

Non-Configurationality in Australian Aboriginal Languages

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NON-CONFIGURATIONALITY IN AUSTRALIAN ABORIGINAL LANGUAGES*

The syntax of the Australian Aboriginal language Warlpiri has led to two opposing models of non-configurationality: a dual structure hypothesis, which abandons the projection principle for a grammatical architecture that separates constituency and functional representations (Simpson 1983, 1991, Hale 1983, Kroeger 1993), and a pronominal argument hypothesis, which hypothesizes that bound or zero pronominals satisfy the projection principle in such languages, with free nominals analysed as adjuncts (Jelinek 1984, Baker 1991, Hale 1993). Although the pronominal argument hypothesis is widely accepted in the syntactic literature, we show that available evidence from Warlpiri, new evidence from the related language Jiwarli, and a survey of six other Australian languages actually support the dual structure hypothesis. The non-configurationality characteristics of free word order, null anaphora, and split NPs are in fact independent of each other and of the distribution of bound pronouns. Additionally, the clitic pronouns that Jelinek (1984) and others take to be the source of non-configurationality in Warlpiri are simply an areal feature of Australian languages that is independent of the syntactic properties that are supposed to derive from it.

INTRODUCTION

As a result of the research of Ken Hale and others, Australian Aboriginal languages have become renowned in the syntactic literature for exhibiting properties dubbed 'non-configurationality', including 'free' (pragmatically-determined) word order, syntactically discontinuous expressions, no VP constituent (for verb and NP object), split-ergative case marking, and null anaphora. Two major theoretical accounts of non-configurationality have been proposed: the 'pronominal argument' model (Jelinek 1984; Speas 1990, Baker 1990, 1991, 1992; Hale 1993) and the 'dual structure' model

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(Hale 1983; Simpson 1983, 1991; Kroeger 1993).¹ The pronominal argument model claims that in non-configurational languages enclitic pronouns or null pro's licensed by agreement markers are the true predicate arguments, with free nominals analysed as adjuncts. These pronominal arguments of the verb provide the core configurational structure that satisfies the projection principle. In contrast, the dual structure model abandons the projection principle for a grammatical architecture that separates constituency and functional representations. It treats S as a non-projective (exocentric) category, and introduces null pronominals lexically, thereby accounting for the 'non-configurational' properties independently. Both models can be implemented in a variety of linguistic frameworks (Bresnan and Mchombo 1987 and Demuth and Johnson 1989 propose a version of the pronominal argument hypothesis within the overall LFG parallel structure architecture, while Hale 1983 and Brunson 1988 presents a dual structure analysis within the general framework of GB theory), but the dual structure model undermines the generality of the transformational architecture (Speas 1990, Baker 1991).

The pronominal argument hypothesis is widely accepted in the syntactic literature because of its theoretical economy in assimilating non-configurational languages to the configurational model and its explanatory elegance in deriving the non-configurationality properties from a single formal source. Nevertheless we will argue that it compares unfavorably to the dual structure analysis for Warlpiri itself, for the distantly related Australian language Jiwarli, and for the typological characterization of non-configurationality in Australian Aboriginal languages. Jiwarli lacks clitic pronouns or agreement markers but has an ergative split and Warlpiri-like nonconfigurationality properties. Our evidence from Jiwarli syntax and a survey of six other Australian languages shows that the non-configurationality characteristics of free word order, null anaphora, and split NPs are in fact independent of each other and of the distribution of clitic pronouns. The latter is an areal feature of Australian languages that can cross-cut even dialects of the same language. It cannot be taken to be the unifying explanation for non-configurationality of the Warlpiri type.

¹ A third model of 'free word order' is the scrambling or adjunction analysis (Mahajan 1990, Webelhuth 1992); Hale (1993) gives evidence against the applicability of this model to Warlpiri. A basic problem he notes is the absence of any 'movement' phenomena in the language.

1. NON-CONFIGURATIONALITY IN WARLPIRI

Warlpiri has been taken as the exemplar of non-configurationality in Australian Aboriginal languages. Its characteristic free word order, discontinuous constituents, and omissibility of nominals giving rise to null anaphora are well known (Hale 1973, 1980, 1983, 1992, 1993; Nash 1980 [1986]; Simpson 1983, 1991; Jelinek 1984; Laughren 1989, 1994). In (1), for example, all permutations of words that preserve the second position of the auxiliary are grammatical, and Hale (1980) reports that speakers spontaneously offer such word order permutations as repetitions of the same sentence (in the following examples the auxiliary is in boldface).²

- (1) Kurdu-jarra-rlu =**ka-pala** maliki wajili-pi-nyi
child-DUAL-ERG PRES-3duSUB dog.ABS chase-NPAST
 wita-jarra-rlu.
small-DUAL-ERG

Two small children are chasing the dog. OR Two children are chasing the dog and they are small.

(Simpson 1991, p. 257, ex. 218)

In general, the individual words that make up noun phrases can appear separately and interleaved with other constituents, and noun phrase arguments can be omitted with a pronominal interpretation.

There are virtually no ‘movement’ phenomena in Warlpiri (Hale 1993), but one test for constituency is the pre-auxiliary position, which can be occupied by a single constituent such as the NP in (2):

² Abbreviations used in the examples are: ABS – absolute, ACC – accusative, ADMON – admonitive, ALLAT – allative, CAUS – causative, COMIT – comitative, DAT – dative, DD – double dative, ERG – ergative, EUPH – euphonic, FUT – future, IMPER – imperative, IMPERF – imperfective, IMPERFDS – imperfective different subject, IMPERFSS – imperfective same subject, INCHOAT – inchoative, INFIN – infinitive, INTENT – intentive, LOC – locative, NOM – nominative, NON SING – non-singular, NPAST – non-past, OBJ – object, PAUC – paucal, PERFDS – perfective different subject, PHON – phonological, PL – plural, POSS – possessive, POT – potential, PRES – present, PRIV – privative, PSYCH – psychological, S=O – subject coreferential with object, S=S – subject coreferential with subject, SPEC – specific, SUBJ – subject, TOP – topic, TR – transitivizer, USIT – usitative. In the Chichewa example, PRES.HAB is present habitual, arabic numerals denote noun classes, and Roman numerals denote person. The clitic boundary = has been added to the Warlpiri examples to mark the auxiliary enclitics.

- (2) Kardiya yurrkunya-rlu manu yapa-ngku
whiteman policeman-ERG and Aboriginal-ERG
 turaka-rlu **kalaka-ngku-pala** muru-pi-nyi.
tracker-ERG ADMON-2sgOBJ-3duSUB arrest-NPAST
 A white policeman and an Aboriginal tracker [police aide] can
 arrest you.

(Simpson 1991, p. 130, ex. 103)

NPs (including single nouns), verbs, pre-verbs, and particles can appear in this position. Sequences of words that do not form a constituent cannot. A second test is that only the final word or words in a NP constituent need be case-marked. Thus, contiguous NPs may omit case marking on their constituent words, as we see in the first NP (*kardiya yurrkunya-rlu*) in (2), but discontinuous NPs may not.

Such constituency tests support the existence of an infinitive phrase consisting of an infinitive verb and its arguments:

- (3) Purlapa pi-nja-karra-rlu **kala-lu**
corroree.ABS dance-INFIN-S=S-ERG USIT-3pl.SUB
 pirlirpa yilya-ja.
spirit.ABS send-PAST

By dancing a corroboree they would send away the spirit.

(Simpson 1991, p. 132, ex. 107)

In this example the auxiliary cannot separate the infinitive verb from its complement, unless the complement is itself marked with the same suffix *-karra*, in which case it may appear separated from the infinitive as a distinct constituent (Simpson 1991, p. 132).

In contrast to the infinitive, the finite verb together with its complement(s) *cannot* appear in pre-auxiliary position (Simpson 1991, p. 106; Laughren, 1989, p. 330; Hale 1993). Simpson (1991) gives a simple explanation for this contrast. The heads of infinitive phrases in Warlpiri are nominalized verbs: their complementizers are nominal suffixes that can attach to nouns, they reduplicate like nouns (Nash 1980), and they undergo denominal morphological processes such as causativization (Simpson 1991, pp. 107–111). Moreover, they can take the same case markers as nouns. For example, in (4), the noun ‘water’ is dative-marked as the complement of the noun predicate ‘desirous’:

- (4) Ngaju = **rna** ngapa-ku ngampurpa.
I-1sgSUB water-DAT desirous
 I want water.

(Simpson 1991, p. 123, ex. 91)

In (5) the infinitival complement to the noun predicate *pina* 'knowledgeable' also shows dative case-marking (and does so on both words of the NP):

- (5) Pina = **npa** kuyu-ku purra-nja-ku?
knowledgeable-2sgSUB meat-DAT cook-1NF-1NF-DAT
 Do you know how to cook meat?

(Simpson 1991, p. 123, ex. 92)

Thus, according to Simpson, infinitive phrases are NPs headed by nominalised verbs. Basic complement-taking nouns also form NPs, which may appear in pre-auxiliary position:

- (6) Ngapa-ku ngampurpa-rlu = **ju-lu** wapidipaka-rnu
water-DAT desirous-ERG-1sgOBJ-3plSUB hit-PAST
 mulju-jangka-ju.
soakage-SOURCE-EUPH

Wanting water, they hit me as I arrived from the soakage.

(Simpson 1991, pp. 131–132, ex. 106b)

Both the nominalized verbs, as in (3), and the basic complement-taking nouns, as in (4) and (6), share another property that distinguishes them from verbs: they are NP-final, following their arguments (Simpson 1991, pp. 132–133). Thus the reason that infinitive phrases can appear in the pre-auxiliary position is simply that Warlpiri has NP constituents. In contrast, a (finite) verb and its object cannot appear in pre-auxiliary position just because Warlpiri lacks VPs, or any verbal projection containing the verb and its complements excluding the subject. Note that topicalizing or focusing a VP in initial position cannot be ruled out in principle: it is possible in many scrambling languages, including Korean (Choe 1985, 1988), colloquial Russian (King 1995), German (Webelhuth 1990; cf. Haider 1990), and Kashmiri (Bhatt 1994).

2. THE DUAL STRUCTURE HYPOTHESIS

The hypothesis that Warlpiri lacks a VP constituent implies, of course, that the differences between subjects and objects are not reducible to phrase structure configuration: in other words, Warlpiri is non-configurational. Both Simpson (1983, 1991) and Hale (1980, 1983) assume that the information about grammatical relations that is expressed in English in terms of phrase structure configuration is expressed in Warlpiri by other means (particularly by case morphology), and that this information is abstracted in a representation of functional structure which is parallel to the surface phrase structure (or *c*-structure), and linked to it by nontransformational principles of correspondence. Principles common to English and Warlpiri (such as the asymmetries of reflexive binding and control) are principles of functional structure.

To illustrate how the dual structure model works in more detail, we will give one implementation of it based on recent work within LFG (Simpson 1991; Kroeger 1993; King 1995; Nordlinger 1995; Bresnan 1995b) incorporating a theory of 'prosodic inversion' (Halpern 1995).

In LFG, the syntax of language is modelled as linked parallel structures, each of a different formal character. The grammar consists of a set of local, co-descriptive constraints on partial structures. There are no derivational or transformational operations involved: grammatical structures are defined by constraint satisfaction (Bresnan 1982).

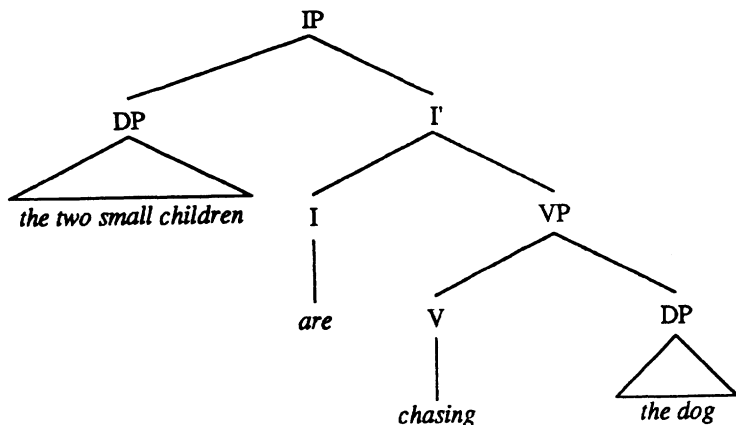
Each of the parallel structures of LFG models a different dimension of the structure of language. A(*rgument*)-structure models the grammatically expressible participants of eventualities; f(*unctional*)-structure models the grammatical relations among syntactic functions, and c(*ategorial*)-structure models the outer or 'overt' structure of forms of expression. The structures are associated by principles of functional correspondence (also called 'linking' or 'mapping' principles). The prosodic structures of phrasal phonology constitute a fourth dimension – they are linked to *c*-structure by similar correspondence principles (see Inkelas and Zec 1990 and the references therein).

Let us take the English sentence in (7) as an example:

(7) The two small children are chasing the dog.

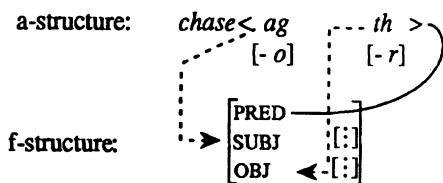
The *c*-structure of this sentence is given in (8):

(8)



By principles of the lexical mapping theory (Bresnan 1995b, Bresnan and Zaenen 1990; Simpson 1991), the lexical a-structure of the verb stem of *chasing* projects a skeletal nucleus – an incomplete f-structure representing the central relation (PRED) and syntactic functions of its participants:

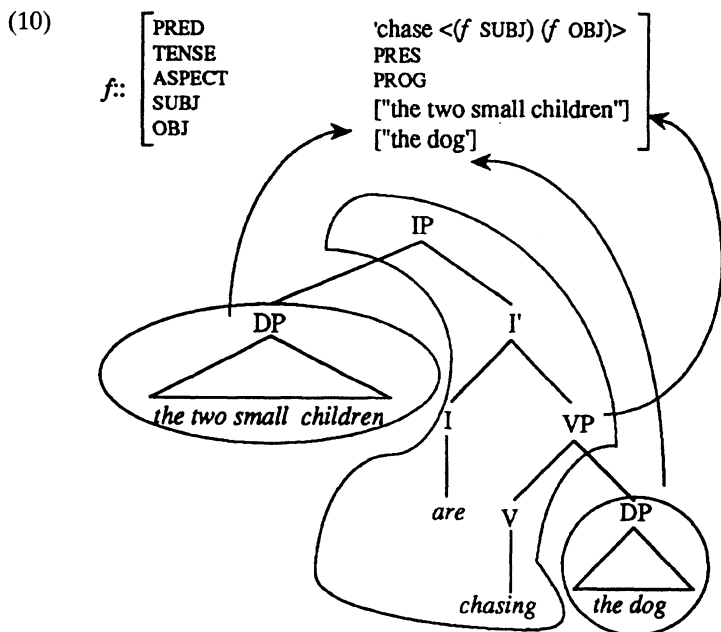
(9) Correspondences between a- and f-structures of *chasing*:



General principles of uniqueness, completeness, and coherence ensure that the verb’s skeletal nucleus will match up and unify with the f-structure induced by its surrounding syntactic context, as we will see directly.

Because English is a highly configurational language, it largely relies on endocentric principles of function specification, of the type provided by X’ theory. For example, we can infer from such principles that in the c-structure above in (8), the DP in the Specifier of IP position has the subject function SUBJ and the DP in the complement of VP position has a complement function (which is determined to be an object OBJ by the lexical mapping theory). Every c-structure node has a function in the f-structure. Further, we assume that c-structure heads are also f-structure heads and that the c-structure sisters of functional categories such as I⁰ or C⁰ are f-structure co-heads (Kroeger 1993, King 1995). From this we can infer that the extended projection of the verb – that is, the V, VP, I’, I’

and IP (cf. Grimshaw 1991) – corresponds to one unified f-structure.³ This analysis can also capture the fact that the I^0 and V combine information in the f-structure to provide TENSE and ASPECT features as well as the predicator relation PRED for the entire sentence (see Nordlinger 1995 and Niño 1994). Thus we arrive at the correspondences shown in (10):



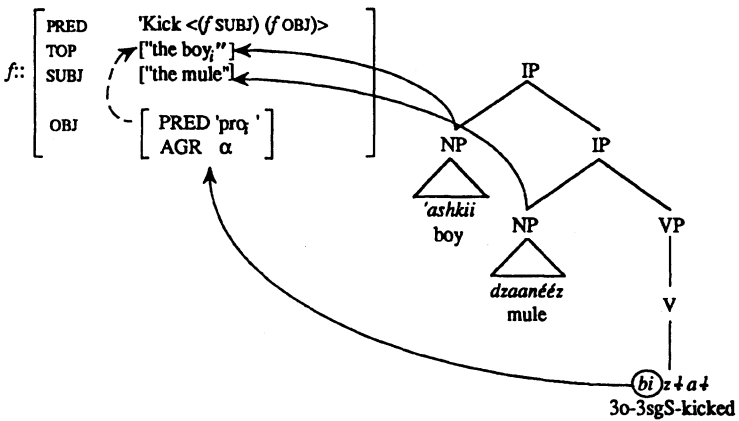
Because c-structure in this framework is not used to represent a-structure relations or f-structure relations (cf. Bresnan and Kanerva 1989; Bresnan 1994a, 1995a), the X' theory takes a different form than is assumed in transformational frameworks. In particular, in LFG X' theory conforms to the principle of lexical integrity, in the sense of *structural integrity of morphological words* (see Bresnan and Mchombo 1995 and the references therein). Thus the leaves of the c-structure tree must be fully inflected words, and all 'functional' categories in the sense of extended X' theory (e.g. I^0 , C^0 , D^0) must correspond to specialized subclasses of words, not to 'dangling affixes' or 'disembodied features' (cf. Kroeger 1993). The complex functional information that inflected words carry is represented in f-structure, not c-structure, so each 'leaf' belongs

³ The head-of relation in LFG is modelled by identification (and hence unification) of f-structures.

to one and only one node of the c-structure tree (Nino 1994; Nordlinger 1995).⁴

Though words have integrity of structural formation, in the architecture of LFG words may determine the same kinds of f-structures as syntactic phrases (T. Mohanan 1995; Simpson 1991; Matsumoto 1992). In the grammars of some languages bound pronominal inflections have been shown to carry the same functional specifications as syntactic pronouns (Bresnan and Mchombo 1987; Demuth and Johnson 1989; Andrews 1990); thus pronominal argument languages are a natural typological possibility in this framework (see Section 3). If a pronominal argument is specified by a verbal inflection, the principle of functional uniqueness precludes a syntactic expression of that argument (Bresnan and Mchombo 1986, 1987).⁵ Overt nominals in such languages may be optional topics or adjuncts connected to the sentence by pronominal anaphora. This is illustrated by the Navajo example shown in (11),⁶ and is the key idea underlying the pronominal argument model discussed in Section 3 below.

(11) 'The boy, the mule kicked him'.



Such pronominal inflections often evolve historically into grammatical agreement markers, and within LFG there is a natural model for this process, in the gradual erosion of the semantic and binding features of

⁴ This is not the case with 'checking' theories (Chomsky 1993).

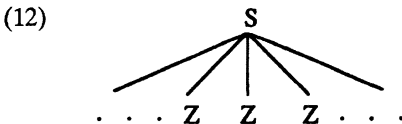
⁵ Headless modifiers of the same argument may, however, be expressed syntactically (Simpson 1991, Andrews 1990).

⁶ This example, from Bresnan (1995b), is based on the work of Uyechi (1991) and Spears (1990).

the pronoun while the classificatory features of person, number, and gender remain (cf. Bresnan and Mchombo 1986, 1987; Andrews 1990; Nordlinger 1995). From the principle of functional uniqueness (which distinguishes semantic features as non-unifiable) it follows immediately that the loss of the pronominal semantic feature will permit cooccurrence with compatible nominal syntactic arguments.

Not all languages are assumed to abide by endocentricity in their c-structures. There is a competing structural principle of predicate-argument locality, which favors closer proximity between a verb or other predicator and its arguments, including the subject. This principle is evidenced in such typologically diverse languages as Tagalog (Kroeger 1993), Hungarian (Kiss 1987, 1994), Malayalam (Mohanan 1982), Warlpiri (Hale 1983; Simpson 1991), Jiwarli (Austin in press b), Wambaya (Nordlinger 1995), Jakalteq and others (Woolford 1991). All of these languages have been assumed to have a distinguished category that admits 'internal subjects'. Chung and McCloskey (1987) designate it a 'small clause' SC, distinct from IP or CP; Kroeger (1993) designates it as an exocentric S and shows that in Tagalog it cannot be identified with VP, providing evidence against a category of VP in that language. We follow Kroeger in hypothesizing that internal-subject languages have the category S distinct from IP or CP, dominating the subject. Such languages may also have IP or CP, or both, and the specifier of these functional projections we take to be a discourse-linked function (topic or focus), which may be optional or lacking in some languages.

The distinguished category S is non-projective and exocentric. Nonprojectivity means that S lacks a categorial head: its category cannot be identified with any fixed category X^0 . Exocentricity means that S may have an f-structure head of a different category, whether V, N, A, VP, NP, AP, or other. The non-projectivity of S implies that it may dominate multiple distinct categories Z not bearing the typical binary branching relations of endocentricity. Partially endocentric structures are available (see Kroeger 1993, Bresnan 1995b), but in the most radical cases of non-configurationality, the c-structure may be completely 'flat' (cf. Blake 1983).⁷

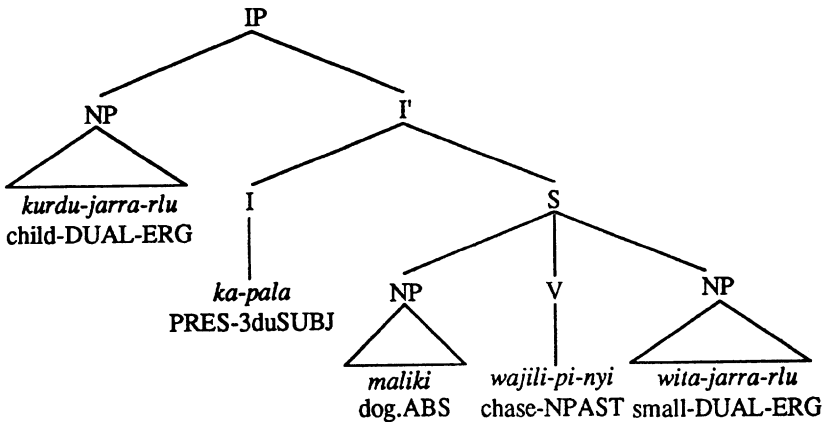


⁷ Asymmetries among arguments can still be captured at the levels of a-structure and f-structure (Bresnan 1994b, 1995b).

In this non-configurational structure type, the functions of the daughters of S – indicated by Z in (12) – are not specified by the principles of endocentricity, and cannot be. Instead, syntactic functions are characteristically associated with case and agreement features of the predicator and its arguments. In particular, functions can be specified by the case morphology of the nominal arguments of predicators (cf. Mohanan 1982; Simpson 1991; Butt 1995). Warlpiri is hypothesized by Simpson to have this type of non-configurationality. Let us now examine a version of the dual-structure model for Warlpiri within the LFG framework just outlined.⁸

The c-structure of the Warlpiri sentence (1) is shown in (13):

(13) ‘The two small children are chasing the dog’.



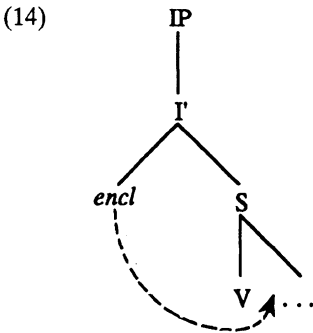
As (13) illustrates, the basic Warlpiri sentence consists of an IP with an optional Specifier position; the I node is occupied by the Auxiliary, which consists of a base providing partial tense and aspectual information, together with person/number agreement suffixes for SUBJ and OBJ. The c-structure sister of the Auxiliary is the non-projective category S, which has the radically flat internal structure of (12). As with most internal-subject languages, the Specifier of IP may be associated with a grammaticalized discourse function such as topic or focus (cf. Aissen 1992; Kroeger 1993; King 1995). Swartz (1988) argues that it is focus in Warlpiri (see also Austin in press). Simpson observes that when the sentence has a verb predicator, an Auxiliary is required, and when the sentence has a noun as the main predicator, it is optional. This observation is easily

⁸ Our analysis extends Simpson’s along the lines suggested by Kroeger (1993), as modified by Halpern (1995) and Nordlinger (1995) (for Wambaya, a typologically similar Australian language).

captured by allowing either IP or S to serve as the topmost node of a sentence. The tense inflection on verbs requires a co-present auxiliary tense, and hence the presence of I⁰ (cf. Nordlinger 1995 on split tense inflection in Wambaya). In languages such as Jiwari (Section 5) only S is the top-most node.

A number of researchers have observed that the positioning of the Auxiliary in Warlpiri is prosodically conditioned. The Auxiliary is an enclitic, which forms a phonological unit with a preceding phonological word; stress and vowel harmony processes apply within this unit (Nash 1980). Auxiliaries with a monosyllabic base never appear in sentence initial position, unless they are connected to previous speech; auxiliaries with a disyllabic base can optionally appear initially (Simpson 1991). Yet we cannot simply assume, as some researchers have, that the placement of the auxiliary is entirely determined phonologically, following the first phonological word or phrase (e.g. Laughren 1989). There are prosodically quite complex syntactic units that can appear before the Auxiliary, as in example (2) above. We assume that these syntactic phrases occupy the optional Specifier of IP position and that the final phonological word of this phrase provides a prosodic host for the Auxiliary.

On the other hand, the Auxiliary can cliticize onto a verb, but general principles of X' theory are inconsistent with a lexical category X⁰ in the Specifier of IP position.⁹ In these cases, we assume that Auxiliary enclitics undergo 'prosodic inversion' (Simpson 1991, p. 69; Halpern 1995) when they have no phonological word preceding them. When the Specifier of IP is empty, the Auxiliary inverts in order to be *phonologically* positioned after the first prosodic word at the level of prosodic structure:



The evidence for prosodic positioning is clear in cases where the Auxiliary

⁹ So we must reject this part of Kroeger's (1993) analysis of Warlpiri.

interrupts a morphological word which cannot otherwise be separated, such as certain denominal verbs which undergo further derivation and inflection, and some preverb-verb compounds (Simpson 1991, pp. 114–5). Moreover, certain of these compounds have preverbs ending in a consonant; when interrupted by the Auxiliary, the preverb receives an extra *pa* syllable which preserves the Warlpiri constraint that all phonological words end in vowels (cf. Nash 1980):

- (15)a. *Rampal-luwarnu* = **rna-rla-jinta** marlu-ku.
mistake-shot = 1sgSUBJ-3sgDAT-DD kangaroo-DAT
 I shot at a kangaroo and failed.
- b. *Rampalpa* = **rna-rla-jinta** = luwarnu marlu-ku.
mistake = 1sgSUBJ-3sgDAT-DD = shot kangaroo-DAT
 I shot at a kangaroo and failed.
- (Laughren 1989, p. 330)

- (16)a. Ngajulu-rlu = **ka-rna-rla** jurlarda-ku
me-ERG = PRES-1sgSUBJ-3sgDAT honey-DAT
wapal-paka-rni.
seeking-chop-NPAST
 I am chopping in search of honey.
- b. *Wapalpa* = **rla** = paka-rnu nyanungu-rlu
seeking = PAST.3sgSUBJ.3sgDAT = chop-PAST he-ERG
 jurlarda-ku
honey-DAT
 He chopped in search of honey.
 (Bittner and Hale to appear, ex. 38b,c)

Finally, prosodic inversion is a ‘last resort’, according to Halpern (1995). We assume that this is what prevents the prosodic splitting of a caseless nominal component from a larger nominal constituent, illustrated in (17b) from Hale (1990, ex. 6):

- (17)a. Kurdu yalumpu-rlu = **ka-jana** maliki-patu jiti-rni.
child that-ERG = PRES-3plOBJ dog-PL tease-NPAST
 That child is teasing the dogs.

- b. *Kurdu = **ka-jana** yalumpu-rlu maliki-patu jiti-rni.
child = PRES-3plOBJ that-ERG dog-PL tease-NPAST
 That child is teasing the dogs.

In this situation, the alternative always exists of placing a case-marked form of the nominal in the Specifier of IP position, as illustrated by (1); according to Simpson's (1991) analysis of discontinuous NPs in Warlpiri, such nominals are dominated by a phrasal category NP.¹⁰ We use 'NP' here without commitment to a particular 'bar-level'.

This account of auxiliary positioning would lead one to expect that the Auxiliary could wrongly appear in third position if both the Specifier of IP and the Specifier of CP were filled.¹¹ In fact, the finite complementizer *kuja-* in Warlpiri is positioned within its clause exactly as the Auxiliary is positioned – in second position (Nash 1980, Hale 1993). This 'complementizer' appears to be simply an enclitic base, like the other Auxiliary bases (Nash 1980, pp. 59–60). When it combines with the present tense auxiliary base *ka-*, it has a non-compositional (main clause) meaning 'present presentational' (Nash 1980, p. 60; cf. Hale 1985). When it introduces a complement clause that contains a question word, the latter does not have to be in initial position (such as Specifier of CP),¹² though main clause interrogative words must be initial (for focus, presumably) (Hale 1993). These considerations suggest that this complementizer is just a specialized kind of auxiliary base with dependent clause meaning. Though its meaning and functions differ from the tense auxiliaries, there seems to be nothing categorial or structural to distinguish it from I⁰. There is simply no evidence for a separate CP category that stacks on top of IP in Warlpiri. Finite 'CP' is just a specialized kind of IP used for dependent finite clauses, including relative clauses which are adjoined and internally headed in Warlpiri.¹³

With this motivation for the c-structure of Warlpiri, let us turn to the f-structure. In Warlpiri the functions of nominals are determined by case principles, which are worked out in detail by Simpson (1991), building on Nash (1980). Essentially, Simpson assumes that each predicator of a sentence has a case frame which is predictable from its argument structure (though morphology also plays a role in the determination of subject case:

¹⁰ Conceivably, there could be a prosodic difference between the caseless and case-bearing internal nouns: case allomorphy in Warlpiri is prosodically conditioned by the moraic structure of the base (Nash 1980).

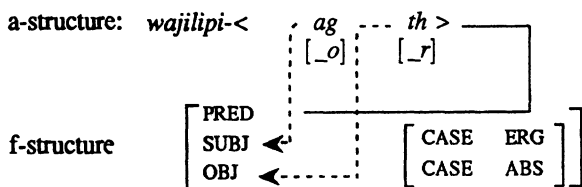
¹¹ Such concerns lead Halpern (1995) to postulate that inverting clitics must be adjoined to IP rather than in a head I position.

¹² This observation is based on examination of the examples in Hale (1993).

¹³ Though functionally dependent, these clauses are structurally unembedded (Hale 1976).

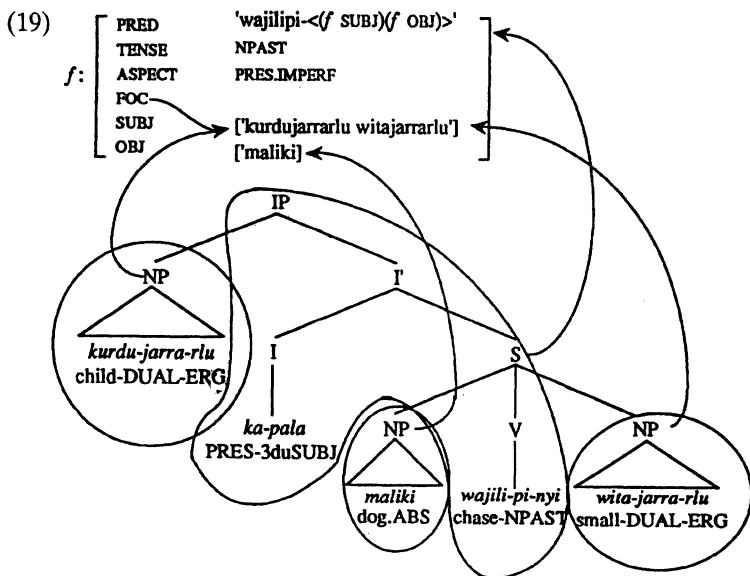
cf. Simpson 1991, and Bittner and Hale to appear). Thus the skeletal nucleus projected by the Warlpiri verb or nominal predicator will include CASE information:

- (18) Correspondences between a- and f-structure of *wajilipi*-
'wajilipi-':



Just as with the English example in (10) above, general principles of functional uniqueness, completeness and coherence ensure that the verb's skeletal nucleus will match up and unify with the f-structure induced by its surrounding syntactic context. Simpson (1991) hypothesizes that in radically non-configurational languages of this type, grammatical functions (head, argument, and adjunct functions) are freely associated with constituents in any position. In the example at hand with the verb *wajilipinyi*, this means that any nominal constituents associated with the SUBJ function must bear the ergative case required by the verbal nucleus; those associated with the OBJ function must bear absolutive case. Thus, case morphology replaces phrase structure configuration in the specification of syntactic functions.

This theory provides the correspondences between the c-structure and f-structure illustrated in (19):



The initial NP receives its FOC function from its position as Specifier of IP and its SUBJ function from the case principles of function specification outlined above. The f-structure of the IP projection is merged with the f-structure of the S by the general X'-theoretic principles mentioned above. The internal functions of S are specified by the case principles. The fact that two distinct NPs correspond to the same f-structure (the SUBJ) in this example follows directly from the case principles: because both nominals are marked with ergative case, both can be associated with the SUBJ function, and by functional uniqueness their f-structures must be merged. The theory outlined here provides correspondences for every grammatical permutation of constituents of sentence (1).

Most languages do not allow merger of the f-structures of different c-structure NPs, even when they are identically case-marked. Nominals in Warlpiri (and other Australian languages – see Sections 5, 6 below) have distinctive typological properties that prevent the violations of functional uniqueness that would ensue elsewhere. Firstly, every Warlpiri noun can be used referentially or predicatively (Hale 1983, pp. 37–395; Simpson 1991, pp. 257ff; Bittner and Hale 1994). Secondly, the daughters of NP in Warlpiri have the same free association of head, argument, and adjunct functions that the daughters of S do (Simpson 1991). Hence the final NP 'small' in example (19) can be a subject by the case principles, while the nominal within it can be an adjunct; the first NP 'child' can also be a subject by the same case principles, and the nominal within it can be the f-structure head of the subject. The merger of the f-structures of these two NPs will therefore satisfy functional uniqueness: the first ergative NP provides the functional head of the SUBJ, the final ergative NP provides an ADJUNCT within that SUBJ. Since the association of functions with structures is free, reversing adjunct and head is also possible: the sentence could mean 'The two childish small ones are chasing the dog'.¹⁴

Finally, in the general theory of c-structures, all nodes are assumed to be optional unless they are required by independent principles, such as completeness or coherence. In the case of the English example (8), *The two small children are chasing the dog*, the completeness principle requires the presence of the subject and object phrases in c-structure to satisfy the skeletal nucleus of the verb *chasing* shown in (9). English has very meager morpholexical resources for function specification: pronominal inflections are absent, a null pronominal is available only for the subjects of non-finite verbs (so-called 'PRO'), and except for personal pronouns, which bear the vestiges of Germanic case inflections, the language is morphologically

¹⁴ Further interpretations are possible as well; see Simpson (1991) for a complete analysis.

and third, it proposes a syntactic explanation for split-ergative case marking, a characteristic unrelated by previous theories to non-configurationality.

Jelinek's proposal is that the agreement markers appearing with the auxiliary in Warlpiri are pronominal clitics which themselves constitute the arguments of the verb. The various nominals in the clause are not arguments, but adjuncts in apposition to these clitic pronominal arguments, as in the English example (Jelinek 1984, p. 50, ex. 27):

- (21) He, the doctor, tells me, the patient, what to do.

Adjuncts are ungoverned, optional, and iterable, and these properties explain the appearance of free word order, null anaphora, and discontinuous constituents in Warlpiri.

The proposal also allows one to maintain that the core syntactic structure of Warlpiri is configurational, consistent with the projection principle (though Jelinek 1984; Laughren 1989, 1994; Speas 1990 and Baker 1991, 1992 all propose different versions of this core structure). The pronominal clitics are assigned nominative, accusative, and dative case (Jelinek's 'G-cases') by the verb and auxiliary which govern them. The cases of NPs, Jelinek's 'L-cases', are of two types. The primary L-cases are determined by case compatibility rules, which license the coindexing of an adjunct with a pronominal argument. Jelinek (1984, p. 53, ex. 53) states the compatibility requirements as follows:

- (22)a. NOM G-case is compatible with ABS L-case in an intransitive sentence, and with ERG L-case in a transitive sentence. (ERG marked nominals are excluded from intransitive sentences.)
- b. ACC G-case is compatible with ABS L-case in a transitive sentence, and with DAT L-case in a ditransitive sentence (for first and second person clitics).
- c. DAT G-case is compatible with DAT L-case (for third person clitics).

The secondary L-cases (locative, perlativ, allative, elative) mark ad-sentential adjuncts.

For Jelinek, the different cases of the pronominal clitics and NPs reflect the difference in function between arguments and adjuncts. Nominative and accusative are the standard grammatical cases governed by INFL and the verb in the Chomskyan framework assumed by Jelinek. Adjuncts, being ungoverned, may have a different set of cases. This explains 'erga-

tive splits' – the coexistence in the same language of both ergative–absolutive and nominative–accusative patterns of case-marking for different sub-classes of nominals. Because in these languages the clitics are the governed arguments, according to Jelinek's hypothesis, it further explains the observation that there are no languages with ergative splits in which the bound pronominals have ergative-absolutive marking and NPs have nominative-accusative marking.¹⁵

Finally, Jelinek (1984, pp. 69–70) generalizes over the case systems of Australia. She suggests that languages having either ergative splits or clitic pronouns (her groups (69c, d, e)) are pronominal argument languages, like Warlpiri. For those languages that lack clitic pronouns or agreement markers but have an ergative split, with nominative-accusative marking on independent pronouns, she suggests that the independent pronouns serve as verbal arguments, and that zero third person pronouns may cooccur with the overt nominals.

Jelinek's central idea has been adopted by many researchers (Jelinek 1993a, b, 1994; Jelinek and Demers 1994; Laughren 1989, 1994; Speas 1990; Baker 1991, 1992, 1994), with modifications of the specifics to fit with other theoretical assumptions. Hale, too, seems to have adopted this view, although he expresses a "lingering reservation" that Warlpiri NPs (at least those occurring somewhere before the verb) "do not have the 'feel' of dislocated phrases", they "are not 'excluded' from the clause structurally or intonationally" (Hale 1993, pp. 28–9).¹⁶

Despite its theoretical appeal and typological interest, we will argue that the pronominal argument hypothesis compares unfavorably to the dual structure analysis for Warlpiri. We will also show that it is inapplicable to the distantly-related Australian language Jiwari, and for the typological characterization of non-configurationality in Australian Aboriginal languages.

¹⁵ Jelinek's approach does not explain, however, the presence of ergative-absolutive bound pronouns in languages such as Mayan (Aissen 1987; Robertson 1980; Dixon 1994, pp. 43–44) and Abaza (Dixon 1994) (cf. Jelinek 1984, p. 69, and 1993b).

¹⁶ Hale (1993) speculates that adjunction at a lower level of structure (IP rather than CP) might be invoked to account for this discrepant fact in some way. Hale (1993) also examines whether binding, extraction, and other phenomena in Warlpiri are consistent with the pronominal argument hypothesis as developed by Baker (1991) for Mohawk, or with recent scrambling models (e.g. Webelhuth 1992; Mahajan 1990). The results appear inconsistent with scrambling, and not fully compatible with the pronominal argument model.

4. EVIDENCE FROM WARLPIRI

Scattered through the chapters of Simpson (1991) like a discontinuous constituent are a series of arguments against the pronominal argument hypothesis for Warlpiri. Unfortunately, most of these seem to have been ignored in theoretical discussions of non-configurationality. They also set the context for understanding the generalizations of Jiwarli to be discussed below. We therefore assemble and briefly recapitulate them here.

4.1. *Arguments and Adjuncts Differ in Interpretation*

The first major difference is that NPs can be definite or indefinite, while auxiliary-registered pronouns are always definite (Simpson 1991, pp. 153–154, citing Hale 1983 for this argument). Thus contrast the following pair:

- (23) Ngarrka-ngku =ka wawirri panti-rni.
man-ERG PRES kangaroo.ABS spear-NPAST

The/a man is speaking the/a kangaroo.

(Simpson 1991, p. 153, ex. 124)

- (24) Panti-rni =ka.
spear-NPAST PRES

He/she is spearing him/her/it.

(Simpson 1991, p. 153, ex. 123)

This difference is not explained by the pronominal argument hypothesis. Note that this argument does not concern the *syntactic* concept of definiteness: there are no definite or indefinite articles in Warlpiri (Bittner and Hale 1994). NPs containing an indefinite article in English can be used in apposition to definite pronouns, as in the example *She, a first-year undergraduate, stumped him, a tenured full professor* (Bernard Comrie, p.c.), but here they obviously have semantically definite (specific) referents. Rather, the claim is that Warlpiri nominals can be semantically indefinite (non-specific in reference) in contrast to the bound pronominal arguments without associated nominals. Without further context, this property is less obvious in (23) than in many other examples (cf. (2)–(6)).

A similar definiteness contrast between overt NPs and bound pronominals appears in Lummi (Straits Salish), which Jelinek (1993a, b, 1994) and Jelinek and Demers (1994) have also analyzed as being of the pronominal argument type. To explain this phenomenon within the pronominal argument model, Jelinek hypothesizes that bound pronominal arguments can be interpreted either as definite pronouns referring to topics (for the

definite readings), or as the logical variables introduced by indefinite NP arguments on Diesing's (1992) theory of indefinites (for the indefinite readings). In the latter case, the bound pronominal argument is coindexed with an adjoined nominal and then semantically bound by existential closure (Jelinek 1993b, pp. 29–39; Diesing and Jelinek, 1995). This special coindexing by the same logical variable is required for the indefinite interpretation of NPs adjoined to pronominal arguments. Note that the latter interpretation would arise without stipulation if the bound inflections were serving in these cases simply as markers of grammatical agreement with an NP argument, rather than as arguments. An agreement analysis can also explain contrasts that have nothing to do with definiteness, such as an interpretation difference involving number in Wambaya, spoken northeast of Warlpiri (Nordlinger 1993a, 1995). In this language bound object pronominals code *singular* number when no free NPs are present, but cross-reference singular/dual/plural number when an object NP is present.¹⁷

Secondly, discontinuous NPs can have either the 'merged' or the 'unmerged' interpretation (Hale 1980), while NP constituents have only the merged interpretation. This is seen in example (1), repeated here for convenience as (25), in contrast to (26):

- (25) Kurdu-jarra-rlu =ka-pala maliki wajili-pi-nyi
child-DUAL-ERG PRES-3duSUB dog.ABS chase-NPAST
 wita-jarra-rlu.
small-DUAL-ERG

Two small children are chasing the dog. OR Two children are chasing the dog and they are small.

(Simpson 1991, p. 257, ex. 218)

- (26) Kurdu wita-jarra-rlu =ka-pala maliki
child small-DUAL-ERG PRE5-3duSUB dog.ABS
 wajili-ni-nyi.
chase-NPAST

The two small children are chasing the dog.

(Simpson 1991, p. 258, ex. 219)

According to Simpson (1991, p. 258), the merged interpretation, corre-

¹⁷ Nordlinger (1995), shows that this type of contrast is easily captured within the model of pronominal inflection and agreement that we describe in Section 2.

sponding to the first translation of (25), covers restrictive and possibly some non-restrictive interpretations, while the second, unmerged interpretation covers non-restrictive interpretations, apposition, and secondary predication. If all NPs are appositional or secondary predicates, as on the pronominal argument hypothesis, this contrast has no clear explanation.

Thirdly, the allative case is used primarily for motion or spatial arrangement ending at a terminal point (Hale 1985), but there are also semantically selected NP arguments that appear in allative case, such as the complement of *wangka-mi* 'talk';

- (27) Yaany-pardi-mi **kajika-npa** nyuntu ngulaji ngari
shame-NPAST POT-2sgSUB you.SG.ABS that.ABS JUST
 =**ka-rna** wangka-mi yapa panu-kurra.
PRES-1sgSUB talk-NPAST person many-ALLAT
 You are taking it personally, but I'm just talking to everyone.
 (Simpson 1991, p. 324, ex. 268b)

Here the allative nominal has a special role designating the interlocutor argument of *wangka-mi*. In addition, there is a small class of Warlpiri ditransitives, including verbs of physical transfer and transfer of information (Simpson 1991, pp. 338–339). These take absolutive and dative arguments, with only the dative registered on the auxiliary. But if the dative is replaced by an allative argument, the absolutive is able to be registered. Thus allative arguments are selected by a class of verbs to designate individuals participating in the event denoted by the verb; they are distinct from the general use of allatives as spatial adjuncts.

Such instances of allative case are not explained by Jelinek's (1984, p. 63) theory: "While Primary L-case marked nominals *must* be coindexed with a clitic verbal argument, nominals with *only* Secondary L-case cannot be. Primary L-case nominals are thus linked with an element bearing a θ -role assigned by the verb, and Secondary (only) L-case nominals are not." Jelinek analyzes allative case NPs in Warlpiri as ad-sentential adjuncts. One might think of analyzing these allative arguments as a special Primary L-case linked to a zero clitic, but zero clitics have paradigmatic restrictions in Warlpiri that prevent this tack as a general solution to the problem of unregistered arguments (Section 4.4).

How does the dual structure analysis explain these differences in interpretation between argument and adjunct NPs? Firstly, on Simpson's account, each lexical predicator determines an optional null pronominal for each argument in its predicate argument structure. (The null pronominal appears in the functional structure of the predicator, not in the c-struct-

ture.) This null pronominal is undifferentiated for person or number. The auxiliary agreement markers provide person and number agreement features for subjects and objects, but are not themselves pronominal clitic arguments. Hence they can co-occur with agreeing NP *arguments*, which may be definite or indefinite. When NP arguments are omitted, the lexically specified null pronominals provide the definite pronominal interpretation.

Secondly, the dual structure model allows for a possibility which is not available in Jelinek's framework. Because of the many-to-one correspondence between the parallel c- and f-structures, in violation of the projection principle, true discontinuous constituents are allowed. The principle of functional uniqueness, together with the free association of functions with constituents of the non-projective S node, can create a single functional constituent in f-structure corresponding to a 'scattered' set of c-structure nodes. Such a constituent will have the 'merged' interpretation. On the other hand, the introduction of null pronominals by argument-taking predicates, together with the attributive interpretation available to (virtually) all nominals, also allows for the unmerged interpretation. Just as in Jelinek's analysis, nominals in Warlpiri can be interpreted as adnominal adjuncts to these null pronominal arguments. But unlike Jelinek's pronominals, these null pronominals are optional, allowing for true NP arguments. These NP arguments may also have adnominal adjuncts, giving an unmerged interpretation.

Finally, on Simpson's account, NPs are arguments as well as adjuncts in Warlpiri. Not all NP arguments are registered on the auxiliary. For example the verb 'speak' and ditransitive verbs may have an allative argument, which is not interpreted as a spatial adjunct.

Before leaving the issue of differences in interpretation between adjuncts and arguments, we must consider an important proposal recently advanced by Jelinek (1993a, 1994) *in favor* of the pronominal argument hypothesis, based on the interpretation of NPs (or DPs). Jelinek's argument refers to a crosslinguistic division of quantifiers into D-quantification and A-quantification types (Bach et al. 1994). D-quantifiers are quantifiers that are syntactically determiners, such as *every*, *each*, *most*, and *no* in English; D-quantifiers are associated with NPs in a single constituent. A-quantifiers include adverbs, auxiliaries, and other elements associated with VPs. A-quantifiers are semantically interpreted as unselective quantifiers (Lewis 1975), which may bind multiple NP arguments in a clause.

Jelinek's argument is based on the assumption (cf. Baker 1994) that D-quantifiers cannot appear in non-argument positions – as dislocated topics, for example:

- (28)a. *Every/no fish, it swam.
 b. *They swam, most/few fish.

In pronominal argument languages, by hypothesis, no DPs occur in argument positions, because the bound pronominals are the arguments; hence, the pronominal argument model predicts the absence of D-quantifiers by the assumption just given. Jelinek observes that the languages she proposes to be pronominal argument languages do in fact lack D-quantifiers – a typological implication explained by these assumptions. There may be non-pronominal argument languages that also happen to lack D-quantifiers (having nominals in argument positions); but there are no pronominal argument languages that have D-quantifiers.

In favor of the pronominal argument analysis of Warlpiri, Jelinek (1993a) cites Bittner and Hale's (1994) evidence that Warlpiri lacks a functional category D; Warlpiri quantifiers, they argue, are nominals having exactly the same range of interpretation as other nominals. (Determiners also are nominals in Warlpiri, according to Bittner and Hale.) While this fact does not entail that Warlpiri is a pronominal argument language, the pronominal argument model would predict it. (Interestingly, however, Bittner and Hale (to appear) adopt the analysis of Warlpiri NPs (or 'KPs') as *arguments* in order to explain the ergative case-marking patterns within their theory of case.)

The problem with this line of argument is that its basic assumption is untrue. D-quantifiers *can* appear in non-argument positions as dislocated topics – when they are cross-referenced by e-type pronouns (Evans 1980; Heim 1990). With sufficient descriptive content, it is possible to have dislocated quantificational phrase topics in English; thus (29b) contrasts with (29a) (Bresnan 1995b; Rizzi 1986, p. 395 makes a similar observation for Italian):

- (29)a. *Everyone, she tells him her life story.
 b. Every man she meets, she tells him her life story.
 c. *No man she meets, she tells him her life story.

As (29c) indicates, the pronouns in cases like (29b) are e-type pronouns, referring to the set that satisfies the topic phrase. When the set is empty (as in (29c)), they cannot refer, though binding of pronouns by negative quantifiers is of course possible (e.g. *No man she meets wants her to tell him her life story*). Similarly, quantificational phrases can be topics in Chicheŵa with an e-type interpretation of the bound pronominal object (which is **-mu-** in (30)) (Bresnan 1995b):

- (30) Mu-nthu á lí yěense ndí-ma-mu-lemekêza.
1-person 1.every i.sg.SUB-PRES.HAB-1.OBJ-respect
 Lit.: Every person, I respect him.

If both pronouns and bound pronominal arguments permit an e-type interpretation that allows reference to D-quantified nominals in topic positions, there is no reason that D-quantifiers should not appear in pronominal argument languages. Indeed, syntactic D-type quantifiers appear in Mohawk, which Baker (1994) argues to be a pronominal argument language, and in Navajo (Speas 1990, p. 213), which Jelinek (1990) analyzes as a pronominal argument language. (The semantic relations of quantifiers to pronominals appear to differ between the two languages: Baker 1994 reports that weak crossover violations with quantifiers are absent in Mohawk, while Speas 1990 reports they are present in Navajo.)

We must conclude that the pronominal argument model does not restrict the syntactic type of quantifiers in a language (D-type or A-type), though it does bear on the semantic interpretation of pronominals (bound or e-type) cross-referencing these quantifiers.

4.2. *Case Frames are Lexically Determined*

Following Hale's (1982) observations, Simpson (1991, pp. 103ff) shows that the case frames of verbs in Warlpiri depend upon semantic verb classes: [t]hus, the subject of a two-place predicate is Ergative if it has the semantic role of Agent or Perceiver, and Absolutive if it has a non-Actor, non-Perceiver role such as Undergoer." However, case is not always semantically predictable. Simpson (1991, p. 103, n. 11) notes that two transitive verbs meaning 'covet' differ in their case frames, one taking an absolutive subject and a dative object, the other taking an ergative subject and an absolutive object. Moreover, not all intransitive verbs take absolutive subjects. Cognate object verbs, as Simpson (1991, pp. 333–334) observes, can take ergative case when used intransitively: "[v]erbs of performance are typical examples of verbs that, cross-linguistically, tend to have cognate objects. In Warlpiri, they have Ergative subjects, and retain this case, even when there is no understood object. Unlike other Ergative verbs, they alternate between being one place and two-place predicates" (see also Austin 1982). An example is given in (31).

- (31) Ngarrka-ngku =ka (purlapa) yinpa-rni.
man-ERG PRES corroborree.ABS sing-NPAST
 The man is singing (a corroborree).
 (Simpson 1991, p. 344, ex. 299)

Jelinek's case compatibility rules (see (22) above), by referring to "transitive", "intransitive" and "ditransitive" as properties of *sentences*, obscure the fact that the choice of L-cases appearing on NPs depends on the lexical type of the *verb* (or other predicator) of the sentence – something that we would normally expect of arguments, not adjuncts (see also Tsunoda 1981a).

The case-frame generalizations referred to in the previous paragraph hold even in non-finite phrases, where there are no auxiliaries to force case compatibility. This fact supports Simpson's idea that the verb itself carries the case-frame information (Simpson 1991, p. 103). In (32), for example, the infinitive verb 'take away' has the same absolutive-dative case frame it has when it is the finite verb of a main clause:

- (32) Kurdu-patu-rlu = lu nyanungu nyu-ngu, nyuntu-ku
child-PL-ERG-3plSUB he.ABS see-PAST you.SG-DAT
 ngaju punta-rninja-kurra.
I.ABS take away-INFINS-S = O
 The children saw him take me away from you.
 (Simpson 1991, p. 104, ex. 69)

The subject argument of most non-finite verbs is controlled, but speakers sometimes allow a subject adjunct to agree in case with the case that the verb would assign to an overt subject, as shown in (33), where the subject-oriented adverb appears in the ergative with the transitive verb:

- (33) Jarntu-ku = lpa-rna-rla wurruka-ngu,
dog-DAT-IMPERF-1sgSUB-DAT sneak up on-PAST
 kuyu yarnunjuku-rlu nga-rninja-kurra(-ku).
meat.ABS hungry-ERG eat-INFINS-S = O(-DAT)
 I sneaked up on the dog which was hungrily eating meat.
 (Simpson 1991, p. 144, ex. 115)

This case agreement pattern reflects the same generalization found in main

clauses.¹⁸ But Jelinek's proposed explanation, based on case compatibility conditions with auxiliary clitics, is inapplicable here, because there are no auxiliaries in infinitive structures. It would not suffice to postulate a null auxiliary with zero clitics for infinitives, because there is clear evidence against the presence of zero clitics in aux-less structures (Section 4.3).

In sum, the idea of case compatibility rules for coindexing nominal adjuncts with pronominal clitic arguments cannot explain the observed case patterns of nominals in Warlpiri as well as the idea that cases are lexically assigned by verbs to their NP arguments.

4.3. *Null Pronominals Occur in Aux-less Environments*

We have already observed that Warlpiri infinitive phrases lack auxiliaries. Null pronominals nevertheless occur in that context. Just as Simpson's analysis implies, these null pronominals are not restricted as to person or number (the agreement features carried by the auxiliary). Example (34) has an understood plural null object:¹⁹

- (34) Kurlarda **kala-lu-nganpa**
spear.ABS USIT-3plSUB-1plexclOBJ
 maja-rninja-rla yu-ngu.
straighten-INFIN-SERIAL give-PAST
 They would give us spears, after straightening (them_i).
 (Simpson 1991, p. 141, ex. 110)

Example (35) has an understood second person singular null object in the infinitive phrase:

¹⁸ Some non-infinite phrases allow overt subjects, which may appear in the dative case (or subject case of the non-finite verb (Laughren 1989)). The dative case could be understood in connection with the status of these infinitive verbs as nominalizations; across languages, nominalized verbs frequently show special subject cases, even where the verbal case is preserved on complements (see e.g. Neidle 1988).

¹⁹ Note that a parasitic gap is ruled out by the absence of 'movement' or extraction (Hale 1993).

- (35) Ngari = **ka-rna-ngku** yampi-mi
JUST PRES-1sgSUB-2sgOBJ leave-NPAST
 nyuntuju paka-rninja-wangu-rlu
you.SG.ABS-EUPH hit-INFIN-PRIV-ERG
 Jungarrayi-kirlangu ngumparna-kurlangu ngajulu-rlu-ju,
Jungarrayi-POSS brother in law-POSS I-ERG-EUPH
 Japaljarri.
Japaljarri.ABS
 Japaljarri, I'm just leaving you without beating (you) who be-
 long to Jungarrayi my senior brother-in-law.
 (Simpson 1991, p. 143, ex. 113)

Thus a pronominal interpretation arises independently of the presence of the auxiliary in Warlpiri.

4.4. *There Are Unregistered Arguments*

The structure of the Warlpiri auxiliary is described in detail by Hale (1973), who lists the full inventory of subject and object clitics for all persons and numbers. The third person singular subject and object clitics have a zero realization; all other person-number combinations are expressed by overt morphemes. Now Warlpiri has unregistered NP arguments which correspond to no auxiliary element, whether overt or zero. These occur with allatives, as we saw above (example (27)), and with cognate object verbs that take absolutive subjects. One such verb, *wangka-mi* 'talk', is ditransitive, and Simpson (1991, p. 346) observes that it never allows agreement of the cognate object with the auxiliary.²⁰

- (36) Yimi-jarra =**ka-rna-palangu** wangka-mi.
language-DUAL.ABS PRES-1sgSUB-3duOBJ talk-PAST
 I speak to them two in two languages.
 (Simpson 1991, p. 346, ex. 305)

Sentence (36) *cannot* mean *I speak two languages*; the dual auxiliary marker can only be interpreted with the (understood) dative object.

In general, only one of the object arguments of ditransitives can be registered on the auxiliary. Jelinek (1904, p. 56) explains this consistently

²⁰ The auxiliary is glossed incorrectly in Simpson (1991) (Jane Simpson p.c., January 12, 1994) and corrected here.

with the pronominal argument hypothesis by assuming that there are two object clitic positions – when the dative clitic is present, a zero morpheme accusative third person clitic is also present. However, zero third person accusative in Warlpiri codes *singular* number, and is an alternative to overt clitics for dual and plural inanimates (Hale 1973; Perlmutter 1971, pp. 91–92). Jelinek’s proposal therefore cannot explain the absence of registration of the cognate object in (36); even though it is dual it cannot, even optionally, be cross-referenced by the clitic *-palangu*. Thus the cognate object *language* is an NP argument that corresponds to no pronominal clitic or agreement marker. (See Hale 1973, p. 333, ex. (59), for a similar example involving an animate object, which is slightly more restricted.) We will see in 6.1 below further instances of lack of registration of arguments in other Australian languages, as well as examples where animacy of the free NPs is relevant in determining which argument is coded. What this evidence shows is that we cannot use a zero pronominal (which has specific person and number values in a paradigmatic system) as a general explanation for non-registration of arguments. Could Warlpiri then have a mixed system of bound pronominal arguments and (unregistered) NP arguments? None of the works we have consulted on the syntax of Warlpiri reports any difference in word order, null anaphora, or discontinuous NP phenomena for unregistered NPs, and we find all three phenomena in aux-less examples such as (35).

As we see, evidence from the semantic interpretation of NPs, lexically governed case patterns, the distribution of null pronominals in aux-less environments, and the occurrence of NP arguments unregistered in the auxiliary indicates that in Warlpiri itself NP arguments of the verb should not be reanalysed as adnominal adjuncts to pronominal clitics. This evidence favors the dual structure model over the pronominal argument model for Warlpiri. Even more striking evidence comes from Jiwarli, which shares Warlpiri’s non-configurational properties but lacks an auxiliary and pronominal clitic-agreement system altogether.

5. JIWARLI

Jiwarli is an Aboriginal language traditionally spoken in the northwest of Western Australia, inland from the town of Carnarvon. It is closely related to its neighbours: Thiin, Warriyangka, and Tharrkari (comprising the Mantharta subgroup – see Austin 1981a, 1988), and distantly related to

Warlpiri (O'Grady et al. 1966).²¹ Jiwarli shares many syntactic characteristics with Warlpiri – ergative case, the absence of passive, nominalized adjunct verbs marked for switch reference or subject-object control, word-level case marking, paratactic relativization, nominal rather than determiner (D) quantifiers, and an identical inventory of syntactic X^0 categories (N, V, but not A or P), among others. Except for lacking overt pronominal clitics and an auxiliary, Jiwarli shows all of the characteristics of Warlpiri that Jelinek (1984) associates with W-type non-configurationality: split ergativity, discontinuous nominal expressions, lack of evidence for a VP, null anaphora, and pragmatically-conditioned word order (see Austin in press).

Morphologically, Jiwarli lacks verbal agreement marking and has a system of case marking of the split-ergative type (see Dixon 1979, 1994; Silverstein 1976); formal marking shows syncretism according to inherent lexical content (animacy) of the marked nominal. The first person singular pronoun *ngatha* (and optionally the second person pronoun *nhurra*)²² inflect on a nominative-accusative pattern, while inanimate nominals and demonstratives inflect ergative-absolutive. An other nominals have three distinct forms for transitive subject, intransitive subject, and transitive object functions. In addition to these core cases, there are cases with semantic functions: dative, locative, allative, and ablative (see Austin 1992, 1995, for details).

In Jiwarli, as in Warlpiri, nominals understood to be a single semantic constituent (corresponding to a notional noun phrase) may appear adjacent, or be separated by other clausal material. However, in Jiwarli *all* nominals bear case regardless of whether they are adjacent or separated; in contrast, Warlpiri NPs have the option of phrase-final case marking as we observed in Section 1. Ergative and accusative case are formally coded depending on the animacy of the nominal referent. The following examples show this:

²¹ The first author worked intensively on Jiwarli between 1981 and 1985 with the last fluent speaker, Jack Butler, who died in 1986. The Jiwarli corpus consists of some seventy texts plus a large amount of elicited data. G. N. O'Grady and Terry J. Klokeid collected material on Thiin, Warriyangka, and Tharrkari in 1967, including thirty texts and hundreds of pages of field notes. Austin recorded further Tharrkari text and elicited data in November 1994. Copies of all of this data is available for study at the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra. In the example sentences below, a source for each is given: T prefaces the text number, N the notebook number (for elicited sentences), and s precedes the sentence number.

²² In Tharrkari and Thiin *nhurra* obligatorily inflects nominative-accusative.

- (37) Piji-nha mantharta-nha wanka-rla-rninyja
many-ACC man-ACC live-MAKE-PAST
 ngulu-pa martaru-lu.
that.ERG-SPEC gum-ERG
 That gum has cured many people. (JIT52s16)
- (38) Yawamu wantha-rrartu ngatha.
windbreak.ABS put-USIT I.NOM
 I used to put down a windbreak. (JIT61s40)
- (39) Jimpingka-rninyja ngatha-thu wirta-nyjarri-nha.
carry on back-PAST I.NOM-TOP boy-PL-ACC
 I carried the boys on my back. (JIT47s121)
- (40) Warri nhanya-ra ngatha-nha ngunhi-pa kajalpu-lu.
not see-FUT I-ACC three.LOC-SPEC emu-ERG
 The emu will not see me there. (JIT51s11)

Example (37) shows an animate object with accusative case marking on each word, together with an ergatively marked demonstrative and inanimate noun serving as transitive subject. Example (38) shows unmarked absolutive case for an inanimate object and unmarked nominative case for a 1sg pronominal transitive subject. Example (39) illustrates nominative 1sg transitive subject plus accusative animate object, while (40) shows accusative 1sg object and ergative animate transitive subject.

Discontinuous nominals are seen in:²³

- (41) Juru-ngku ngatha-nha kulypa-jipa-rninyja parna.
sun-ERG I-ACC be sore-TR-PAST head.ABS
 The sun made my head sore. (JIT19s3)

²³ Example (41) contains an instance of body-part possession. Body parts are treated as inanimate in Mantharta languages (and hence the transitive object *parna* 'head' is in unmarked absolutive case); the possessor is in apposition to the body part and bears accusative case because it is animate.

- (42) Kutharra-rru ngunha ngurnta-inha jiluru.
two.ABS-NOW that.ABS lie-PRES egg.ABS
 Now those two eggs are lying (there).

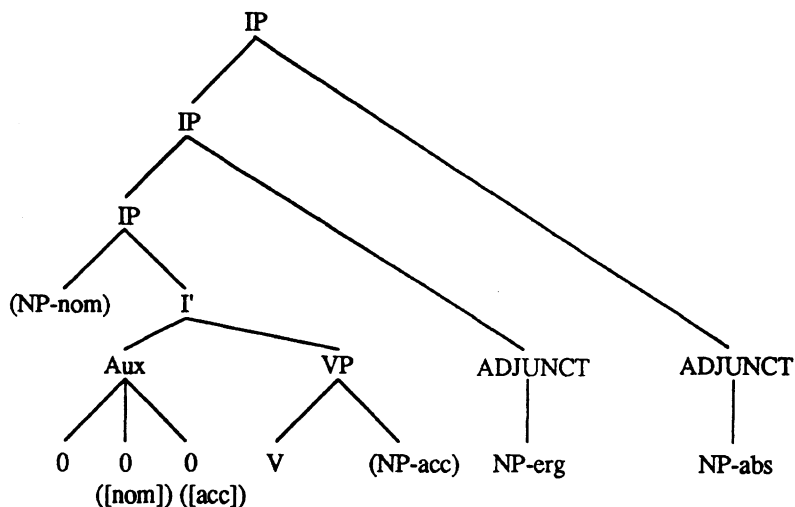
(JIT41s9)

- (43) Karla wantha-nma-rni jampa juma.
fire.ABS give-IMPER-HENCE light.ABS small.ABS
 Give me a small fire light.

(JIT61s15)

Jelinek (1984, p. 70) notes the existence of Australian languages with these characteristics and says that they “may also be W-type, with only independent pronouns serving as verbal arguments, if an analysis of ZERO third person pronouns co-occurring with nominals can be justified.” This proposal is more a tentative suggestion than a well-developed theory of these languages. Nevertheless, in view of the wide-spread acceptance of Jelinek’s model of non-configurationality, it is important to examine the limits of its applicability. If we extend this suggested analysis to Jiwarli, free first and second person singular pronouns would be arguments directly assigned nominative case as subjects of the verb, while all other subject nominals would be adjuncts taking ergative case (that must meet case compatibility requirements with a zero subject pronominal, possibly attached to a zero auxiliary base). Free first and second person singular pronouns and perhaps also animate nominals assigned accusative case would be directly governed by the verb;²⁴ demonstratives and inanimates would always be adjuncts since they take ergative and absolutive case. This would suggest a syntactic structure for Jiwarli of the following type (cf. Jelinek 1984, p. 50, ex. 28):

²⁴ For Jelinek (1984, pp. 66–67) NP adjuncts (her CPPs) may, but need not, differ in case from arguments.



This analysis makes several testable predictions about word order, the occurrence of zeros, and case-marking of adjuncts. Specifically, it predicts that (1) the (first and second person) nominative and accusative independent pronouns should show word order constraints arising from their occurrence as argument NPs of the verb in a configurational structure; (2) zero pronoun arguments hypothesized to co-occur with other nominals should be third person (complementary to the overt independent pronoun arguments); (3) the free ordering and splitting of nominals should correlate with other constraints on the distribution of zero pronouns; and (4) ergative-absolutive nominals should show the case compatibility patterns of adjuncts. It turns out that all four predictions are false.

5.1. *No Word Order Constraints on Nominative-Accusative Pronouns*

If accusative case marking reflects direct verbal government, as this analysis would claim, then the pronouns that bear this marking (and possibly all accusative-marked nominals) should be subject to the usual requirements of government, including locality.²⁵ Thus, there should be a constraint on word order when first and second person pronouns act as

²⁵ Goddard (1982) has proposed that split-ergative case marking on free NPs (as exemplified by Jiwarli) is a matter of syncretism in the morphological realisation of cases, not a difference in case features. That is, all nominals un Jiwarli would inflect for the three core cases: nominative, accusative, and ergative, with the realisations of these cases differing according to the nominal type. Such an approach would present even greater problems for a Jelinek-style account since now all intransitive subjects (nominatives) and transitive objects (accusatives) should show the locality effects of government by their case assigners.

subjects, namely that they cannot intervene between the verb and its (accusatively case-marked) sister. Thus VSO word order should be impossible when the subject is a 1/2sg pronoun. Jiwari texts do exemplify this order, however, as in:

- (44) Jimpingka-rminyja ngatha-thu wirta-nyjarri-nha.
carry on back-PAST I.NOM-TOP boy-PL-ACC
 I carried the boys on my back.
 (JIT47s121)

A Tharrkari example is the following:

- (45) Pudhi-langu ngadha nhurra-nha wana-ku.
hit-MIGHT I.NOM you.SG-ACC fighting stick-ERG
 I might hit you with a fighting stick.
 (JDPAN1p73s3)

There is no reason to discriminate between nominative-marked pronouns and other nominals for purposes of word order – they show the same distribution as all other nominals. In other words, even the nominative-accusative pronominal arguments show no signs of configurational constituent structure.

5.2. No Third Person Restriction on Zero Pronouns

Nominals in Jiwari are freely omissible in texts and it is relatively rare to find, for example, a transitive verb and its associated argument nominals all overtly expressed. Thus, in a count of thirteen Jiwari texts (comprising over 370 sentences) more than 70% of the transitive sentences have a missing argument. Missing nominals may be either unspecified (generic) subjects (as in (46), (49) and (51) below) or zero anaphors.

Jiwari zero anaphors may have third person reference, as in the following examples (example (46) shows singular object, (47) shows third dual subject and third singular object):

- (46) Ngunha wirntu-rri-nyja. Ngapa-rninyja ngunha.
that.ABS dead-INCHOAT-PAST bury-PAST that.ABS
 Yalha-ngka wantha-rninyja.
ground-LOC put-PAST
 That one died. (They) buried him. (They) put (him) in the
 ground. (JIT44s3-5)

- (47) Kutharra-lu mikalyaji-lu-kayi kapakurta-lu
two-ERG but-ERG-FIRST spotted nightjar-ERG
 pinya-nyja. Kalya-rru pinya-nyja.
spear-PAST armpit.ABS-NOW spear-PAST
 Wirntupinya-nyja-rru.
kill-PAST-NOW
 The two of them speared (him), but first and then nightjar.
 (They) speared (him) in the armpit. (They) killed (him).
 (JIT42s23-25)

Zero anaphors referring to other persons are also possible. An instance of first person singular subject occurs in (48), and first person plural in (49):

- (48) Warri yana-artu ngatha kartaju-la. Yana-artu ngulha
not go-USIT I.NOM night-LOC go-USIT NOTHING
 jurrinypi-rnu. Ngurru-martu-la kumpa-artu.
walk about-IMPERFSS old man-PAUC-LOC sit-USIT
 I never used to go in the night. (I) never used to go walking
 about. (I) used to live with the old men. (JIT47s44-6)

- (49) Warri wanka-rri-ra parru ngapa-rninyjaparnti
not alive-INCHOAT-FUT AGAIN bury-PERFDS
 nganthurra-lu. Ngapa-lka mantharta marrungku.
we.PL-ERG bury-FUT person.ABS for ever
 (People) will not become alive again after we have buried
 (them). (We) will bury people for ever. (JIT44s17-18)

in reminiscence narratives where the understood subject is first person singular), and just two instances where the transitive subject is missing – one of these is an imperative, and the other involves an unspecified generic subject (example (51) below). There are also only three instances where a transitive verb lacks an object (the transitive subject is present in two of these). In these examples the missing object is the planned subject-matter of the text, which is anaphorically referenced in its opening sentence. An example is the first sentence of Text 54 which is a discussion of the traditional method of preparation of the tuber *waringapu*:

- (51) Mika-ngka wantha-rrkarringu.
 dish-LOC put-INTENT
 (You) put (it) in a dish.
(JIT54s1)

Given this restriction on the null pronominals, we might expect text-initial sentences to lack syntactically free word order and NP splitting.²⁶ But this is not what we find. We looked at the initial sentence of 60 Jiwarli texts and discovered that split NPs *are* found in initial clauses, as in:

- (52) Tharrarrayil-pa-nha nhaa-lu ngulha
 bower bird-PHON-ACC something-ERG NOTHING
 parna puthi-rninyja.
 head.ABS hit-PAST
 Something hit bower bird on the head.
(JIT66s1)

Similarly, in text-initial sentences word order is *not* fixed. There is a strong preference for Intransitive Subject followed by an Intransitive Verb (50 percent of instances show this), however other orders do occur, including VS, SOV, SVO and OVS. For transitive clauses no order predominates.

Could a non-argument NP (linked to a zero pronoun) be itself serving as the topic in text-initial sentences? This possibility seems unlikely in view of the discourse function of such structures in cases where they are uncontroversially present. In general, appositive adjunct NPs to pronouns are strange introducers of texts (*He, althe doctor, . . .*), and topical left dislocations serve to resume a topic previously introduced or to switch topics (*Once there was a wizard. [text] Now the wizard, he lived in Af-*

²⁶ We owe the inspiration for this argument to Mark Baker.

rica . . .) (Givón 1976). A text-initial dislocation is odd indeed: *The/A wizard, he lived in Africa . . .*

Thus, we see that the non-configurationality properties of Jiwarli do not correlate with the restrictions on the appearance of anaphoric zeros. This result is inconsistent with the pronominal argument analysis.

5.4. Different Case-Marking Patterns of Argument NPs and True Adjuncts

A central idea of Jelinek's analysis is that split ergative case marking reflects a difference in function between adjunct and argument nominals, with nominative-accusative pronouns (overt for first and second person singular and zero elsewhere) being governed by the verb and auxiliary in a configurational structure, and ergative-absolutive nominals being adjuncts loosely linked by case compatibility to these pronominal arguments. We have already seen (Sections 5.1–5.3) that the overt and null pronominal arguments of Jiwarli do not have the properties of word order, person-number features, and textual distribution expected under this analysis. In this section we will show that absolutive nominals do not have the case compatibility patterns of true adjuncts.

Jiwarli (like Warlpiri – see Simpson 1991, Bittner and Hale to appear) has several kinds of true adjuncts, including manner adverbs, deontic modal particles, and temporal nominals (marked with the temporal post-inflection *-purra*). There are also several types of dependent clauses that can be adjoined to a matrix clause (never appearing embedded within it). None of these adjuncts can ever serve as arguments of a predicate; they provide adverbial and adnominal modification of the sentence in which they appear.

Adjuncts in the Mantharta languages are marked for case and agree with the nominal they are predicated of. Thus, adjuncts predicated of a dative or locative will take the relevant case affix, as in (the adjunct is in bold face):

- (53) Kumpa-ja-rru ngurru-nyjarri-la **wanka-martu-la-purra**.
live-PAST-NOW old man-PL-LOC alive-PAUC-LOC-TIME
 (I) lived with the old men when they were alive. (JIT61s44)
- (54) Ngatha nhukura juma-wu **murtu-wu-purra**.
I.NOM knowing child-DAT baby-DAT-TIME
 I knew the child when he was a baby. (JIT70s30)

For core grammatical functions, adjuncts show a three-way system of coding. They are unmarked absolutive when the verb is intransitive, as in:

- (55) **Tharti** yana-ma-rni.
quickly.ABS go-IMPER-HENCE
 Come quickly!
 (JBPAN9p139s6)

- (56) **Mantharta** kuwarti-thu **pampa-rru** wangka-inha-thu
person.ABS now-TOP cannot.ABS-NOW speak-PRES-TOP
 nganthurra-ju wirta-nyjarri-la.
we.PL-EXCL.NOM boy-PL-LOC
 Nowadays we people cannot talk to the boys.
 (JIT47s113)

- (57) **Ngatha** kumpa-artu ngurnta-nhu pampura-nyjarri-la
I.NOM sit-USIT lie-IMPERFSS blind-PL-LOC
juma-purra-thu.
child.ABS-TIME-TOP
 I used to sleep with the blind people when I was a child.
 (JIT55s38)

When the verb is transitive the adjuncts take ergative case, regardless of the case coding of the subject:

- (58) **Tharti-ngku** malha-nma ngunha kurtangara
quickly-ERG press on-IMPER that.ABS whirlwind.ABS
 puni-ya-rni-rru.
go-IMPERFDS-HENCE-NOW
 Press (them) down quickly because there is a whirlwind coming.
 (JBPAN9p139s4)

- (59) **Pampa-ngku** yanga-rninyja wuru-jaka-lu.
cannot-ERG chase-PAST stick-COMIT-ERG
 (I) couldn't chase (them) with a stick.
 (JBPAN13p20s2)

- (60) Thurnti ngunha-pa-thu thika-laartu
vegetable food.ABS that.ABS-SPEC-TOP eat-USIT
 ngatha **juma-ngku-purra.**
I.NOM child-ERG-TIME
 I used to eat those vegetables when I was a child.
(JIT53s4)

Temporal adjuncts can be predicated of the transitive object in Jiwarli, and then they must bear *accusative* case:

- (61) Ngatha-nha tharla-rninyja warrara-lu
I-ACC feed-PAST wild potato-ERG
 thurnti-ngku **juma-nha-purra-thu.**
vegetable food-ERG child-ACC-TIME-TOP
 (They) used to feed me with wild potatoes when I was a child.
(JIT53s11)

These examples illustrate that true adjuncts (adverbs, particles, and temporal nominals) behave differently with respect to case marking than do the subject and object arguments of a verb. True adjuncts invariably take ergative-absolutive-accusative case markers for core grammatical functions, while arguments show locally determined case coding that reflects the interaction between grammatical functions and person-animacy features.

Further evidence to support this difference between arguments and adjuncts comes from the syntax of dependent clauses. The Mantharta languages have a type of adjunct dependent clause which codes relative present tense (a situation taking place at the same time as the main clause situation) and imperfective aspect. These clauses generally translate into English as adverbial or adnominal modifiers. They are never complements of the verb. These dependent clauses have a missing subject and the dependent verb is marked for switch-reference, i.e. referential identity or difference of subjects in the two linked clauses. When the matrix clause is intransitive the adjunct imperfective clause carries no case marker; however, when the matrix clause is transitive the adjunct clause takes ergative case. Thus, compare (62) with (63) and (64):

- (62) Walangu ngunha kumpa-ira ngunhi-rru-pa
bird.ABS that.ABS sit-FUT three.LOC-NOW-SPEC
 papa-wu **paja-rnu.**
water-DAT drink-IMPERFSS
 The birds will sit there drinking the water.
 (JIT57s14)
- (63) Mantharta-lu kurrpirli-nha pinya-nyja
man-ERG kangaroo-ACC spear-PAST
yanga-rnu-ru.
chase-IMPERFSS-ERG
 The man speared the kangaroo as (he) chased (it).
 (JBPAN11p31s2)
- (64) Nhurra-kara-lu thika-nma **yarrukarri-ngu-ru-thu.**
you-PL-ERG eat-IMPER want-IMPERFSS-ERG-TOP
 You all eat (it) if (you) want (it).
 (JBPAN11p39s3)

This ergative case-marking applies even when the matrix subject is a first person singular pronoun:²⁷

- (65) Ngatha thuthu wantha-rninyja pirru
I.NOM dog.ABS give-PAST meat.ABS
yana-ngu-ru.
go-IMPERFSS-ERG
 I gave the dog meat when (I) was going away.
 (AEOGN1p40s2)

This type of case difference between the nominative pronoun argument and the ergative adjunct is a central motivation for Jelinek's pronominal argument hypothesis.

Jiwarli also has dependent clauses which can function as adjuncts of non-subject arguments. In imperfective-different subject clauses the dependent subject is typically unexpressed and understood to be anaphoric to a non-subject nominal in the matrix clause; the dependent verb will then bear a case marker in agreement with the (non-subject) function of the coreferen-

²⁷ Example (65) is from Warriyangka, there being no relevant instances in the Jiwarli corpus.

tial nominal. The following are some examples, illustrating dative and locative agreement:

- (66) Karla-rla-laartu pulhuwa-la-rru ngurnu-pa
fire-MAKE-USIT cold-LOC-NOW that.DAT-SPEC
pulhuwa-nguli-ya-ngu.
cold-PSYCH-IMPERFDS-DAT
 In the cold (I) used to make a fire for them when (they) felt cold.
 (JIT61s38)
- (67) Wuru ngunha tharrpa-rninyja ngarti-ngka kajalpu-la
stick.ABS that.ABS insert.PAST inside-LOC emu-LOC
 ngarri-ngka **ngurnta-iniya-la.**
ashes-LOC lie-IMPERFDS-LOC
 (He) inserted the stick inside the emu lying in the ashes.
 (JIT40s9)

The case agreement here is consistent with the adjunct status of these clauses. However, dependent clauses whose subject is anaphoric to the matrix object take *accusative* case, not absolutive:

- (68) Tharla-nma yinha julyu-nha
feed-IMPER this.ABS old man-ACC
kamu-rri-ya-nha.
hunger-INCHOAT-IMPERFDS-ACC
 Feed this old man who is becoming hungry!
 (JIT13s1)

This is true even when the nominal triggering agreement is in the absolutive, as in:²⁸

- (69) Kuru-jipa-nma ngunha **ngurnta-iniya-nha**
eye-CAUS-IMPER that.ABS lie-IMPERFDS-ACC
 nguwan-ma.
sleep.NOM-PHON
 Wake up that one lying asleep.
 (JBADN1p11s2)

²⁸ Examples (70) and (71) are from Tharrkari. For (71) recall that body parts are treated as inanimate for case coding.

- (70) Nhurra jurrura-nma ngunha **kupa-iniya-nha.**
you.NOM point-IMPER that.ABS sit-IMPERFDS-ACC
 You point to one who is sitting down.
 (Klokeid 1969, p. 40)
- (71) Ngadha yarruwarri-a yinha pagaja-rni-larringu
I.NOM want-PRES this.ABS good-CAUS-INTENT
 mara **kujpa-iniya-nha.**
finger.ABS be sore-IMPERFDS-ACC
 I want to make this finger well because it's sore.
 (CYTKN1p75s3)

or is a zero anaphor, as in:

- (72) Ngatha wantha-rninyja-rru pirru kamu
I.NOM give-PAST-NOW meat.ABS hungry.NOM
kumpa-iniya-nha.
sit-IMPERFDS-ACC
 I gave the meat (to the one) sitting down hungry.
 (JBADN1p18s7)

In (69)–(71), as in (65), there is a case difference between arguments and adjuncts, but it is the opposite of that expected under Jelinek's pronominal argument hypothesis. Firstly, it is the adjuncts that have accusative case, while the arguments are absolutive. Secondly, the arguments are not pronouns but nominals (demonstratives and body part nouns).

These facts pose a dilemma for the pronominal argument hypothesis. Either these absolutive nominals are arguments, in which case their non-configurational properties are unexplained. Or they are adjuncts, in which case split ergativity is unexplained. On the latter alternative, split case marking reflects the intrinsic features of nominals, and not a syntactic difference between arguments and adjuncts. This outcome removes a major explanatory advantage of Jelinek's analysis over others.

In summary, Jiwarli shows none of the properties predicted by the pronominal argument hypothesis: the nominative and accusative pronouns betray no signs of a core configurational phrase structure; the hypothesized zero pronoun arguments do not show the expected paradigmatic person-number features complementary to the overt nominative-accusative pronouns; the distribution of NP configurationality does not correlate with textual constraints on the distribution of zero pronouns; and argument

nominals do not show the characteristic case compatibility patterns of true adjuncts.

It follows that Jiwarli cannot be an instance of W-type non-configurationality, in Jelinek's (1984) terminology. Indeed, Jelinek (1984, pp. 71–78) observes that there may be other sources of non-configurationality, citing Japanese as an example in which null arguments cannot be identified with zero pronouns because of their ambiguous and context-dependent interpretation. According to Jelinek, Japanese nominals are arguments of the verb whose free word order and omissibility derive from other factors than adjunct status. Could we not simply say, then, that Jiwarli has another type of non-configurationality (perhaps 'J-type') distinct from the W-type exemplified by Warlpiri?

This conclusion is both theoretically and typologically unattractive. First, as we have shown in Section 4, Warlpiri itself has syntactic properties inconsistent with W-type languages, including lexically governed case on nominals, nominal arguments for which there is no auxiliary clitic, and ambiguous and context-dependent null anaphora occurring in aux-less environments. All of these properties of Warlpiri are shared by Jiwarli. Second, distinctive syntactic properties of Warlpiri which are derived by Jelinek from the pronominal argument hypothesis – split ergative case marking, discontinuous NPs, and the absence of D-quantifiers – are also shared by Jiwarli but not by Japanese.

In contrast, these results are just what we would expect from a dual structure analysis along the lines of that presented in Section 2. Jiwarli simply lacks the IP structure of Warlpiri, having only the non-projective S as the top-most node. This accounts for its lack of an auxiliary and pronominal enclitics or agreement markers, which constitute the I⁰. All of the other syntactic properties discussed here follow from basic analyses parallel to those already proposed for Warlpiri: there is no VP in main clauses; null pronominals arise from lexical predicate argument structures unlicensed by agreement features; and split NPs are discontinuous c-structure nominals that correspond to functional units in f-structure.

Unlike the pronominal argument hypothesis, the dual structure model implies that these non-configurationality properties do not derive from a single formal characteristic of the languages in question. A cross-linguistic survey of Australian languages shows that this implication, too, is correct.

6. FURTHER CROSS-LINGUISTIC EVIDENCE FROM AUSTRALIAN LANGUAGES

We have seen from our comparison of Warlpiri and Jiwarli that the presence of bound pronominals (head-marking in the sense of Nichols 1986) does not correlate with other non-configurational characteristics of split-NPs, split ergative case marking, zero anaphora, and pragmatically conditioned word order. This is even clearer if we take a wider perspective and examine the distribution of these features in other Australian languages.

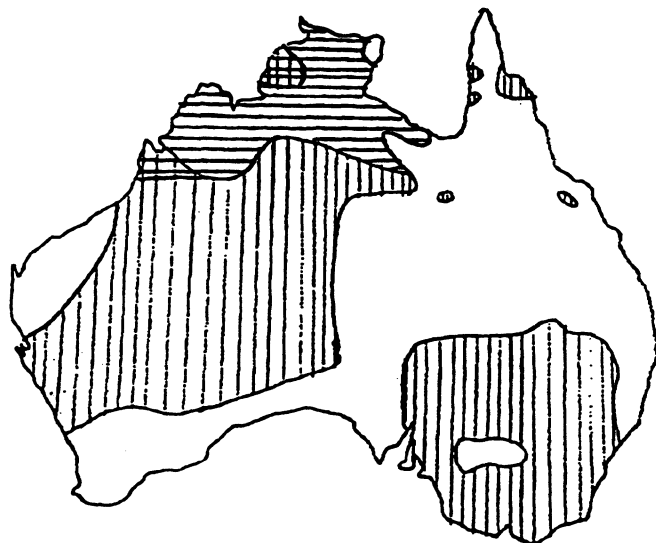
6.1. *Bound Pronominals*

Most Australian languages do have bound pronouns that attach to:



- a. the verb (regardless of position in the sentence); or
- b. the first constituent of the clause (regardless of category);
or
- c. an auxiliary (which follows the first constituent of the clause).

In Pama-Nyungan languages, spoken in the southern eight-tenths of the continent, the bound pronouns are *suffixes* or *enclitics*, but in non-Pama-Nyungan languages (spoken in the north) they are usually *prefixes* (in a few non-Pama-Nyungan languages the subject set are prefixes and the object set are suffixes).

Bound pronouns are *areally* distributed (see map, and Map 9 in Dixon 1980, p. 364, and Map 2 in Blake 1977, p. x) – there are two major blocks of bound suffixing languages: southeastern Australia and central-western Australia. Prefixing languages are restricted to the far north only. The isoglosses for bound suffixed pronouns run between dialects of a single language in some areas, e.g. southern Guwamu has verb suffix subject pronouns but the northern dialect lacks them (Austin and Wurm, in prep.) In addition, Breen (1981) reports that in the Margany-Gunya language of western Queensland Gunya has bound pronouns, but Margany lacks them; similarly Wemba-Wemba of western Victoria has them, but the dialectally related Madhi-Madhi lacks them – see Hercus 1969. Blake (1990, p. 58) notes that among the Warluwaric subgroup of languages spoken east of Warlpiri, Wagaya has bound pronouns that are “transparent abbreviations of the corresponding free forms” but Bularnu and Warluwara do not. Some languages have lost free pronouns entirely, e.g. Warnman affixes



Map: Bound pronouns in Australian Languages (after Dixon 1980; Blake 1977, 1990)

-  Suffixed bound pronouns
 Prefixed bound pronouns

bound pronouns to an invariant root *parra-* for emphatic pronoun reference (Dixon, 1980, p. 367; Thieberger, p.c.). Historically, bound suffixed pronouns are a later development in Pama-Nyungan, with more or less transparent formal connection between free pronoun forms and bound pronoun suffixes or enclitics in contemporary languages (Dixon 1980, pp. 365ff; 1994, p. 96).

In some languages the bound pronouns are obligatory in tensed clauses and code subject only, or subject and object. Typical systems in suffixing languages are formally nominative-accusative, though some languages have split-ergative suffixes (nominative-accusative in 1st and 2nd person, ergative-absolutive in 3rd person, as in Ngiyampaa (Donaldson 1980) and Malyangapa (Wurm p.c.), or ergative-nominative-accusative in 3rd person singular as in Wambaya (Nordlinger 1993a, b)).

In some languages, such as Ngiyampaa, bound pronouns are in complementary distribution with 1st and 2nd person free pronouns – a clause can contain either free pronouns or bound pronouns, but not both. There are no free third person pronouns, and suffixed pronouns can co-occur with free non-ergative nominals to code definiteness, e.g. 3sg *-na* indicates

definite S/O/dative. Word order is free and bound pronouns follow the first constituent of the clause (regardless of category).

Even in languages with obligatory bound pronouns, such as Warlpiri and its immediate neighbours, not all verb (subcategorised) arguments are represented in the pronominal cluster. Thus, as we saw in 4.4, in Warlpiri a dative is cross-referenced (if present) outranking the direct object of a transitive. In the neighbouring (and related) Walmatjarri (Hudson 1978, pp. 56–76; Dixon 1980, pp. 369–372) the non-subject bound pronoun cross-references a comitative (if present), else a dative (if present), else a direct object. The situation in Djaru (adjacent to Warlpiri and Walmatjarri and related to both, see Tsunoda 1981b) is even more complex: here there are just two pronominal clitic positions, subject and non-subject (cross-referencing direct object, dative, or locational arguments). When both locational and dative arguments are present, only the locational may be registered on the auxiliary; when locational and direct object or dative and direct object are both present, then an animacy hierarchy determines which argument is registered (see Tsunoda 1981b, pp. 144–146). Normally at least one non-subject argument of such clauses remains unregistered.

We see, then, that bound pronominals are an areal feature of Australian languages, and their presence or absence is not predictive of other syntactic or morphological characteristics.

6.2. *Zero Anaphora and Word Order*

The first author surveyed the descriptions of six other Australian languages (Table I) to examine the co-variation (if any) between the various nonconfigurationality characteristics. We also explored the issue of whether the presence of bound pronouns predicts the other characteristics, as the pronominal argument model asserts.

It is clear that a number of Australian languages are like Jiwari and its relatives in having all the Warlpiri-type features yet lacking bound pronouns, e.g. Mparntwe Arrernte (Wilkins 1988, 1989), Guugu Yimidhirr (Haviland 1979; Levinson 1987), Dyirbal (Dixon 1972), and Yidiny (Dixon 1977, 1992) are of this type. There are also languages such as Diyari (Austin 1981b) and Martuthunira (Dench 1993, and p.c.) which lack bound pronouns and have relatively fixed word order. Diyari and Martuthunira are alike in having zero anaphora, but differ in that Martuthunira does not show split-NP constructions. Pensalfini (1992) surveyed twenty Pama-Nyungan languages and discovered there to be no correlation between discontinuous NPs and free constituent order, and no strong correlation between freedom of constituent order and freedom of word order

Table I. Morpho-syntax typology of Australian aboriginal languages

	Walpiri		Western Desert		Jiwarli		Mparntwe Arrente	
Core cases	Ergative-absolutive		Split-ergative		Split-ergative		Split-ergative	
Affixation	N _{case}	N _{case}	N _{case}	N _{case}	N _{case}	N _{case}	N _{case}	N _{case}
Enclitic pronouns	Nominative-accusative		Nominative-accusative		None		None	
Null anaphora	Yes (3sg when AUX present)		Yes		Yes		Yes	
Discontinuous NPs	Yes		Yes		Yes		Yes	
Free word order	Yes		Yes		Yes		Yes	
Table I (continued)								
	Martuthunira		Yidiny		Dyirbal		Diyari	
Core cases	Nominative-accusative		Split-ergative		Split-ergative		Split-ergative	
Affixation	N _{case}	N _{case}	N _{case}	N _{case}	N _{case}	N _{case}	N _{case}	N _{case}
Enclitic pronouns	None		None		None		None	
Null anaphora	Yes		Yes		Yes (A only)		Yes	
Discontinuous NPs	No		Yes		Yes		Yes	
Free word order	No (SVO preferred)		Yes		Yes		No (SOV preferred)	

within the NP. Clearly, presence or absence of bound pronouns does not correlate with presence or absence of free word order or with split-NPs across Australia.

Free zero anaphora is also not a necessary correlate of other non-configurational properties. Thus, Dyirbal has free word order and split-NP constructions, yet according to Dixon (1972) only transitive subjects may be freely omitted with third person reference (transitive verbs in Dyirbal always require an object to be present).²⁹

We see here then that free word order and split-NP syntax do not necessarily entail free omission of third person arguments or syntactically free zero anaphora.

Table I summarises our findings.

7. CONCLUSIONS

In conclusion, we have shown that the pronominal argument hypothesis compares unfavorably to the dual structure analysis for non-configurationality in Australian Aboriginal languages. The clitic pronouns that Jelinek (1984) and others take to be the source of non-configurationality in Warlpiri are simply an areal feature of Australian languages that is independent of the characteristics of free word order, null anaphora, and split NPs. They do not provide the unifying explanation for nonconfigurationality of the Warlpiri type.

These results illustrate the importance of descriptive, typological, and areal studies for syntactic theory, and provide an interesting example of how theoretical economy and explanatory elegance are unreliable guides to truth.

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²⁹ In linked clauses zero anaphora is allowed, but only for intransitive subject and transitive object 'pivot' functions – see Dixon (1979).

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