ability or inability of nominals to be used freely as open structures, a property which may, in turn, correlate with the manner in which semantic functions are apportioned to the parts of speech in a given language (as suggested by Simpson, in preparation). More often than not, evidently, nominals function as closed structures unless specifically marked, morphologically or syntactically, as predicative. Japanese, for example, sometimes held to be non-configurational (cf. Farmer, 1980; Hale, 1980; Chomsky, 1981), does not exhibit the predicative use of nominals in the Warlpiri sense. In that language, case marked nominals are regularly interpreted argumentally, which suggests that they are consistently closed structures and, therefore, necessarily subject to the rule Assign a GF.

In general, it should be pointed out, superficial non-configurational characteristics, such as free word order and extensive use of null anaphora, are genuine properties of non-configurational languages only in the sense that they are permitted by the manner in which the projection principle holds in those languages. Independent factors may operate in a given language, however, to restrict what would otherwise be allowed by the projection principle. In Navajo, for example, also possibly non-configurational (cf. Hale, 1981a), while some flexibility of word order is observed, it is not free in the Warlpiri sense because linear ordering, in concert with verbal inflection, signals the proper assignment of grammatical functions to overt nominal expressions (cf. Hale, Jeanne, and Platero, 1977; Perkins, 1978; Platero, 1982) – one verbal inflection (the object marker **yi-**) takes the subject and object to be in that order, i.e., SO, while another inflection (**bi-**) takes them to be in the opposite, i.e., OS. Thus, while freedom of word order is allowed in Navajo, by virtue of its position relative to the CP, a principle of interpretation takes overt nominals to be in a fixed order for the purpose of determining their grammatical functions. Similarly, extensive use of null anaphora may or may not be permitted in a given non-configurational language. The use of null anaphora is often severely constrained in languages which lack verbal or auxiliary inflections indicating the person and number (and gender, if relevant) of the direct arguments of the verb. This restriction may well be due to a general principle of recoverability in discourse, permitting

null anaphora only where the reference is clear from the immediate linguistic or discourse context.

In short, then, the Configurationality Parameter (28) determines what superficial characteristics a non-configurational language *may* exhibit, not characteristics that it *must* exhibit. Only in this weak sense does the CP explain the congruence in Warlpiri of the non-configurational properties mentioned in the introduction. All of this, it seems to me, has implications for the question of learnability and for the question of the relative markedness of the types defined by the CP.

I turn now to some concluding remarks on the possible implications of the CP for future research.

5. Some Implications

If the CP corresponds, in fact, to a true parameter of linguistic variation, then it generates certain corollary parameters of its own, particularly for languages of the non-configurational type. Since the CP itself does not determine any particular relation between LS and PS in non-configurational languages, there is a large potential for variation among languages in the manner in which these entities relate to general principles of grammar. In general, it is reasonable to ask what role PS plays in the interpretation of sentences – e.g., what role does linear order play? I would like to consider briefly just a small part of this question – namely, the possible variability among non-configurational languages with respect to the manner in which Condition (C) of the Binding Theory holds.

Condition (C) is formulated as follows (Chomsky, 1981, p. 188):

(42) *The Binding Theory* (continued):
(C) An R-expression is free.

In a non-configurational language, Condition (C) becomes relevant only when the rule 'assume a GF' has applied in such a way as to convert an LS argument into an R-expression by equating it with a lexically headed nominal expression (other than a pronoun) with definite or indefinite reference, as in the argumental reading of (32), depicted at (38) above. To say that an R-expression is free in LS, for example, is to say that it is not coreferential with an argument which c-commands it – i.e., it is not bound. Thus, for example, a structure corresponding to (38) above would be ill-formed if the *abs* argument were marked as anaphoric (i.e., [+ an]), since the subject would then necessarily bind the object, an R-expression, by virtue of the rule Assume

a GF applied to the absolutive PS nominal **ngarrka** 'the man, a man'.[19] Condition (C) therefore prevents an application of Assume a GF which would equate an R-expression with an anaphoric argument in LS. Thus, in sentence (43) below, the overt absolutive nominal may only be interpreted predicatively, or as a grammatical error:

(43) Ngarrka ka- nyanu nya- nyi.
man PRES refl see NONPAST
He sees himself as a man.

To receive an argumental reading in a reflexive construction of this sort, the overt nominal would have to be in the ergative and, therefore, assume the subject function, by virtue of which it would be free, in conformity with the Binding Theory:

(44) Ngarrka- ngku ka- nyanu nya- nyi.
man ERG PRES refl see NONPAST
The man sees himself.

Given the possibility, inherent in the CP, of a disparity between LS and PS in a non-configurational language, a natural question to ask is this: Which structure is relevant to Condition (C) of the Binding Theory? PS only? LS only? Both? That is to say, in determining whether Condition (C) is met, is it necessary only to look at PS structure, ignoring LS? Or is it the reverse? Or is it necessary to look at both representations?

I will not be able to answer this question for Warlpiri, since the data I have at hand simply do not bear on the issue.[20] Accordingly, the ensuing discussion is to be taken as a memorandum for future research.

In order to prevent the discussion from becoming overly diffuse, I will hold certain assumptions constant. First, I will assume that the subject argument in LS c-commands the object, universally. Second, I will assume that the PS structure of clauses in non-configurational languages is flat, in the sense that the direct arguments of a verb c-command one another in PS.

[19] Interestingly, in Nyangumarda (O' Grady, 1964), a language not too distantly related to Warlpiri, it is the absolutive case, rather than the ergative, which appears on the subject of a reflexive-reciprocal. It may be that the reflexive construction in Nyangumarda detransitivizes the verb (cf. fn 11 above), though I doubt this; an alternative view is that Nyangumarda uses a special case assignment rule according to which the absolutive is assigned to the subject when it binds, and is therefore non-distinct from, the object (cf. Langacker, 1976).

[20] Perusal of several hundred pages of Warlpiri text, taken from (1) an essay on kinship and (2) conversations about kinsmen, and chosen in order to increase the likelihood of the use of pronominal anaphora, reveals no clear examples that would contradict the claim that Warlpiri belongs to type (48c).

Third, in a flat structure, both 'primary relations' (cf. Langacker, 1969) – precedence and c-command – are relevant to Condition (C). Specifically, Condition (C) prohibits coreference between an R-expression *B* and an argument *A* if *A* both precedes and c-commands *B*. For example, assuming Japanese to be non-configurational, and therefore possessed of a flat PS structure (in the above sense), Condition (C) will permit coreference between a subject R-expression and an anaphoric object, provided these two arguments appear in the order SO, despite the fact that the object c-commands the subject in PS:

(45) John$_i$- ga zibun$_i$- o hihan si- ta.
NOM self ACC criticize do PAST

John criticized himself.

But Condition (C) will forbid coreference if the order is reversed (giving OS, a perfectly possible order otherwise):

(46) *Zibun$_i$- o John$_i$- ga hihan si- ta.
self ACC NOM criticize do PAST

Himself, John criticized.

Note that the anaphor may in fact precede the R-expression which binds it, provided it does not also c-command the R-expression:

(47) Zibun$_i$- no haha- o John$_i$- wa aisite
self GEN mother ACC THEME loving
i- ru.
be NONPAST

His own mother, John loves.

Here the anaphor (**zibun**) is within the object noun phrase and, therefore, does not c-command the discourse theme (and functional subject, *John*-**wa**), although it precedes the latter.

Returning to the question now, if non-configurational languages can vary according to which structure is relevant to Condition (C) (i.e., PS, LS, or both), then there could be three non-configurational subtypes:

(48) a. Only PS is relevant:
Surface word order is free, ceteris paribus, except that Binding Condition (C) cannot be violated in PS.

b. Only LS is relevant:
Word order is free, ceteris paribus, but Condition (C) cannot be violated in LS.

c. Both LS and PS are relevant:
Word order is free, ceteris paribus, except that Condition (C) cannot be violated (in LS or PS).

Here again, I am not prepared to pursue these possibilities in detail, but some extremely interesting work on Japanese (Saito, 1982; and Whitman, 1982) bears directly on the question, and I would like to make some initial observations in regard to the Japanese data.

Clearly, PS is relevant in Japanese, as (45–47) above (taken from Whitman, 1982) attest. Notice, however, that those sentences do not bear on the question of whether LS is also relevant, since in all three cases, the functional structure (derived from LS by the rule Assume a GF) is such that the R-expression (the subject) c-commands the anaphor it binds (the object, or an NP contained within the object). In particular, the ill-formed sentence (46) has the same well-formed LS that the grammatical (45) has:

(49) *[$_{v'}$ John-ga = arg_x [$_v$ zibun-o = arg_y, hihan si-ta]]

There is evidence, however, that LS is also relevant to Condition (C) in Japanese. Consider the following sentence (from Saito, 1982):

(50) *John$_i$- no sensei- o kare$_i$- ga syookai si-
GEN teacher ACC he NOM introduce do
ta.
PAST

John's teacher, he introduced.

In this sentence, *John* and **kare** 'he' cannot be coreferential, even though coreference in PS would not violate Condition (C). In LS, however, coreference between *John* and **kare** would violate Condition (C), because the latter c-commands the former:

(51) [$_{v'}$ kare-ga = arg_x [$_v$ John-no sensei-o = arg_y, syookai si-ta]]

Thus, Japanese is evidently a language of type (48c); and, perhaps, this is the unmarked type.[21] I know of no clear case of a language in which only LS is relevant to Condition (C) (i.e., a language of type (48b)), but there are possible cases in which satisfaction at PS, with grammatical results, is in complete and utter defiance of the (assumed) c-command relations at LS – one of these is Samoan (Chapin, 1970; and thanks to Jane Simpson for bringing

[21] Saito (1982) develops an extremely interesting analysis of these data on the assumption that Japanese is configurational and that "scrambling" (i.e., surface free word order) is effected by the rule Move α.

this to my attention), and another is Navajo (Platero, 1982; also mentioned in Hale, 1981) – but I will leave it to the interested reader to pursue these leads.

Further research on this matter may well, and probably will, lead to rejection of the assumptions underlying the interpretations I have made of the linguistic data referred to in this paper. Whether the CP is supported or rejected by further work, perhaps some advance will have been made, in the sense that we will know a little bit more about the ways in which natural languages can, or cannot, differ.

References

Bresnan, J.: 1982, 'Control and Complementation,' *Linguistic Inquiry* **13**, 343–434.

Carroll, F.: 1977, 'An Interpretive Theory of Agreement in Warlpiri,' Ms.

Carter, R. J.: 1976, 'Some Linking Regularities,' Ms.

———: 1976–7, 'Towards a Linking Grammar of English,' *Recherches Linguistiques* **7**, 13–31, Université de Paris 8, Vincennes

Chapin, P. G.: 1970, 'Samoan Pronominalization,' *Language* **46**, 366–378.

Chomsky, N.: 1957, *Syntactic Structures*, Mouton and Co., The Hague.

———: 1970, 'Remarks on Nominalization,' in R. Jacobs and P. Rosenbaum (eds.), *Readings in English Transformational Grammar*, Ginn, Waltham.

———: 1981, *Lectures on Government and Binding*, Foris, Dordrecht.

Dik, S. C.: 1980, *Studies in Functional Grammar*, Academic Press, London and New York.

———: 1982, 'Some Basic Principles of Functional Grammar,' *Preprints of the Plenary Session Papers*, The XIIIth International Congress of Linguists, Nippon Toshi Center, Tokyo.

Farmer, A.: 1980, *on the Interaction of Morphology and Syntax*, MIT Dissertation, Cambridge, Mass.

George, L.: 1980, *Analogical Generalization in Natural Language Syntax*, MIT Dissertation, Cambridge, Mass.

Grimshaw, J.: 1981, 'Subcategorization of Grammatical Relations,' Paper presented at the Harvard Mini-Conference on the Representation of Grammatical Relations, Harvard University, December 12, 1981.

———: 1982, 'On the Lexical Representation of Romance Reflexive Clitics,' in J. Bresnan (ed.), *The Mental Representation of Grammatical Relations*, MIT Press, Cambridge, Mass.

Hale, K.: 1966, 'Kinship Reflections in Syntax: Some Australian Languages,' *Word* **22**, 318–324.

———: 1973, 'Person Marking in Walbiri,' in S. Anderson and P. Kiparsky (eds.), *A Festschrift for Morris Halle*, Holt, Rinehart, and Winston, New York.

———: 1976, 'The Adjoined Relative Clause in Australia,' in R. M. W. Dixon (ed.), *Grammatical Categories in Australian Languages*, Canberra: Australian Institute of Aboriginal Studies, Linguistic Series, No. 22, pp. 78–105.

———: 1980, 'Remarks on Japanese Phrase Structure: Comments on the Papers on Japanese Syntax,' in Y. Otsu and A. Farmer (eds.), MIT Working Papers in Linguistics, Vol. 2.

———: 1981a, *On the Position of Warlpiri in a Typology of the Base*, Indian University Linguistics *Club*, Bloomington.

———: 1981b, 'Preliminary Remarks on the Grammar of Part-Whole Relations in Warlpiri,' in J. Hollyman and A. Pawley (eds.), *Studies in Pacific Language and Culture in Honor of Bruce Biggs*, Linguistics Society of New Zealand. Auckland.

———: 1982a, 'Preliminary Remarks on Configurationality,' in J. Pustejovsky and P. Sells (eds.), *NELS* 12, pp. 86–96.

———: 1982b, 'Some Essential Features of Warlpiri Verbal Clauses,' in S. Swartz (ed.), *Papers in Warlpiri Grammar in Memory of Lothar Jagst*, SIL-AAB Work Papers, pp. 217–315.

———, L. Jeanne, and P. Platero: 1977, 'Three Cases of Overgeneration,' in P. Culicover, T. Wasow, and A. Akmajian (eds.), Acadmic Press, New York.

Huang, C. -T. J.: 1982, *Logical Relations in Chinese and the Theory of Grammar*, unpublished PhD dissertation, MIT.

Jackendoff, R.: 1977, *$\bar{X}$ Syntax: A Study of Phrase Structure*, MIT Press, Cambridge, Mass.

Kaplan, R., and J. Bresnan: 1982, 'Lexical-Functional Grammar: A Formal System for Grammatical Representation,'in J. Bresnan (ed.), *The Mental Representation of Grammatical Relations*, MIT Press, Cambridge Mass.

Langacker, R.: 1969, 'On Pronominalization and the Chain of Command,' in D. A. Reibel and S. A. Schane (eds.), *Modern Studies in English* Prentice-Hall, Englewood Cliffs.

———: 1976, *Non-Distinct Arguments in Uto-Aztecan*, University of California Publications, Linguistics 82.

Lapointe, S. G.: 1980, *A Theory of Grammatical Agreement*, unpublished PhD dissertation, University of Massachusetts, Amherst.

Laughren, M.: 1978, 'Directional Terminology in Warlpiri,' *Working Papers in Language and Linguistics*, **8**, 1–16. Tasmanian College of Advanced Education, Launceston.

Lieber, R.: 1980, *The Organization of the Lexicon*, unpublished PhD dissertation, MIT.

Marantz, A.: 1981, *A Theory of Grammatical Relations*, unpublished PhD dissertation, MIT.

Nash, D.: 1980, *Topics in Warlpiri Grammar*, unpublished PhD dissertation, MIT.

O'Grady, G. N.: 1964, *Nyangumata Grammar*, Oceania Linguistic Monographs.

Perkins, E. T.: 1978, *The Role of Word Order and Scope in the Interpretation of Navajo Sentences*, University of Arizona Dissertation, Tucson.

Perlmutter, D.: to appear, *Studies in Relational Grammer*.

Platero, P.: 1982, 'Missing Noun Phrases and Grammatical Relations in Navajo,' *International Journal of American Linguistics* **48**, 286–305.

Reinhart, T.: 1976, *The Syntactic Domain of Anaphora*, unpublished PhD dissertation, MIT.

Riemsdijk, H. van: 1981, 'On Adjacency in Phonology and Syntax,' in V. A. Burke and J. Pustejovsky (eds.), *NELS* **11**, pp. 399–413.

Saito, M.: 1982, 'Scrambling, Topicalization, and Strong Crossover,' Ms.

Simpson, J.: in preparation, *Control and Predication in Warlpiri*, PhD dissertation, MIT.

———: and J. Bresnan: 1983, 'Control and Obviation in Warlpiri,' *NLLT* **1**, this issue.

Stowell, T.: 1981, *Origins of Phrase Structure*, unpublished PhD dissertation, MIT.

Verngaud, J-R., and M-L. Zubizarreta: 1982, 'On Virtual Categories,' MIT Working papers, No. 4.

Whitman, J.: 1979, 'Scrambled, Over Easy, or Sunny Side Up?' *Proceedings of the Chicago Linguistics Society* **15**, 342–52.

———: 1982, 'Configurationality Parameters,' Ms.

Williams, E.: 1980, 'Predication,' *Linguistic Inquiry* **11**, 203–238.

———: 1981, 'Argument Structure and Morphology,' *The Linguistic Review* **1**, 81–114.

Zubizarreta, M-L.: 1982, *On the Relationship of the Lexicon to Syntax*, unpublished PhD dissertation, MIT.

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