AGREEMENT CONFIGURATIONS:

GRAMMATICAL RELATIONS IN MODULAR GRAMMAR

by

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B.A., Hampshire College
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Submitted to the Department of
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ABSTRACT

This thesis presents an analysis of the relationship between
grammatical agreement and so-called 'non-configurationality'. We
argue that the properties of non-configurational languages should be
made to follow from independently motivated principles of agreement.
We explore the contrast, discussed in Hale (1989), between languages
such as Navaho (Athapaskan) which permit cooccurrence of full noun
phrases and agreement inflection and languages which show
complementary distribution between these categories, such as Dogrib
(Athapaskan) and Irish (Celtic). We argue that the study of these
contrasts supports the analysis of non-configurationality presented in
Jelinek (1984) where agreement morphemes have argumental, theta-
marked status, in non-configurational languages.

We first introduce issues in the study of grammatical configurations
such as word order as induced by Case and thematic-role assignment
(Chapter 1). In Chapter 2, we review the literature on the issue of
non-configurationality and in Chapter 3, we follow Alexander (1986) in
arguing that no bivalent (two-valued) configurationality parameter can
account for observed configurational variance and we propose a four
valued opposition—the Case/Agreement distinction—which obviates
the need for a separate configurationality parameter. In Chapter 4, we
discuss the proper analysis of languages which show complementary
distribution between nominal arguments (NPs) and agreement
morphemes, arguing that the analysis is Hale (1989) cannot be
supported and, further, that this analysis conflicts with the analyses of
configurationality proposed in Jelinek (1984) and Hale (1983). We
argue that features of theta-theory provide a superior analysis of these
languages. In Chapter 5, we discuss two languages, Canela-Krahô and
Hixkaryana which cannot be subsumed under Hale's analysis.

Thesis Supervisor: Dr. Kenneth L. Hale
Title: Ferrari P. Ward Professor of Linguistics

"It is in vain to do with more what can be done with less."
William of Ockham

"Suave does what theirs does for less."
Television Ad

Harpo Marx on a visit to New York was plagued by representatives of charities wanting him to appear at benefits. One particularly persistent woman called Harpo twelve times in two days before he agreed to appear for her charity. Worried that Harpo might fail to show up, she went to his hotel to escort him personally. As they were leaving the phone began to ring. "Don't you want to go back and answer it?" the woman asked. "Why bother?" said Harpo, "it's undoubtedly you again."

I felt like this woman every time I slipped another paper under Ken Hale's door. What for me was the enjoyment of trying to understand Hixkaryana agreement, with constant reevaluation and shifting of theories, must have seemed to him very much like being caught in an earthquake. He never once said "What happened to the last theory?" I thank him for his patience and for keeping me so immersed with trees that I could not see the forest. His knowledge of languages is legend but his knowledge of language is equally deep. By bringing me back to the questions "How does English work, how does Navajo work" he led me to understand at least what I was proposing, if not Hixkaryana agreement—about which I will soon develop a completely new theory.

David Pesetsky's dissertation acknowledgements were four pages long. Because of this insightful contribution to MIT linguistics, even the verbose can seem ungrateful. This is thus his first contribution to this work. There are more. I had a class at UMass with David in my last year in college and now he is at MIT for my last year here. Both times I am sure that I would be a better linguist if I had met up with him earlier. Apart from his significant contributions to the content, any resemblance between the prose here and a Standard Average European language is due to David.

I have never met Morris Halle without feeling insecure. God help me if I ever do. I wouldn't say that he made my life a living Hell, but...he made my life a living Hell. For my first two years I never walked the halls of Building 20 without dread that Morris would appear from around a corner and summon me to his office. Two years later, nothing gave me greater pleasure than sitting in his office. Whether I learned something, or just built up my tolerance is left for the judgement of the dispassionate.

When I first started Hampshire College I had never heard the word linguistics. I went to my first college class which was to be a course on Homer. I took a seat in a crowded room and the professor walked in, sat down and said "This is a course modestly entitled *Language, Thought and Reality*." Several students, like me budding Homeric scholars, gathered their belongings and left. The student next to me leaned over and smugly said "God, these people can't even find the right room." *I* wasn't leaving. If I knew the name of the person whose peer pressure kept me in my seat, it's likely I would thank him. The professor was Steve Weisler and I will thank him

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instead. Steve was the model first (and second, etc.) teacher of linguistics, patient, gently prodding and almost always encouraging (he did once tell me that I would never find a job). For eight years now he has been trying to make me a better linguist, even when I left the friendly confines of English syntax to do some intellectual traipsing elsewhere. For three years at Hampshire and five years since, Steve, Mark Feinstein, Ruth Hammon, Leni Bowen and Rich Muller treated me to a good time. To Jamie Rucker, Scott Hall and F. Peter Winters— hey, you gotta' make a livin' somehow.

Among my fellow students, special mention must go to Brian Sietsema. My first memory of MIT was having Brian cause me to spill mayonnaise on myself. It took him six months to realize that I wasn't made about that. So, for 5 years minus six months, he has kept me from going over the edge. They say that when the blind lead the blind, both end up in the ditch, but who want to be in a ditch alone?

And in no particular order, but for particular reasons: Jim Higginbotham, Kate Kearns, Dave Turner, Paul Sheedy, Dave Chouquette, [cFc Lori Holms, Harry Leder ǝ], Scott Hall, Bob Wall, Jesse Gonzales/z, Benny Vines, Betsy Ritter, Scott Lundin, Catherine Lathwell, Opal and Harry, Ray Vines, Richard Penniman, Moni Dressler, Robert Wills, Neal Blatt, Pete Winters, Erik J.P. D'Amato and Arthur Marx.

Thanks Mom.

"Have you$_i$ ever seen [a girl]$_j$ for whom$_j$ you'd fight for e_j,
   die for e_j, pray to God$_k$ PRO$_k$ to give e_i e_j?"

Jackie Wilson— "Reet Petite (The Finest Girl You'd Ever
   Wan[PRO]na' Meet)"

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Chapter 1:
Introduction

A naive question one may ask is 'why do languages generally put words in a particular order?' We may also ask a question about this question: 'does the answer differ depending on which languages we consider?' Only slightly less naive than the above is the question: what is grammatical agreement? Though naive, these questions have commanded attention in many grammatical traditions, and this work is another attempt to provide partial answers to them. The approach we will be assuming is the *Principles and Parameters framework* (PPF) (see esp. Chomsky, 1985, 1989 and references there); §1.3 provides an introduction to the theoretical assumptions of this work. In §1.1-1.2 we informally explore the theoretical background to the questions posed above and introduce the basic approach to be taken in this work.

1.1 Where does Word Order Come From?

1.1.1 Some Theoretical Background

Part of any adequate theory of language must be an account of the mechanisms languages employ in the ordering of words in sentences and, as appropriate, an account of why certain languages seem largely unconstrained in their word order. Setting aside these *free-word order* cases for now, let us consider a familiar language, English:

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(1) a. John hit Fred.
     b. *John Fred hit. (cf. John$_i$, Fred hit e$_i$)
     c. *Fred John hit. (cf. Fred$_i$, John hit e$_i$)

(2) a. John put the car in the garage.
     b. *John put in the garage the car.
     c. *John the car put in the garage.

It is a basic fact about English that its canonical word order puts the direct object immediately after the verb (1a) and the direct object is not freely permutable (1b-c).[1] This fact about English, and parallel facts in other languages, has, in many different grammatical traditions, led researchers to assume that there is a special relation between a verb and its direct object—often phrased as the claim that verbs *govern* their direct objects. Modern reflexes in PPF of this classic intuition, formalizing the government relation, are the theories of Case and thematic-role assignment. Briefly, these theories claim that noun phrases (NPs) are assigned Case (abstract accusative case for English direct object NPs) and *thematic-roles* (θ-roles), which are relations such as agent, patient, theme, etc. It is further assumed that Case and thematic-role assignment are accomplished under a structural relation of *government*, which, for now, we can assume to be strict adjacency between the verb and its direct object (see Stowell, 1981). Hence, to take one of the sentences above:

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[1] Excluding topicalization with its characteristic intonation.

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(1) a. John hit **Fred.**
                    +Accusative
                    +Patient θ—role

The direct object *Fred* receives accusative case and the patient θ—role from the verb *hit*. As indicated above, these relations are accomplished under strict adjacency so this theory predicts that it will be impossible to separate the direct object from the verb. This is supported by data such as the following:

(3) a. *John **hid** in the garden **Fred.**
     b. John **hid Fred** in the garden.

As we have stated them, the theories of Case and thematic-role assignment do not yet account for the impossibility of (1b), reprinted below, where the direct object *is* adjacent to the verb:

(1) b. *John **Fred hit.**

An obvious way to analyze (1b), and the traditional Principles and Parameters explanation, is to claim that Case and θ-assignment are unidirectional, that is in any given language assignment may be to the left or to the right but not both.

One might wonder why we say that direct objects require *both* Case and a θ—role since requiring either would have the desired effect of forcing the direct object to appear immediately after the verb. Case and θ-role assignment diverge at other points, however. For example, prepositional phrases (PPs) may receive thematic roles from verbs

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also, but they do not apparently require Case. The data below are representative of the facts of prepositional phrases in English:

(4) a.   John **put** the car **in the garage**.
     b.   *John **in the garage put** the car.
     c.   *John **put in the garage** the car.

Prepositional phrases appear to the right of verbs, like direct objects, but direct objects appear immediately after the verb while prepositional phrases follow the direct object. Obviously this suggests that we must abandon the claim that θ–role assignment is under strict adjacency since the PP is not adjacent to the verb *put* in (4a). It remains to be seen whether we may maintain an adjacency requirement for Case assignment—the facts of English suggest that we can. This would permit Case and θ–role assignment to diverge on the nature of the locality required for accomplishment of the assignment.

In English, on the basis of our limited examples, it appears that Case and θ-role assignment are to the right. This is not strictly accurate, however, since subject NPs must receive Case and thematic-roles also and English subjects are leftmost in their clauses; hence whatever assigns Case and θ–roles to subjects must make *these* assignments to the left. We would like to be able to say that English has a consistent way of assigning Case and thematic roles, either to the right or to the left, but the facts do not support this conclusion. It seems to be a fact that languages may assign Case and thematic-roles

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to the right for direct objects, indirect objects and other PPs yet still assign Case and thematic roles to the left for subjects.

Further, nothing we have said to this point precludes a language from assigning Case in one direction and θ-roles in a different direction; in fact it has been claimed by several researchers (see for example, Travis, 1984, 1987 and Koopman, 1984) that evidence for such a divergence is found. Travis (1987;129) makes such an assumption for the African language Kpelle:[2]

(5) a. galoŋ a [vp pérɛ tɔɔ́i]
       chief AGR   house build
       'The chief is building a house.'

   b. e [vp sɛŋ-kǎu tee kǎloŋ-pə́]
       AGR   money   sent chief-to
       'He sent the money to the chief.'

Subject and direct object noun phrases appear before the verb but the indirect object prepositional phrase (kǎloŋ-pə́, 'to the chief' in 5b) follows the verb. Simplifying somewhat, Travis argues that in Kpelle Case is assigned to the left and thematic-roles are assigned to the right. Since direct objects must receive both Case and θ-roles, it appears that they must be in two places at once. A natural way to encode this in the Principles and Parameters framework is to assume that the direct object begins in a position where it may receive a θ-role and moves to a position to which Case is assigned:

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[2] AGR here refers to an agreement morpheme which registers the person of the subject. It may also be translated as *he* in both of these examples. In (5a) it cooccurs with the subject *chief* but in (5b) it does not cooccur with a subject

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(6) a. e [VP <u>tèè</u> sɛŋ-kău kǎloŋ-pə̀]
      AGR   sent money chief-to

b. e [VP sɛŋ-kău$_i$ tèe t_i kǎloŋ-pə̀]
    AGR   money sent t_i chief-to
    'He sent the money to the chief.'

We assume that the moved direct object leaves a coindexed trace (t_i) which receives the θ–role from the verb. This trace transfers the θ–role to the moved direct object. The direct object receives Case from the verb directly in its derived position to the left of the verb. This simple set of assumptions captures the facts of Kpelle word order.

To review briefly, we began with the question: what accounts for the order of words in (English) sentences. We informally elaborated theories of Case and θ-role assignment which account for the basic facts of English word order and which extend in an interesting way to word order in Kpelle. We could move to a consideration of other languages, but enough of the system is in place for us to see how word order might be explained in a Principles and Parameters type theory. We may now turn to another question we asked above, the question 'does the answer to why languages have particular orders differ depending on what languages we consider?' We would hope not. Although the principles of Case and θ-role assignment are fairly simple as articulated here, it would be quite a challenge for a child learning a language to *discover* these principles for herself. If, on the other

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hand, the principles of Case and θ-role assignment are applicable in every language. If they are *universal properties of human language*, we may assume that the child does not have to *learn* these principles at all, rather we could assume that they are principles which the child is innately programmed to apply in the task of language learning. If Case and θ-role assignment are *real* entities for unrelated languages like English and Kpelle, we would expect to find them in all languages. If only a subset of human languages employed these principles, we would have to account for how otherwise divergent languages such as English and Kpelle have come to acquire such specialized principles.

In Kpelle we assumed that verbs assign Case to the left and thematic roles to the right. This accounted for the fact that direct objects precede verbs while indirect object PPs follow the verb. We had to assume that the direct object received a θ-role from the verb and then moved to the left of the verb to receive Case. Recall that in in English we said that the subject received its θ-role and Case which are assigned to the left while the direct objects receive its θ-role and Case assigned to the right. Why, we might ask, could we not simply state that Kpelle direct objects receive θ-roles assigned to the left while Kpelle indirect objects receive θ-roles assigned to the right? The issue here is whether the grammar has to specify (i.) for each type of Case/θ-role receiver (direct object, subject, indirect object, etc) from which direction it receives Case and θ-role or (ii.) for each assigner of Case/θ-role, in which direction it assigns Case/θ-roles. Since the number of elements which may receive Case/θ-roles is

greater than the number of elements which assign Case/θ-roles, the optimal grammar is one in which the direction is specified for the assigner rather than for the assigned. This issue is relevant here because we seem to have to specify direction of Case/θ-role assignment for English subjects. If we assumed a specification of assignment direction for Kpelle direct objects we would not need to assume movement. This argument goes through only if English subjects receive Case/θ-roles from assigners which sometimes assign Case or θ-roles to the left.

Actually, in English we need not say that the verb assigns Case and θ-roles to the subject. We may be a little mysterious for now on how this is accomplished but let us make the presently unwarranted assumption that an abstract element (called inflection or INFL) assigns Case to English subjects with the Verb Phrase (VP) assigning the θ-role:

(7)   John INFL [$_{VP}$ gave a book to Mary

This assumption about Case and θ-role assignment to English subjects, motivated in detail elsewhere (see for example, Chomsky, 1981, 1985b), allows us to distinguish English from Kpelle. In English we can say that INFL and VP always assigns Case and thematic-roles to the left while verbs always assign Case and thematic-roles to the right, no matter what element they assign Case or θ-roles to. In Kpelle, if we wanted to say that direct objects receive θ-roles assigned to the left, we would have to say that verbs sometime assign θ-roles to the right

and sometimes assign them to the left. We avoid this analysis because it provides too much power for the system in permitting the verb to distinguish the elements it is assigning Case and θ–roles to. Further, it allows us to formulate a strong hypothesis about Case and thematic-role assignment: if an element α assigns Case or a θ–role in a direction β, α always assigns it in direction β. If this principle is correct then the child learning the language need not entertain the possibility that a particular category may assign a θ–role to the right at one time and to the left at another. An optimal theory would be one in which a particular lexical item or category has direction of Case and θ–role assignment constant.

A superficial counterexample to the above generalization is found in Italian, a language in which subjects may occur preverbally (8a), postverbally (8b) or not at all (8c):

(8)   a. le   brigate   rosse   hanno   telefonato
           the   brigade   red   have   phoned

       b. e_i hanno telefonato $[_{NP}$ le   brigate   rosse$]_i$
         ec have   phoned   the   brigade   red

       c. e_i parl-   ano   di   linguistica
         ec speak- 3pl   of   linguistics

In (8a) the subject appears in sentence initial position but it is in sentence final position in (8b). Further, in (8c) there is no subject at all. How, then, are Case and thematic-roles assigned to Italian subjects? Focusing first on the missing subject sentence in (8c), if there is no subject, how can there be an assignment of nominative

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Case and the subject's thematic role (the agent θ-role) (see Safir, 1981, for the view that Case must be discharged)?

This omission of a subject, not generally possible in English, is possible in a number of languages (for example, Spanish, Italian, Greek, Hebrew, Navajo and many others). These languages in which the subject can be null are generally languages with rich verbal agreement paradigms. Compare, for example, the verbal paradigms of English and Italian:

(9) <u>English</u>   <u>Italian</u>
     I talk   (io) parlo
     you (sg.) talk   (tu) parli
     he talks   (lui) parla
     we talk   (noi) parlamo
     you (pl.) talk   (voi) parlate
     they talk   (loro) parlano

For a particular English verb form such as <u>talks</u>, it is possible to know that this is the third person singular form, but all other person/number combinations result in the same phonetic form [tɔ:k]. In English the morphological form of the verb does not generally encode whether the subject is 1st, 2nd or 3rd person. In Italian, however, every verb form is morphologically distinct and, as such, makes manifest the person and number of the subject. Thus, it is not surprising to find a contrast between English and Italian on the basis of the following sentences:

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(9') a. *e speak- Ø   [English]
        ec speak 1sg

      b. e parl- o   [Italian]
         ec speak 1sg

      c. e habl- o   [Spanish]
         ec speak 1sg
      'I speak.'

English differs from Italian and Spanish in two respects: (i) English morphological agreement is less rich than that of Italian or Spanish; and (ii) English subjects cannot be omitted while Italian and Spanish subjects can. An intuitive connection between these two facts is that when a subject is omitted in Spanish and Italian, the verbal morphology still encodes the person and number of the subject— subjects in Spanish and Italian are *recoverable* from morphological material present in a *subjectless* sentence.

It has generally been assumed in the Government and Binding and Principles and Parameters frameworks (Chomsky, 1981, 1982; Rizzi, 1981 and references there) that rich Agreement is able to license an empty category (called *pro*) in subject position in Italian but not in English. This empty category is simply a null pronoun and may receive θ-roles and nominative case like an overt subject. Returning to our null subject example from Italian:

(8) c. e_i parl- ano di linguistica
        ec speak- 3pl of linguistics

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The subject of (8c) is *pro* which receives Case and θ-roles assigned to the left. We may now return to the question of multiple subject positions in Italian:

(8)   a. le   brigate rosse hanno telefonato
         the brigade red   have phoned

      b. e_i hanno telefonato [$_{NP}$ le   brigate rosse]$_i$
         ec have   phoned   the brigade red

We claimed that the subject in (8a) receives Case and thematic-roles assigned to the left. Do we have to say that the postverbal subject (*le brigate rosse*) in (8b) receives Case and a θ-roles assigned to the right? We may avoid this conclusion by assuming that there is also a *pro* subject in (8b), hence:

(8)   b. *pro*$_i$ hanno telefonato [$_{NP}$ le   brigate rosse]$_i$
         ec   have   phoned   the brigade red

Once again *pro* receives Case and θ-roles which are assigned to the left. We can maintain the claim that the Case assigner and θ-role assigner for subjects in Italian always assign(s) to the left.

In Italian, positing *pro* allows us to maintain the claim that all Italian sentences have a preverbal subject position and, more importantly for the present discussion, the claim that Case/θ-role assignment is constant for particular categories (INFL, VP and V being the assigners we have thus far considered). To test this claim about Italian requires other data, of course. For every Case or θ-role

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assigner, we must establish that its direction of assignment is constant. We would want to consider direct objects as well as subjects. The following is drawn from Rizzi (1982; 1)

(10) a. Mario ha voluto [NP un costoso regalo di Natale]
          'Mario has wanted an expensive Christmas present.'   .

      b. *Mario [NP un costoso regalo di Natale] ha voluto.
         ('Mario has wanted an expensive Christmas present')

As (10) suggests, Italian direct objects cannot be freely permuted to a position preceding the verb, its Case and thematic-role assigner. Direct objects support the assumption that thematic-role assignment is either rightward or leftward but not both. Similar data may be found for objects of prepositions, which receive Case from their prepositions. Again, data from Rizzi (1982; 1):

(11) a. Piero verrà a parlarti [PP di parasicologia]
          'Piero will come to speak to you about parapsychology.'

      b. *Piero verrà a parlarti [PP parasicologia di]
         ('Piero will come to speak to you about parapsychology.')

The object of the preposition must follow the preposition (11a) and may not precede it (11b). This is further evidence for the claim that Case and θ-role assignment are unidirectional.

Not all languages show evidence of the Italian type, however. Yagua, the only extant member of the Peba-Yaguan language family (Northeast Peru), shows the object of the adposition appearing both

before and after the adposition. Hence (data from Payne:1985, p. 448):

(12) a. jįmuñu *vįtmú*
          canoe   inside
          'Inside the canoe.'

      b. rà-   *vįtmú* jįmuñu
          3INAN - inside   canoe
          'Inside the canoe.'

The object of the adposition must precede it (12a) if the P is not inflected with an agreement marker coreferential with the object. If the agreement marker appears (12b), the object must follow the preposition. Yagua thus represents another superficial counter-example to the hypothesis that Case/θ-assignment is unidirectional. We return to Yagua presently.

Another more serious type of counterexample is represented by so-called "free word order" languages such as the Pama-Nyungan (Australian) language Warlpiri, discussed in several papers by Ken Hale (in particular Hale:1983). Warlpiri seems to systematically violate the unidirectional requirement on Case/theta-assignment. Consider the following sentences where the position of the direct object (either *wawirri*, 'kangaroo' or *wawirri yalumpu*, 'that kangaroo') is not fixed:[3] (3S= 3rd subject, etc.)

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[3] Though I am using sentences from Hale (1983) the glosses of the AUX clitic sequences are borrowed from Jelinek (1984) who uses basically the same data presented below. The discussion below is taken from Jelinek's seminal (1984) discussion of non-configurationality. In Jelinek's discussion, several central

(13) a. ngarrka- ngku ka-   Ø- Ø <u>wawirri</u> panti- rni
       man-   ERG PRES- 3S 3O kangaroo spear NONPAST
    'The man is spearing the kangaroo.' (Hale, 1983; 6)

   b. <u>wawirri</u> ka-   Ø- Ø panti- rni
      kangaroo PRES- 3S 3O spear NONPAST
      'He/She is spearing the kangaroo.' (Hale, ibid.)

   c. <u>wawirri</u> <u>yalumpu</u> kapi- ma- Ø panti- rni
      kangaroo that   FUT- 1S 3O spear NONPAST
      'I will spear that kangaroo.' (Hale, ibid.)

   d. <u>wawirri</u> kapi- ma- Ø panti- rni   <u>yalumpu</u>
      kangaroo FUT- 1S 3O spear NONPAST that
      'I will spear that kangaroo.' (Hale, ibid.)

   e. panti- rni   ka   Ø- Ø
      spear NONPAST PRES- 3S 3O
      'He/She is spearing him/her/it.' (Hale, ibid.)

Warlpiri direct objects demonstrate the language's very free word order. In (13a) the direct object immediately precedes the verb, which, on the assumption—justified for English, Italian and Kpelle—that θ–assignment is unidirectional and requires adjacency, we might have assumed to be the only possible position. In (13b), the direct object appears in sentence initial position separated from the verb by the Auxiliary complex (ka-Ø-Ø). Note that sentence initial position is the position occupied by the subject in (13a) but this position supports the direct object in (13b). In (13c), we have added a demonstrative pronoun yalumpu 'that' but the sentence in parallel to (13b) where the

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direct object is separated from the verb. In (13d), the demonstrative pronoun appears sentence finally while the noun *wawirri* 'kangaroo' still appears in sentence initial position. Not only have we separated the head noun from the verb, we have separated the demonstrative from its head noun. Finally, in (13e) we see that the direct object, like the subject, is optional.

While it might seem from the above examples as though Warlpiri tolerates any word order, this is not accurate. The second element in the sentence must be the AUX sequence (*ka-* or *kapi-* above) which supports the subject and object agreement morphemes and these agreement morphemes must appear (though they may be $\emptyset$- forms for third person). Only one constituent may precede the AUX clitic sequence, hence *wawirri yalumpu* 'that kangaroo' may precede but not two words which do not form a constituent:

(14)   a   *ngarrka- ngku wawirri   ka- $\emptyset$- $\emptyset$ panti- rni
         man-   ERG   kangaroo PRES- 3S 3O spear NONPAST
         ('The man is spearing the kangaroo.' [Ken Hale: PC]

     b.   *ngarrka- ngku panti- rni   ka- $\emptyset$- $\emptyset$ <u>wawirri</u>
         man-   ERG   spear NONPAST PRES- 3S 3O kangaroo
         ('The man is spearing the kangaroo.') [Ken Hale, PC]

Following our discussion of Italian, we might begin to look for ways to incorporate *pro* into Warlpiri, which like Italian, shows *missing* or *null* NPs. Recall, however, that *pro* was helpful for us in Italian because (i.) it supported the theory of unidirectional Case/θ-role assignment and (ii) it allowed us to assume a consistent subject

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position. It has been argued by Hale (1983) and Jelinek (1984) that there is no need to assume *pro* for Warlpiri. We will review some of those arguments.

Jelinek (1984) argues that nominals (such as subject and object) are not governed by verbs in Warlpiri (and hence cannot receive Case or θ-roles from them). The chief argument Jelinek employs is that nominals do not match in grammatical person or Case with the agreement clitics on the AUX node. She shows (i.) that auxiliary clitics in Warlpiri show nominative/accusative case—where the subject of a transitive clause is treated the same as the subject of an intransitive clause and (ii.) that nominals show ergative/absolutive case—where the subject of a intransitive clause is treated the same as the object of a transitive clause:

(15) a. ngajulu- rlu ka-   ma-   ngku   nyuntu- Ø
          I-   ERG PRES- 1SGNOM 2SGACC you-   ABS

      nya- nyi
      see NONPAST

'I see you.' (Hale, 1973, p. 328)

      b. nyuntulu- rlu ka-   npa-   ju   ngaju- Ø
         You-   ERG PRES- 2SGNOM 1SGACC me-   ABS

      nya- nyi
      see NONPAST

'You see me.' (ibid.)

      c. nyuntu- Ø   ka-   npa-   purla- mi
         You-   ABS PRES- 2SGNOM shout- NONPAST
      'You are shouting.'   (ibid.)

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To see the nominative/accusative nature of the agreement system, note that the subject clitic of the intransitive (15c) (-npa - '2SGNom') is the same as the that of the transitive (15b) (-npa-'2SGNom). The subject of the intransitive (15c) nyuntu-∅ (you-ABS) does not have the same case as the subject of the transitive (15b) nyuntulu-rlu ('you-ERG'). The absolutive ending -∅ is used to mark the object of the transitive (15a-b). Thus, Warlpiri has a nominative-accusative agreement pattern with an ergative-absolutive nominal case system.

Jelinek also shows that nominals need not share grammatical features with the agreement clitics. An example she gives (p. 46) from Hale (1983, p.32) shows this non-agreement:

(16) nya- nyi   ka-   rna-   ngku   ngarrka- ∅-   lku
      see- NONPAST Pres- 1SGNom 2SGACC man-   ABS- after
      'I see you (as) a man now (i.e., as fully grown
      or initiated').

The referent of the 2nd person object clitic (-ngku) is the third person nominal ngarrka-∅ ('man-ABS'). Given that the two systems of agreement and Case marking do not line up, (i.) how can we can we express this fact about Warlpiri and (ii.) can we also explain the extensive free word order and similarly extensive null anaphora of Warlpiri? The position that Hale and Jelinek have adopted is that assuming subject and object pro is not particularly helpful for the Warlpiri problem. Positing pro will not help us explain either Case asymmetries or why agreement clitics in Warlpiri need not bear the

features of the presumed triggers of that agreement. In fact, positing *pro* only raises the presumption that these problems should not arise, and that Warlpiri should behave like English or Italian.

The alternative suggested by Jelinek is to assume that the agreement clitics, which are the only obligatory nominal elements in Warlpiri clauses, are the *real* subjects and objects. The overt NPs, the full NP subjects and objects, are thus *adarguments*, or adjoined to S. Theta–roles are assigned to agreement clitics appearing on the AUX node.

The basic intuition is that in languages like Warlpiri where an account of word order in terms of Case or θ–assignment seems implausible, agreement clitics bear the argument functions of overt NPs. To reverse the reasoning, Warlpiri free word order is a function of the fact that NPs need not receive Case or theta-roles from the verb, since these are assigned to agreement clitics (under strict locality conditions).

To get an intuitive picture of the relation between agreement clitics and NPs in Warlpiri, consider the following sentence of English (Jelinek, 1984, p.50):

(17) He$_i$, the doctor$_i$, tells me$_k$, the patient$_k$, what to do.

The full NPs *fill out* the meaning of the pronouns and expand on their reference but the pronouns fill the grammatical roles of subject and object.

We will discuss aspects of Jelinek's proposal in great detail in later chapters of this work but returning to the question with which we began "what accounts for word order?" we see that there may be at least two types of answers. For languages like English, Kpelle and Italian, the answer is Case and theta-marking which require NPs to be proximate (usually adjacent) to assigners of Case and theta-roles. For languages like Warlpiri, on the other hand, the answer is certainly different. In fact, the answer is "nothing accounts for word order, because there is nothing to account *for*." When we earlier posed the question 'what accounts for word order', recall that we did not want the result that the answer would differ depending on what language we considered. The reason, suggested above to account for the similarities between English and Kpelle, is that the highly specialized principles that account for word order in English and Kpelle seem unlikely candidates for material actually learned by the child. If in a language like Warlpiri, these same specialized principles motivated for English and Kpelle are inoperative, we are forced to posit that not only does the English or Kpelle child have to learn the principles, s/he must also learn that the determinants of word order in Warlpiri are not applicable in Kpelle. If, however, the language learner arrived at the acquisition task knowing that languages were either like Warlpiri or Kpelle/English and knew how to find data conclusively determining which type of language his/hers is, then we could continue to assume that the principles governing word order in English and Kpelle are part of the innate language faculty. For children learning, Warlpiri, on

the other hand, they must acquire the knowledge that their language is different. It may seen reasonable to posit that there is a parametric difference between English/Kpelle and Warlpiri such that the child learns that word order principles set A (θ-theory and Case theory) apply to some languages and word order principles set B (those which apply to Warlpiri apply to some other languages.

In fact, the distinction between languages like English and Italian and Kpelle on the one hand and Warlpiri on the other has been the subject of a great deal of work in modern syntactic theory going under the name *the non-configurationality parameter*. As the name may suggest, it has roughly been assumed that there is a class of languages *the configurational languages* which are approximately like English in requiring NPs to be in particular syntactic configurations with particular Case and θ-role assigners, such as verbs and INFL. There is assumed to be another class, *the non-configurational languages* in which these syntactic configurations are not present, perhaps replaced by other syntactic configurations yet to be discovered. Jelinek's version of this difference can be stated simply:

> The Configurationality Parameter (after Jelinek, 1984)
> a. Configurational languages assign θ–roles to NPs.
> b. Non-configurational languages assign θ–roles to
>   agreement morphemes

Thus, if this view is correct our question about word order does permit a single answer because of a cross-cutting classification of languages, the configurationality parameter.

Previous to our discussion of Warlpiri, we briefly Yagua as an example of a language which might require the assumption that theta-assignment was both leftward and rightward. That was assuming that the principles governing Italian/English/Kpelle word order were operative in Yagua. Now that Warlpiri seems to the force the claim that word order may arise from different principles, we may return to Yagua with the question: is its word order best describable with the assumption that it is like Warlpiri, that it is like English or that it is in a different class altogether. Consider again the data from (12) reprinted below:

(12) a. j*umuñu *viimú*
         canoe   inside
         'Inside the canoe.'

      b. rà-   *viimú* j*umuñu*
         3INAN - inside canoe
         'Inside the canoe.'

While the above demonstrates that a noun phrase may be on the left or the right of the adposition, a nominal element (either an NP or an agreement clitic) must immediately precede the adposition. Hence, the following forms are ungrammatical:

(12') a. *rà jʉmuñu vĩĩmú
3   canoe   inside

    b. *jʉmuñu rà-vĩĩmú
      canoe   3- inside

Since the agreement morpheme and the full noun phrase compete for a position before the adposition, one might assume that in Yagua PPs, both the NP and the agreement clitic are equally argumental, or that theta-assignment may be to one or the other, but not both. This would suggest a change in Jelinek's configurationality parameter:

Revised Configurationality Parameter
a. Configurational languages assign θ–roles to NPs.
b. Non-configurational languages assign θ–roles to agreement morphemes
c. Quasi-configurational languages assign θ-roles to agreement morphemes or NPs.

Yet if this version of the configurationality parameter is correct, we are forced to assume that there are three different answers to the question 'where does word order come from'. And since some languages behave like Warlpiri in some constituents (Dogrib subjects for example) but like Yagua in others (Dogrib PPs), we may be forced to the unappealing answer that the question 'where does word order come from' has a great many types of answers. This is unappealing; we would like to assume that the types of possible word orders comes

from an extremely restricted inventory. In this work, we will argue for such a restricted set of possibilities.

1.1.2 Word Order In This Work

In the configurationality parameter suggested above, languages are distinguished by whether they assign thematic-roles to NPs or to pronominal agreement morphemes. Under Jelinek's analysis, a non-configurational language is one which assigns thematic-roles to clitics and a language which assigns thematic-roles to clitics is a non-configurational language. In Alexander (1986) we observed that there was a generalization missed by Jelinek's version of the non-configurationality parameter. This generalization may be informally stated as: Languages with multiple agreement clitics (subject, object) such as Navajo and Warlpiri generally tend to have free word order only if they have rich Case systems.

To see the importance of this generalization, we must recapitulate our logic somewhat. We explained fixed word order, such as in English, Italian and Kpelle, by appeal to Case and theta-marking. We then explained free word order as being due to the lack of Case and theta-marking *to NPs* in languages like Warlpiri. Part of the evidence suggesting that Warlpiri lacked Case and theta-marking to NPs (in the Kpelle/English sense) was that it had obligatory multiple agreement clitics (for subject, direct object) and highly optional NPs. The prediction of Jelinek's analysis is that free word order should cluster with multiple agreement clitics (so, θ–assignment to those

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clitics) while fixed word order should cluster with the property of lacking multiple agreement clitics (so, θ-assignment to NPs). Alexander (1986) argued that this was incorrect and that free word order clustered with rich Case. With respect to having relatively free word order, languages like Warlpiri with rich agreement clustered with languages like Japanese with no agreement. With respect to having relatively fixed word order, languages like Navajo with very rich agreement (for subject and direct object) clustered with languages like English or Italian which do not have multiple agreement morphemes. The relation between free(r) word order and rich Case is an old insight, found, for example, in the work of Sapir (classically Sapir, 1921) and many others (e.g., Vennemann, 1975; Bloomfield, 1933, §12.12).

Alexander (1986) concluded that Jelinek was correct in concluding that there was a correlation between Navajo and Warlpiri in the extent to which they permitted null anaphora, which was stronger than in languages without multiple agreement clitics such as Italian and English. This should not be surprising since we have seen from Italian that rich agreement licensing null subject anaphora has an intuitive plausibility. It is natural to assume that additional agreement (as in Navajo and Warlpiri for the direct object) would result in additional null anaphora (specifically direct object drop).

The position defended in Alexander (1986) was that languages with rich Case systems such as Warlpiri and Japanese showed the free word order expected of rich Case languages (though the radically free

word order of Warlpiri cannot be so simply explained of course) and that rich Agreement languages such as Warlpiri and Navajo showed the null anaphora we are led to expect from consideration of moderately-rich agreement languages such as Italian. Under this conception, the generalization to a class of configurational and non-configurational languages is essentially spurious, rather what is at work here are the familiar effects of rich case and agreement. It is this conception of configurationality we develop in this work.

This is not to say that Jelinek's mechanism for encoding non-configurationality is necessarily incorrect. It might turn out that we *do* want to adopt the claim that there are languages, with this hyper-rich agreement, which assign θ-roles to agreement clitics. What we cannot do, if the reasoning in Alexander (1986) is correct, is assume that it is θ-marking to clitics *alone* which results in Warlpiri type languages since Navajo is only partially similar to Warlpiri in its null anaphora but dissimilar in that Navajo lacks case distinctions and manifests relatively fixed word order. Logically, we must account for (i.) Warlpiri free word order (naturally rich case suggests itself); and (ii.) Navajo fixed word order. With respect to fixed word order in Navajo, its analysis will have to be different from the analysis of fixed word order in English since, if we do follow Jelinek, we do not have available for Navajo the mechanism of Case/θ-role assignment to NPs that was the basis for the analysis of fixed word order in English.[4]

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[4] A view worth considering is that we must make a distinction between abstract or structural case on the one hand and lexical or non-structural Case

If, on the other hand, *contra* Jelinek, we abandon the claim that languages with rich agreement and no Case assign θ-roles to agreement clitics, we are forced to group Navajo with Italian, English and Kpelle. Consequently, we must assume that Navajo does have thematic-role assignment to NPs. We would also want to assume the existence of *pro* in Navajo type languages, with *pro* bearing the thematic-roles assigned to the empty NP positions (which we now must posit). It is very difficult to find empirical differences between the claim that empty NPs in Navajo are simply non-existent and the claim that they are filled by an empty element (*pro*) although we will discuss what we find a very convincing argument against Navajo *pro* due to Platero (1982). A parsimonious method might be to assume that all languages have *pro*; following the logic above, this would prevent the language learner from having to *discover pro* in those languages where it appears. Since the existence of *pro* in some languages such as Warlpiri is disputed (by Hale and Jelinek among others), it would be circular to assume that *pro* is present in all languages. When we find a language in which we cannot tell if *pro* is

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on the other. Under this view, it might be argued that structural Case, as the term suggests, requires a local structural relation, presumably adjacency or government, whereas lexical Case is essentially non-local. Although we do not phrase our position as such, it is possible to assume that the relation we call *government* (adjacency) below should be called *structural* (or *abstract*) *Case assignment*. We could say then that languages without rich case require adjacency for Case assignment while languages with rich morphological case do not (arguments for the second conclusion will be advanced below). This would be nearly identical to our claim below that non-configurational languages are those which assign theta-roles to agreement morphemes (as Jelinek suggests) but such languages differ (Warlpiri vs. Navajo) in the locality requirements of NPs to their licensers (verbs or agreement clitics).

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present (perhaps in Navajo-type languages), obviously we might assume *pro* where doing so solves particular problems and not assume it if doing so raises problems.

This raises the question: what is at stake in assuming *pro* for three arguably non-configurational languages (languages with multiple agreement morphemes): Navajo, Dogrib and Yagua.

One language where it does not immediately appear helpful or harmful to posit *pro* is Navajo. We will focus here on Navajo postpositional phrases because it is easier to see the component parts of the phrase but the argument extends to other categories. In Navajo, the object of the postposition is optional but inflection on the postposition is obligatory.

(18) a tl'óół y-   ee
          rope   3sg- with
          'with a rope' (Hale, 1988; 4)

      b y-   ee
          3sg- with
          'with it'

      c. *tl'óół ee
          rope   with
          ('with a rope')

We could assume that (18b) contains a *pro* object of the postposition but there is no obvious benefit to doing so. We would then say that the object of the postposition is *tl'óół* ('knife') if it appears or *pro* otherwise. To rule out (18'c) we need only say that *pro*

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may not appear unless it is licensed or identified by agreement, as is familiar from Italian.

(18') b. *pro$_i$ y$_i$- ee
ec   3sg- with
'with a rope'

c. *pro ee
ec   with
('with a rope')

Although these two analysis (one with *pro*, one without) make the same predictions, they do represent two different ways of thinking about Navaho postpositional objects. In the *pro* analysis, the postpositonal object is either an overt NP or an empty one. Either NP triggers agreement—in fact, either NP is impossible without agreement. For Navajo postpositions, we say, as we do for Italian, that it has rich agreement and is so able to license *pro*. Under an analysis which does not admit *pro* in Navajo, we would say that the effective postpositional object is the agreement morpheme (*y-* above) but that it is possible to add a specifying (or *resumptive* in Ken Hale's terminology) NP. Navajo PPs would be parallel to the English case below:

(18'') a. tl'óół$_i$ [pp y$_i$- ee
rope   3sg- with
'with a rope'

b. He hit him [pp with it$_i$], [the stick]$_i$

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Although the English cases are certainly a bit marginal (perhaps because parentheticals must hang off S which would prevent linking the *resumptive* NP with the pronoun in PP), we have seen [(16) above] that such resumptive NPs are generally acceptable for English subjects and direct objects.

A strong argument does exist against positing *pro* in Navajo however. Platero (1982) [discussed in Hale, 1985] calls attention to the following sentence:

(19) [adáádáá ashkii at'ééd yiyiłtsán-ée] yidoots'os
      yesterday boy   girl   3-3-saw-REL 3-3-will-kiss
      'The boy will kiss the girl he saw yesterday'
      'S/he$_i$ will kiss the girl that the boy$_i$ saw yesterday

What is significant is that the third person subject marker on the main verb will kiss refers to the subject of the relative clause which is in object position. If the sentence had a pro subject the representation would have to be that in (19'):

(19') *pro$_i$* [adáádáá ashkii$_i$ at'ééd yiyiłtsán-ée] yidoots'os
          yesterday boy   girl   3-3-saw-REL 3-3-will-kiss

This representation cannot be appropriate however since the proi in subject position would c-command and hence bind the subject of the relative clause, thus violating Condition C of the Binding Theory (Chomsky, 1981) which requires that R-expressions never be bound. Any empty category in subject position would thus force an illicit

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representation and predict (19) to be ungrammatical, which it is not. Hence we seem forced to the conclusion that *pro* cannot appear, at least as a subject, in Navajo—even though it is precisely as a subject that *pro* has been chiefly motivated. We are not aware of the replication of Platero's argument for other languages. It is unlikely, however, that the result would only hold for Navajo.

An indeterminacy of the existence of *pro* in Navajo PPs extends to another Athapaskan language, Dogrib, which has a different set of agreement facts.

(20) a *mbeh ye- t'à
           knife 3sg- with
           ('with a knife')   (Saxon, 1986; 54)

     b. ye- t'à
          3sg- with
          'with it'

     c. mbeh t'à
          rope with
          'with a rope'

In Dogrib, an overt NP may appear with an uninflected postposition or an inflected postposition may appear but it is not possible to have both an overt adpositional object NP and inflection on the postposition. With a theory that assumes *pro*, we must account for the data below:

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(20') a. pro_i ye$_i$ t'à
        ec   3sg- with
        ('with it')

     b. ye-   t'à
        3sg- with
        'with it'

     c. *pro t'à
        ec   with
        ('with it')

For this data, we may explain (20'c) with the assumption that *pro* must be licensed by rich AGR (as in 20'a) and since there is no agreement in (20' c), there can be no *pro*. If there is no *pro*, the postposition lacks an object, which presumably violates the selection requirements of P. This analysis dodges the question of why an overt NP cannot appear with agreement (*mbeh yet'à*). What excludes the sentence in (19a)? If we assume an analysis which denies *pro*, we can claim that *mbeh* (knife) and *ye-* (3sg) are both nominal candidate instantiations of the postpositional object role. Under a *pro* analysis, we must claim that lexical NPs do not trigger agreement while empty NPs do (or, more properly, that without agreement it is not possible to have the relevant empty NP). Though the *pro* theory might seem rather disingenuous here, this is essentially the position defended by Stump (1984) for Breton (Celtic) which shows the Dogrib type complementary distribution between overt NPs and agreement on heads.

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(21) a. Ul levr brezhonek a zo ganto (*pro*)
a book Breton Pcl is with:3PL *ec*
'They have a Breton book' (Stump, 1984; 325)

b. *Ul levr brezhonek a zo ganto ar vugale
a book Breton Pcl is with:3PL the children
('The children have a Breton book')

c. Ul levr brezhonek a zo gant ar vugale
. a book Breton Pcl is with the children
'The children have a Breton book'

Simplifying slightly, Stump argues that the AGR absorbs the Case of the overt NP which, consequently, cannot surface. This is essentially the same proposal made for Breton by Lapointe (1983; 130). The difference between the agreement morpheme absorbing the Case of the overt NP and actually *being* the object of the adposition is not particularly clear and we would require a bit more formalization to point out potential distinctions but there is an intuition, shared by Lapointe and Stump, which would permit a *pro* analysis for Dogrib.

The analyses of Lapointe and Stump do not seem as promising for Yagua since as for Breton or Dogrib; though the agreement marker and NP compete for the same pre-head position, the NP may surface in a posthead position in Yagua. In Yagua the subject NP can appear before the verb (22a) or after the verb (22c) but the cooccurrence possibilities are restricted by the appearance of an agreement morpheme. Consider the following data: (Everett, 1989, p. 352)

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(22) a **Pauro** púúchi Anita
Paul   carries Anita
'Paul carries Anita'

b. sa-   púúchi Anita
3SG- carries Anita
'He carries Anita'

c. sa$_i$ púúchi **Pauro**$_i$ níí$_j$ Anita$_j$
3SG- carries Paul-   3SG Anita
'Paul carries Anita'

d. *****Pauro**$_i$ sa$_i$ púúchi Anita
Paul   3SG- carries Anita
('Paul carries Anita')

If the agreement morpheme absorbs the Case of the NP, when it does surface, how is it assigned Case? With respect to pro, one could argue that the complementary distribution of between agreement and the NP is really complementary distribution between *pro* (which must be licensed by the agreement) and an overt NP (which cannot trigger agreement). Alternatively one could propose that there is no pro in Yagua, and that the agreement morpheme and the NP compete for the same theta-role. We will discuss these options in Chapter 4. As with Navajo and Dogrib, positing *pro* in Yagua does not seem to solve any problems. With Dogrib and Yagua, *pro* does not raise any evident problems as it may in Navaho. We suggested that for both Dogrib and Yagua, positing *pro* required stipulating that overt NPs could not cooccur with an inflected head—though the complementary distribution is position relative in Yagua, absolute in Dogrib. There are researchers who are willing to accept this cost and posit *pro*, Stump

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and Lapointe for Breton, whose facts parallel Dogrib's, and also Everett (1989) who makes a similar proposal for Yagua. Thus, positing *pro* in Navajo, Dogrib and Yagua is not untenable—neither is it obviously beneficial. The point is that given Platero's argument against *pro* in Navajo and given Hale and Jelinek's arguments against *pro* in Warlpiri, positing *pro* is not automatic and consequently it is not a simple matter. Is Yagua like Navajo and Warlpiri in lacking *pro* or like Italian in having it? How could we tell? The question is also raised for Breton and Dogrib which both generally behave alike with respect to complementary distribution between an agreement morpheme and a full NP. Do both have pro, neither or does one have it and one not. Obviously the problem for the linguist is also the problem for the language learner. We would hope to have a theory of grammar which easily determines for the child when to posit *pro*. Thus far, we have found no such theory.

Returning then to the main discussion, these three languages (Navajo, Dogrib and Yagua) are ones with multiple agreement clitics, languages in which Jelinek would assume (i.) θ-assignment to clitics and (ii.) no reason to assume *pro*. Thus, even if Jelinek's version of the configurationality parameter is incorrect, as we will suggest, it does not follow that her claim that θ-roles can be assigned to clitics is to be abandoned and we have seen evidence to suggest that it is a reasonable assumption. The reason for this is that Jelinek's mechanism (theta-marking of clitics) does not explain the phenomena she attempts to describe (a cluster of Warlpiri properties including

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free word order) because the property of free word order does not exist in Navajo, a particularly good candidate for theta-marking of clitics given Platero's argument, or Dogrib and Yagua. It might turn out however, as we will argue here, that theta-assignment to agreement clitics can be motivated to explain other properties (extensive null anaphora, lack of NP movement rules, etc.) that are common to Warlpiri, Navajo, Dogrib, Yagua and other languages.

If one of the non-*pro* analyses sketched above is correct, we have a third type of answer to our initial question: 'where does word order come from.' For languages like English, Italian and Kpelle, the answer is Case and θ–assignment to NPs. For Warlpiri, while the answer might make to reference to Case, essentially the mechanisms of Case and θ–role assignment to NPs seem inoperative. For Navajo and Yagua and perhaps Dogrib, we might provide a third answer if theta-roles may be assigned to clitics with NPs still requiring proximity to assigners. Perhaps in these languages, NPs require Case, which is still under government. Perhaps NPs must be proximate to the clitics which are assigned thematic-roles. Perhaps some other mechanisms explains word order in Navajo or Yagua type languages.

The existence of languages somewhat like English and somewhat like Warlpiri raises a number of questions—and problems for Jelinek's analysis. Within the discussion of word order, such languages are of particular interest and this work will consider many of the questions raised by these languages. The overall question is still the one with which we began: 'why do languages put words in a particular order'

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with added inquiry: 'how does the theory of non-configurationality contribute to/or detract from our understanding of the above question'.

1.2 Another Question: How does Agreement Work?

1.2.1 Some Background

Having introduced one of the questions with which this work is concerned, we now turn to a second, requiring another approach to much of the data already briefly considered.

This is a work about agreement and, in particular, it is an exploration of the relationship between noun phrases which trigger agreement (such as subjects and direct objects) and the morphological registers of agreement which are triggered (agreement morphemes). As can be seen from a superficial (and probably misleading) exploration, English shows the canonical agreement pattern. Consider two simple declarative sentences in English:

(23) a. John like-s apples.
b. The men like-Ø apples.

Traditionally we say that the subject (*John*, *the men*) agrees with the verb (*like*) and that the verb takes a suffix which indicates or registers the person and number of the subject (-s, or -Ø above). We thus have two elements, a verb and a subject noun phrase, related by a third element, an agreement suffix. Looked at in this way, English

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agreement manifests the canonical case of subject-verb agreement, a tripart relation involving subjects, verbs and agreement morphemes.

Not all languages show subject-verb agreement in this *canonical* manner, however. Consider for example, the Brazilian language Hixkaryana (Carib) (Derbyshire:1979, 1985). Abstracting for now over certain low-level complications, Hixkaryana, like English, has a subject agreement morpheme (a prefix), but there are options in Hixkaryana not available in English, such as omission of the subject NP.

(24) a w$_i$-   enyhoretxehkan uro$_i$
          1SUBJ- finished making I
          'I finished making it.'

      b. w$_i$-   enyhoretxehkan e$_i$
          1SUBJ- finished making ec
          'I finished making it.'

In Hixkaryana, it is possible to omit the subject (and, in fact, to omit the direct object). In (24), the person of the subject (but not the person of the object) is marked by a prefix on the verb (w-). This option taken by Hixkaryana is well known from so-called pro-drop or null-subject languages such as Italian or Spanish:

(25) a Yo habl- o
          I   speak- 1SG
             'I speak.'

      b. Habl- o
          speak- 1SG

      c. (Yo) habl- o
          I   speak- 1SG
          ≠ ('I speak it')

Spanish, like Hixkaryana, permits subjects to be omitted if the person of the subject is represented morphologically on the verb. Hixkaryana permits richer null anaphora than Spanish since (direct object) NPs may be omitted even when there is no morphological register of their person (even non-third person NPs) but, essentially, Hixkaryana and Spanish together differ from English along the same dimension; that is, there is not the same overt three way relation between a subject, a verb, and an agreement affix. For Spanish, it is customarily assumed that there is an empty category in subject position (*pro*) which triggers agreement with the verb, hence maintaining the three part agreement relation. The literature is less clear for languages like Hixkaryana; as we have seen work such as that by Jelinek (1983), etc., argues against the claim that there is a *pro* subject in rich Agreement languages such as Hixkaryana. We have discussed this question informally. For now we merely note that Spanish and Hixkaryana seem to differ from English in the optionality of an overt subject as the trigger of agreement.

Another type of agreement pattern differing from English is found in Yagua, also discussed above. As we have seen, in Yagua, both the agreement morpheme and the NP are optional in certain environments, though at least one must appear. Both the subject NP and the subject agreement morpheme may appear together but when

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this occurs the subject NP is in a different position than it occupies in the absence of subject agreement.[5]

(26) a. Pauro púúchi Anita
Paul   carries Anita
'Paul carries Anita'

   b. sa-   púúchi Anita
    3SG- carries Anita
    'He carries Anita'

   c. sa$_i$- púúchi Pauro$_i$- níí$_j$ Anita$_j$
    3SG- carries Paul-   3SG Anita
    'Paul carries Anita'

   d. *Pauro$_i$ sa$_i$- púúchi Anita
    Paul   3SG- carries Anita
    ('Paul carries Anita')

As discussed above, when there is no subject agreement (26a) the subject appears before the verb. The form in (26b) shows the optionality of the subject. In (26c-d) we see that when the subject occurs with subject agreement, the subject may not appear in the position preceding the verb but must instead follow the verb. Yagua differs from both English and Hixkaryana in that in Yagua (i) the subject is not only optional, it is in some cases obligatorily absent, and, (ii) the occurrence of the subject and subject agreement depends on positional factors, i.e. there is no absolute complementary distribution between subjects and subject agreement but there is position-relative

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5   As the reader may suspect from the following, the direct object agreement marker is required if the direct object is separated from the verb. We will discuss direct object agreement in Yagua in greater detail in a later chapter.

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complementary distribution. Again, whatever the analysis of Yagua agreement, it is not obviously a simple instance of the canonical agreement pattern discussed for English.

A fourth type of agreement pattern is represented by languages such as Irish (see particularly McCloskey and Hale:1983, Hale:1988 and Hale and Baker: forthcoming), Dogrib, Breton and others. In Irish it is possible to have either subject agreement or an overt subject, but not both.

(27) a. cuiri- m
          puts- 1SG
          'I put'

     b. cuireann Eoghan
         puts   Owen
         'Owen puts'

     c. *cuiri- m   mé
          puts- 1SG I
          ('I put')

In (27a) it is possible to have subject inflection with no overt subject. In (27b) we see no subject inflection but an overt subject and in (27c) we see the impossibility of having both subject inflection and an overt subject.

Irish is like Yagua in not permitting the cooccurrence of a subject NP in subject position with subject agreement. Unlike Yagua however, no repositioning of the subject yields a grammatical form. Again, if we think of agreement as the registering of the person and number of a subject (by an agreement morpheme) on the verb, Irish

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represents a superficial counterexample since the element registered (the subject) cannot cooccur with the register itself (the agreement morpheme).

1.2.2 The Outline of this Work

A theory of grammar must have an account of agreement which predicts the possibility of cases like Hixkaryana, Irish and Yagua. This is only to reach the level of descriptive adequacy (Chomsky:1965, etc.). It is reasonable to expect more. We would like to resolve fundamental issues such as 'why do languages have agreement at all?' 'do *all* languages have agreement, at some level of abstraction?' 'what is the relation between the nominal element *subject* and the element *agreement morpheme* and how do they differ with respect to the property: *satisfies the selectional requirements of a predicate?*'

This work is a contribution to a general theory of agreement. It will rarely be self-consciously so. As is natural with theories of such abstract notions as *case, word order*, etc., our focus will often be much narrower and concern phenomena far less abstract than the questions raised above. The goal, however, is the articulation of a theory of agreement which bridges the superficial gaps between the *canonical* type of agreement as discussed for English and the various *non-canonical* cases which appear (such as Irish, Yagua and Hixkaryana).

In this work, we approach the construction of a theory of agreement by consideration of four different sub-issues.

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The first of these sub-issues is the so-called *configurationality parameter.* It is well-known that there are languages (canonically Warlpiri, see Hale:1983) whose syntactic behavior is strikingly different from that of English. These *non-configurational* languages are marked by properties such as extensive null anaphora, lack of NP movement transformations, lack of pleonastics, free or *scrambling*-type word order and so forth, all absent from the canonical configurational language English. It is also well known (as summarized in Speas,1985) that some configurational languages have properties of non-configurational languages (e.g. Italian has extensive null anaphora) and some non-configurational languages do not have all the properties of non-configurational languages (e.g. Navajo has relatively fixed word order). Given this difficulty in characterizing the set of configurational and non-configurational languages, it is not obvious that there is a clear (bivalent) distinction between languages with respect to the properties of (non)configurationality. Of course, the theory of grammar must still have some means of accounting for the observed differences between English and Warlpiri or Warlpiri and Navajo. Jelinek (1984, following Hale, 1983 in part) argued that agreement played a role in distinguishing these two types of languages. She proposed that languages may differ with respect to which nominal elements (NPs or agreement morphemes) may satisfy the selectional requirements of lexical heads. Languages like Navajo and Warlpiri require the assignment of grammatical functions (subject and object) to agreement elements while languages like English and Japanese

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require the assignment of grammatical functions to noun phrases in argument positions. Thus, in some clear sense a *subject* in Navajo or Warlpiri is an agreement morpheme rather than a particular NP. We will continue to explore this view and its consequences in greater detail but we can see that this analysis of non-configurationality relies heavily on a theory of agreement which differs from the canonical view suggested for English. In Chapter 3, we develop a theory of non-configurational variance which rejects the binary configurationality parameter of Hale (1983), Jelinek (1984), Speas (1985) and Saxon (1985), as suggested above. We will argue that general principles of the theory of agreement (and the theory of Case) can account for configurationality without a separate parameter.

The second subissue we consider in this work arises from the fact that many languages show agreement with the direct object as well as the subject, many languages also show agreement inflection on prepositions and nominals. One such language with inflected prepositions is Irish, and the cooccurrence possibilities of this inflection are the same for prepositions as for subject agreement observed above. To see this, compare the following paradigms:

(28) a. cuirl-m   (28') a.   or-m
        puts- 1S   on-1
        'I put'   'on me'

     b. cuireann Eoghan   b.   ar Eoghan
        puts   Owen   on Owen
        'Owen puts'   'on Owen'

     c. *cuirl-m mé   c.   *or-m mé
        puts-1S I   on-1 1
        ('I put')   ('on me')

With both subject inflection and object of the preposition inflection, Irish permits either the inflection (28-28'a) or the NP (28-28'b) but not both (28-28'c). Yagua too has parallel agreement paradigms across categories: (for [29], Everett, 1989; p. 352; for [30], Payne, 1966; p. 448)

(29) a Pauro púúchi Anita
       Paul   carries Anita
       'Paul carries Anita'

    b. sa-   púúchi Anita
       3SG- carries Anita
       'He carries Anita'

    c. sa$_r$ púúchi Pauro$_r$ níí$_j$ Anita$_j$
       3SG- carries Paul-   3SG Anita
       'Paul carries Anita'

    d. *Pauro$_i$ sa$_r$ púúchi Anita
       Paul   3SG- carries Anita
       ('Paul carries Anita.')

(30) a. jụmuñu vìImú
      canoe   inside
      'Inside the canoe.'

    b. rà-   vìImú jụmuñu
      3INAN - inside canoe
      'Inside the canoe.'

    c. rà-   vìImú
      3INAN - inside
      'Inside it.'

    d. *jụmuñu rà-   vìImú
      canoe   3INAN - inside
      ('Inside the canoe.')

With postpositions—as with subject agreement--the object of the postposition can appear before the postposition (29,30a) only if there is no inflection on the postposition. If such inflection occurs then the object must follow the postposition (29,30c).

Other languages do permit inflection on the postposition to cooccur with an overt NP. One of these languages is Navajo (Hale:1988) which, as noted above, requires an agreement marker on the postposition and which optionally permits an overt NP.

(31) a. tl'óół y-   ee
      rope 3sg- with
      'with a rope' (Hale, 1988; 4)

    b. y-   ee
      3sg- with
      'with it'

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a. *tl'óół ee
rope with
('with a rope')

The obligatory nominal element in Navajo PPs is the agreement morpheme and the NP is fully optional.

An obvious question raised by the appearance of inflection on verbs (referring to subjects) and on postpositions (referring to the object of the postposition) is whether both of these cases are examples of agreement. There is a theory-internal reason to suspect that they should not be the same. Consider the structure of a simple English declarative sentence with a PP, simplified somewhat for ease of exposition.

(32)

```
                        IP
             _____/ |
        Spec, IP         I'
            |           /  _____
           NP          I         VP
            |         / \       /  _____
            |      AGR tense   V        PP
            |         |        |       /  _____
            |         |        |       P       NP
            |         |        |       |        |
          John      PAST     drove    to     Boston
```
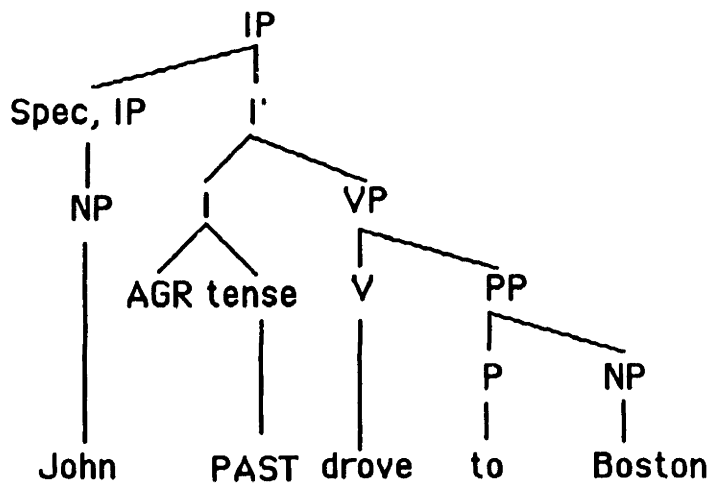
Note that the agreement element (AGR) in Infl (I) does not c-command the subject NP. These elements may be coindexed by virtue of being in a Spec-head relation (see Chomsky, 1985) but there is no structural c-command. Compare the relation between AGR and

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subject with the relation between P and its NP object. The NP object is not a specifier of P, it is a complement of P and naturally the P c-commands (governs) the NP object. If agreement is a structural relation between lexical heads (such as I^0) and Specifiers (such as the NP subject) mediated through an AGR node in the head, we are led to suppose that the structure of Irish prepositions is as follows:

(33)

```
        PP
       ┌──────────
       P         Spec, PP
      / \           |
     /   \          |
    P   AGR        NP
```
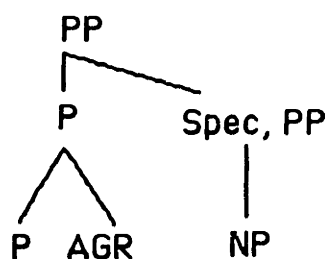
There are a number of consequences of the claim that objects of prepositions in Irish or Navajo type languages are in Specifier positions rather than complement positions.   Naturally these consequences will have to be explored in some detail before we reject or accept the claim made by this analysis. One consequence (which is not obvious) is that we do not have an explanation for the relation between the properties (i.) *being a Specifier* and (ii.) *being a trigger of agreement.* It would be uninteresting to claim that Irish has prepositional agreement because objects of prepositions in Irish are in Spec positions since the only motivation (so far) for claiming that PP objects are in Spec positions comes from the fact that they trigger agreement. It is not clear that there is a factual correlation between the property of being a Spec and the property of triggering agreement.

The reverse does not seem to be the case. For example, though there is no (overt) subject agreement in languages like Chinese we would not want to claim *ipso facto* that subjects in Chinese are in complement positions (though in principle there could be arguments for this).

The above discussion should make the point that a number of issues are raised by object agreement and agreement inflection on nominals and adpositions. These issues are clearly bound up with a general theory of agreement.

The third subissue of a theory of agreement we will explore in this work is also concerned with inflection across categories. Apart from deriving a theory of agreement, the theory of grammar must develop a theory of incorporation. Incorporation (see Baker:1988, for example) is a common grammatical process in which X^0 elements attach to lexical heads. In Hixkaryana incorporation seems to be confined to N^0s which refer to body parts, and is used only in the formation of a limited set of idioms:

(34) a. ryexemnukyaha

    ro-   **exe**-   munuku- yaha
    1OBJ throat press   NONPAST
    'he/she/it is choking me.'

  b. kahowosi

    ki-   **aho**- wo- si
    1SUBJ arm inject IMP
    'let me inject you.'
    i.e.: 'let me inoculate you.'

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This process seems distinct from agreement (for example in Carib it is only possible to have one agreement morpheme/syllable per surface: Alexander, 1989b and the incorporated noun does not count toward this total) but there are reasons to suspect that incorporation and agreement may converge. Hale (1988) assumes incorporation to account for the Irish type cases discussed above, and reprinted below:

(28)	a.	cuiri-m puts- 1S 'I put'	(28')	a.	or-m on-1 'on me'
	b.	cuireann Eoghan puts Owen 'Owen puts'		b.	ar Eoghan on Owen 'on Owen'
	c.	*cuiri-m mé puts-1S I ('I put')		c.	*or-m mé on-1 1 ('on me')

Following Hale, assume that the NP position (subject in 28 and PP object in 28') in Irish can be filled at D-Structure by either an NP [such as *Eoghan*] or a pronoun (N^0 or a determiner, D^0) [such as -*m*]. If the NP position is filled by a D^0 it may incorporate into the V or P, leaving a trace. It is impossible to generate a full NP in this position also. Only a pronoun, which may be incorporated, or an NP can be generated (i.e. only one can appear). Thus, this analysis accounts for why agreement inflection is in complementary distribution with NPs in Irish. It does so with the assumption that Irish really does not have agreement *per se*; it simply has incorporation of pronouns.

As we will discuss in Chapters 4-5, Hale's analysis risks the distinction imposed by Jelinek between languages in which NPs assume grammatical functions (configurational languages) and those in which agreement elements assume grammatical functions (non-configurational languages). Briefly stated, the problem is that there are non-configurational languages which show the Irish pattern of incorporated agreement. Following Hale, we must assume that in these languages agreement morphemes appear at D-structure in NP positions (prior to incorporation). If this is so then they are assigned θ–roles in these NP positions and, hence, θ–roles are assigned to NP positions in non-configurational languages. This is paradoxical under a Jelinek-style analysis since non-configurational languages are defined as being languages in which thematic-roles are assigned to agreement morphemes and not to NPs. Either Hale's analysis of incorporated agreement inflection or Jelinek's analysis of non-configurational variance must be altered or given up completely. The relation between these two analyses will occupy Chapter 4.

The fourth and final subissue of a general theory of agreement we will discuss concerns an issue latent in the above discussion: what is the relationship between an NP and an agreement morpheme, particularly in non-configurational languages? To oversimplify somewhat, non-configurational languages are marked by the optionality of NPs and the obligatory character of agreement morphemes. This suggests that lexical heads select agreement morphemes rather than NPs to discharge their selectional restrictions. How, then, are NPs

selected when they do appear? Does the lexical head select them, does the agreement morpheme select them or is there another system altogether? We will see evidence (first presented in Chapter 3) that suggests that *agreement morphemes* select NPs in non-configurational languages. In Chapters 4-5, we will see evidence pointing in the opposite direction, evidence that suggests that, for example, verbs *attempt to have* Specifiers, even though the grammatical role of the NP in Specifier position is actually assigned to an agreement morpheme. As will become clearer, it appears to be the case that Jelinek's analysis cannot completely be maintained because even languages in which agreement clitics bear thematic-roles seem to generate (a limited inventory of) NP positions. We will suggest that the position immediately adjacent to the verb behaves like a structural position in both Hixkaryana and Yagua, though the languages behaves like Jelinek-type non-configurational languages.

Thus, this work will consider four interrelated subissues in the theory of agreement, focusing on how issues in the theory of agreement border on issues related to non-configurationality. It is not claimed that this subset of issues is exclusive or even particularly appropriate as the locus of study for *all* of the general questions this work addresses. This partitioning of the question does have the advantage that it focuses on languages which are (1) under-studied; and (2) have hyper-rich agreement. It is a possible shortfall for the theory that the well studied languages, which have been the basis of work on agreement, are often languages without particularly rich

agreement systems. Obviously English fits this pattern but even so-called "rich Agreement languages" such as Italian have, from a comparative point of view, relatively weak agreement systems. We will suggest throughout this work that while *agreement is agreement*, a relation which does not particularly differ from English to Hixkaryana, "hyper-richness" of agreement does have interesting and convoluted syntactic consequences.[6]

1.3 Theoretical Assumptions

As previously stated, this work follows the Principles and Parameters approach of Chomsky (1985a, 1985, 1989). In this section, we outline some of the salient theoretical assumptions made in this work. Much of the discussion in following chapters is narrowly focused on issues concerning agreement and the representation of phrase structure in so-called non-configurational languages, consequently it is for *these* issues that the present section is an introduction, rather than for the entire Principles and Parameters approach. For such an introduction, see Cook (1988).

Initially note that it is a non-trivial claim that syntax is the proper locus of analysis for the subject matter discussed herein. One might imagine that the theories of phonology or morphology could be

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[6] The term "hyper-rich" agreement is not one we favor but it is forced on us by the fact that there is a class of languages called "rich Agreement languages" whose agreement systems are weaker than "hyper-rich agreement languages". In the next chapter we will suggest alternative terminology which avoids the problems of the "rich", 'hyper-rich" terminology, though at the expense of some clarity.

revealing for the discussion of agreement—agreement morphemes *are* parts of words and syntax is generally thought of as involving the study of orderings of words, not parts of words. Insofar as the present study is successful, then, it provides evidence that the classical definition of syntax (as confined to phenomena at the level of the word and beyond) is too narrow or, alternatively, that the principles that govern syntactic representations are applicable at other levels of structure (obviously the work of other researchers might suggest this conclusion, for example Baker, 1985). In any event, the questions 'what is syntax' and 'do syntactic principles find application at other levels of structure' find no ultimate (or *a priori*) answer in any syntactic framework.

As the name suggests, Principles and Parameters claims that there are two major components of any linguistic theory: invariant *principles* characteristic of all human languages and *parameters*— where parameter might be understood as a choice of two or more principles of grammar offered to the speaker with only one option being instantiated in the grammar that the child finally arrives at. One often discussed parameter is the null-subject parameter which determines for a particular language which, if any, noun phrases may be non-represented. As we have seen, English does not generally permit the null expression of NPs as Italian does. A child learning Italian hears sentences such as those in (35) while a child learning English hears only the form in (36a):

(35) a. lui parli
          he speak:3sg
          'he speaks'

      b. parli

      c. parli lui

(36) a. he speaks

      b. *speaks   c. *speaks he

Obviously the child does not *hear* the *absence* of forms such as (37b-c); what can a child in the construction of a grammar could conclude from the absence of such forms?   Notice that the grammatical English sentence forms are a subset of the grammatical Italian forms *mutatis mutandis*. Chomsky (1985b) suggests that the child selects the grammar generating the smallest corpus of sentences consistent with the evidence.   If this is correct, both Italian and English children will begin with a [-null subject] setting and eventually the Italian child will find his/her grammar in conflict with the data and shift to a [+null subject] value for the parameter.   Since the data that Italian is a null subject language is so readily available in the linguistic data available to the child, it would not be surprising if this *shift* occurred before the child ever produced a two word utterance— in which case it would be impossible to determine that such a parameter switching had actually occurred.

Another issue concerning the null subject parameter and, consequently, parameters in general is the fact that languages differ in the extent to which they permit null expression of nominals.   Hence,

Italian permits null subjects, generally requires direct objects to be expressed, and always requires expression of the object of a preposition. In Navajo and Warlpiri, however, full NPs are generally never required (though perhaps some idiomatic expressions are exceptions, Ken Hale: P.C.). In Irish, full NPs are optional (in some sense—being in complementary distribution with inflection morphemes) for subjects, genitive possessors and objects of prepositions but direct object NPs are required. One might wonder if this entails that the null subject parameter has several values. If it does, this does not represent a problem with the model discussed in Chomksy (1985b), since, again, all children could assume the [-null subject] value, move to the Italian setting [+null subject] and then to the Irish setting [+null subject, object of P, Spec of N] and finally be forced to the Warlpiri and Navajo setting [+null NPs,∀NP]. Though this is not unnatural, a more likely scenario is that there is some principle from which it is possible to *derive* the different null subject properties of Italian, Irish and Navajo. If this were the case, if these difference *were* independently derivable from some Principle P, [+null subject languages] might simply be subject to the principle 'make NPs optional to the extent permitted by P' in which case we could keep the two-valued null subject parameter. But, if there is some principle of the formed outlined, it might be possible to extend it to English; this is to say that Principle P might exclude null subjects in English as

null objects of prepositions are excluded in Italian—in which case, of course, there is no null subject parameter at all.[7] Actually, there might be a more limited type of parametric difference. Luigi Rizzi has suggested that if we consider the six basic morphological distinctions in the verbal paradigm (1st, 2nd, 3rd person, singular and plural), languages with five or six actual distinctions [in the sense of note following] are always null subject languages while those with three or less are never null subject languages (such as spoken French with three distinct forms) while languages with four actual distinctions may or may not be null subject languages.[8]

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[7] If this view is accurate, presumably both Principle P and the principle 'make NPs optional to the extent permitted by Principle P' would be related to the Recoverability Condition on deletion which would have to be suitably recast. We would probably want to avoid having recoverability be a meta-condition on grammar formation but it might be that, from the point of view of the grammar, null expression of NPs is preferable and that pragmatics forces expression of NPs. Since NP omission in English is never recoverable, except in the Imperative, we are unable to see that, again from the point of view of the grammar, English and Italian are essentially identical. This would be parallel to the fact that English permits gapping of verbs (John ate apples and Bill pears) while languages with richly inflected verb such as Hixkaryana do not (*rakoronomehe John, [V e] Bill, John helps me and (I help) Bill) simply because the information on the verb cannot be reconstructed from context—the omission is unrecoverable. It would be odd, under these circumstances, to assume that there was a gapping parameter to explain the Hixkaryana-English contrast since both languages gap to the extent permitted by recoverability though, again, in English there are many environments for gapping in which the second verb is not omitted. It is not clear whether the null-subject parameter is particularly different for this case and whether a non-parametric account is not more appealing.

[8] Written French: je, tu, il, ils [parl], vous parlez, nous parlons. 3 distinct verbal forms; Spanish (Spain) imperfective: yo, él (& usted) hablaba, tú hablabas, nosotros hablamos, vosotros hablasteis, ellos (& ustedes) hablaron. 5 distinct verbal forms; Spanish (Latin America) imperfective: yo, él (& usted) hablaba, tú hablabas, nosotros hablamos, ellos (& ustedes) hablaron. 4 distinct verbal forms.

For the present discussion we may put aside these issues of parametric variation—what is important is that from the point of view of a fully formed grammar (say that of an adult speaker) the distinction between a principle and a parameter is probably of no real consequence since both the principles and the particular parametric variations are fixed for the grammar at issue. If, however, principles are immutable and parameters may be altered *even* in adult grammars during periods of language change, the distinction might become crucial.

In addition to the claim that the theory of grammar requires both principles and parameters, P&P also maintains that the grammar is made up of modules which, though acting separately, conspire to determine the form of utterances. These modules are listed below:

(37) i.   θ-theory
     ii. Case theory
     iii. Binding theory
     iv. Bounding theory
     v.   Control theory
     vi. Government theory

Each of these subcomponents of the grammar consists of a small number of simple principles (with a limited degree of possible parametric variation). *θ-theory*, which we have discussed briefly in this work, concerns the assignment of thematic-roles such as agent and patient. It requires a local relation between the assigning element and the NP to which a θ-role is assigned—the exact nature of this relation is a subject of *government theory*. Government theory

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concerns, first, the relation between lexical heads and arguments with which they are in construction such as, classically, the relation between a verb and its direct object. Government theory is also concerned with the local relations used in Case and θ-role assignment. As should be evident, government theory interacts with other components of the grammar—Chomsky (1985a) discusses this in great detail. One of the modules most affected by government theory is Case theory which concerns the assignment of grammatical cases such as nominative and accusative to NPs. In English, these cases are generally abstract (non-overt) but such case distinctions are overt in many other languages, such as Japanese. Some languages, notably Warlpiri, have considerably richer case distinctions and such richness must also be permitted by Case theory.[9] *Binding theory* is concerned with the reference of pronominal elements, forms which are dependent on other elements for their reference. One particular type of empty pronominal category (called PRO), the 'empty' subject of infinitivals such as *John wants* PRO *to win* is the concern of *control theory*. Finally, *bounding* theory concerns limitations on the rule move-α (see below) and contains the subjacency condition.

This work is primarily concerned with the assignment of thematic-roles and naturally we will discuss government and Case assignment. We will not discuss Control theory, Bounding theory or Binding theory in this work.

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9 Note that in this work, as is customary, we capitalize case (Case) only when used in the technical sense of Case theory; e.g., *nominative case, Case assigner.*

The modules discussed above apply to operations at several levels of structure. Principles and Parameters follows the T-Model (see Chomsky and Lasnik, 1977).

(38) The T-Model (Chomsky and Lasnik, 1977)

D-Structure

↓

S-Structure

PF Component   LF Component
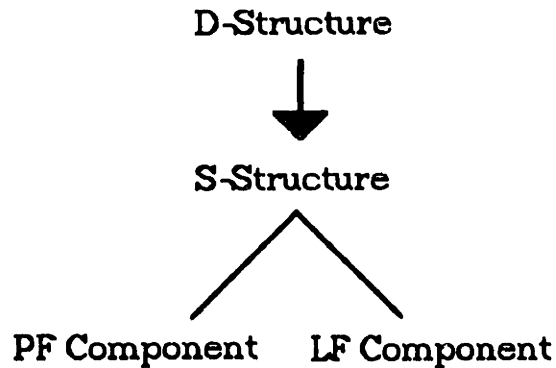
Surface structure (or S-structure) is the output of the syntax which is interpreted by Phonetic Form (sound) and Logical Form (meaning). We will explore the properties of Deep Structure (or D-structure) below; for now, we may make a simple distinction between D-Structure and S-Structure on the basis of simple declaratives and wh-questions. Consider the following pair of sentences:

(39) a   John put the car in the garage.
     b.   Where did John put the car?

In (39a), the verb *put* has a following direct object and prepositional phrase. In declarative sentences, *put* requires both arguments, hence:

(40) a   *John put in the garage.
     b.   *John put the car.

The requirement that *put* have an NP and a PP argument is inoperative in wh-questions, however, since one of these arguments may be missing:

(41) a. What did John put in the garage?
      b. Where did John put the car?

It is possible to show a relation between the wh-word in sentence initial position and the missing argument of the verb. In (40a-b) we saw that the verbs complements may not be missing in declarative sentences, further a wh-word cannot occupy sentence initial position unless there is a missing argument with which it may be construed.

(42) a. John died.
      b. *John died Mary.
      c. *What did John die?

In (42a-b), we see that *die* does not select a direct object. With *die* it is also not possible to have a wh-question construed with a direct object. We may capture this generalization by assuming that wh-questions are formed by moving a wh-word from inside the sentence to the sentence initial position. We may derive the sentence in (43c=39b) from (43b) below:

(43) a. Where did John put the car?
      b. John put the car where?
      c. Where$_i$ did John put the car t_i?

In (43b) the requirement that *put* have a locative argument is satisfied (and, of course, 43b *is* a grammatical *echo* question in

English) and (43) shows the representation of the sentence after movement: the wh-word is in sentence initial position and in locative position there is an empty category (trace, or *t*) which is coindexed with the moved wh-word. D-structure is the level where the selectional requirements of lexical heads are satisfied; so, if *put* requires a locative argument, that argument must appear at D-structure. D-structure may be transformed in a (constrained) number of ways, such as by wh-movement of phrases to sentence initial position. S-structure is the level of representation derived by these transformational processes operating on D-Structure and, as stated, is the input to the interpretive levels PF and LF, Phonetic and Logical form, respectively. We may fill out the T-model accordingly:

The T-Model

D-Structure

↓

transformational processes

↓

S-Structure

PF Component   LF Component

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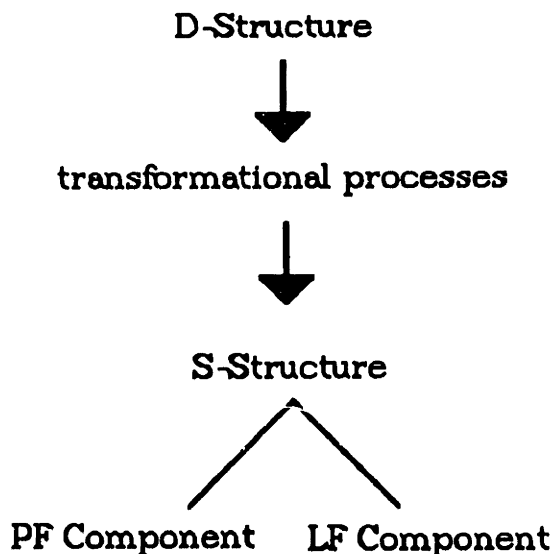
Principles and Parameters thus assumes two levels of syntactic structure—related by transformational processes. It is not obvious that P&P could not be construed as a single level theory (with, say, direct generation of gaps or traces) but we will avoid that issue here, treating P&P as a two-level theory (see Chomsky, 1989, note 12 for details; and Sag, et. al., 1986; 238-254, for an alternative view). Given this two-level theory, what determines D-structures?

1.3.1 D-Structure Representations

1.3.1.1 The Lexicon

We noted above that D-Structure is that level where the selectional requirements of lexical heads are satisfied. By selectional requirements we mean the types of arguments that verbs are required to appear with. *Put*, for example, requires both an NP and a locative PP argument. *Drive* is a verb very similar to *put* but *drive* does not require two arguments, it requires either an NP or a PP, though it may take both:

(44) a   John put the car in the garage.
     b.   *John put the car.
     c.   *John put in the garage.

(45) a   John drove the car to Dallas.
     b.   John drove the car.
     c.   John drove to Dallas.

We may describe the properties of *put* using the following notation.

(46)   *put*, V, ___ NP, PP

The notation, called a subcategorization frame, records that *put* is of category V and obligatorily appears before a noun phrase and a PP. Some verbs, such as *believe*, require more complicated subcategorization frames. *Believe* requires that its complement be either a NP (*John believes Mary*) or a subordinate clause (*John believes that the world is oblong*). We may express this through the notation below:

(47)   believe, V, ___ $\left\{ \begin{array}{c} S \\ NP \end{array} \right\}$

The curly brackets ({ }) indicate that there is an option in satisfying the subcategorization of the verb. Subcategorization can be quite complicated, even a fairly simple verb like *drive* raises difficulties, since it may either have a PP alone (*John drove to Dallas*) or the pair NP and PP (*John drove the car to Dallas*) and, in fact, and it may be that *drive* may surface without either, insofar as *John drove* is acceptable.

(48)   drive, V, ___ ((NP), PP)

The parentheses indicate that the enclosed item is optional.

The words of any language show a great deal of idiosyncrasy. This information can be quite specific. For example, the fact that the verb *to crane*, (*he craned his neck*) requires that the craned neck be that of the craner (**he craned my neck*). This is, of course, very

specific information about the verb *to crane* which all speakers of English have come to know, but it is an idiosyncratic fact about a particular word. Such idiosyncratic facts must be learned separately. On the other hand, the fact that the plural in English is formed by some reflex of /-z/, is a general fact about the language. A child learning that *lad* /læd/ has *lads* /lædz/ as its plural with the /-z/ requires very little data to assume from *day* /dey/ that its plural is /deyz/. Certainly children do not need to learn most English plural forms separately, those which are regular, or are formed by rule, have a different status than those not formed by rule, viz. *ox~oxen*. In Principle and Parameters (among other theories), the particular facts of a language, those which do not follow from general facts about the language, are expressed in the *lexicon*, the mental dictionary of the language. Irregular plurals must be listed in the lexicon since they must be learned by children as special or irregular cases. Information about subcategorization must be listed in the lexicon as well since this is information about particular words. This is easily demonstrated. Knowing that a word is of category noun tells us that its plural is one of the allomorphs of /-z/ but knowing that a word is a verb does not tell us what type of complements it takes. There is presumably an upper bound to the idiosyncrasy permitted in the lexicon, and, hence in the language. There could probably not be a language in which each noun had an irregular plural, for example. Whatever the extent of permitted idiosyncrasy, it is presumably finite though not small. In this work, we will generally take subcategorization and other lexical information as a

given. Since our focus will be on general properties of human language, we will of course concentrate on general properties of particular human languages. Consequently, the lexicon in general and the lexical properties of particular words will not enter our discussion. When we claim that D-Structure satisfies the selectional requirements of verbs, we will not be precise about just what those properties are— though, of course, it is possible to be precise.

Thinking about the lexicon more abstractly for now, consider the type of information that we have included in our lexical entry for *put*.

(49)   *put*, V, ___ NP, PP

This entry provides a gap (___) to show that *put* appears before its NP and PP complements. We already showed (§1.1) that it is a general fact about English that verbs precede their complements, hence the impossibility of the forms below:

(50)   a   *I the car put in the garage.
       b. *I in the garage put the car.
       c. *I in the garage the car put.
       d. *I the car in the garage put.

Since the lexicon contains only particular facts about words, it is not appropriate to stipulate that *put* precedes its complement. As suggested above, we want this to follow from general facts about English such as Case and θ-theory. We can simplify the lexical entry above to the following form:

(51)   *put*, V, NP, PP

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This lexical entry still contains general facts about the language. It stipulates that the direct object NP precedes the PP argument but it is a general fact that direct objects in English immediately follow their verbs, as can be seen from consideration of *drive* and *hid*, two verbs which may also take the array NP PP:

(52) a   Brian drove the car to Detroit.
      b.   *Brian drive to Detroit the car.

(53) a   Brian hid the car in the park.
      b.   *Brian hid in the park the car.

We thus don't have to specify the ordering of NP PP since this should be made to follow from general principles of the language—again, perhaps Case and θ-theory. We may simplify our subcategorization frame further:

(54)   *put*, V, NP PP

This type of subcategorization, specifying the category of the head's complement(s) is called c-selection. This method alone will not suffice to adequately express the selectional properties of verbs. For example, the following sentences are *categorially* consistent with (54):

(55) a   ! Neal put generosity beside Monika.
      b.   ! Neal put the car with aplomb.
      c.   ! Neal put mustard with a car.

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These sentences are deviant because they do not respect the semantic-selection (*s-selection*) properties of verbs. *Put* requires a putter, a put thing and a place where the thing is put. We may refer to these as *agent, patient* and *locative* arguments. Combining these types of selection, c-selection and s-selection, we get the following subcategorization for *put*.

(56)   *put*, V, [NP PP] <Agent, <Patient, Locative>>

The square bracket describes the categorial requirements of complements to the verb (notice that the categorial status of the subject is unspecified: it follows from general facts about English). The angle brackets describe the semantic type of the arguments which must appear with *put*. The agent argument is special because it is reserved for the subject. The other two arguments are assigned to the verbs complements, the NP and the PP. Just as we saw that NPs precede PP, we could show that patients precede locative arguments in English—hence we do not have to specify that the NP receives the patient argument and the PP receives the locative. These semantic arguments, *agent, patient, locative,* etc. are called thematic-roles or θ-roles.

Note that the agent θ-role is underlined in the subcategorization of *put* and we indicated that it was special since it is assigned to the subject. More formally, we make a distinction between the external θ-role and internal θ-roles. An internal θ-role must be assigned internal

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to the phrase headed by the selecting category, i.e., a verb's internal θ-roles must be assigned inside the Verb Phrase. A verb's external θ-role must be assigned outside VP. We thus get the following θ-structure for *put*:

(58) [S NP+AGENT [VP *put* NP+PATIENT PP+LOCATIVE]]

This structure is consistent with both the c-selection and the s-selection of the verb. Though very simple, the subcategorization in (57) provides a great deal of information about *put*. The structure in (58) does not exhaust the possibilities of expanding sentences with *put* of course. It is possible to include adverbials for example and other optional material.

(59) a   Mark put the car in the garage with aplomb.
     b. Mark put the car in the garage Friday.
     c. Mark put the car in the garage with aplomb Friday.

Although *put* may appear with these optional elements, it is not required to do so and, further, it is not a particular fact about *put* that it may appear with them. Subject to some pragmatic constraints, any verb may appear with them.

(60) a   Jess shaved with aplomb.
     b. Jess shaved Friday.
     c. Jess shaved with aplomb Friday.

Thus whatever permits these optional elements need not be specified in the lexicon, but rather should be abstracted as general facts about the language.

Other types of categories also have lexical entries. For example, the nominal *destruction* has idiosyncratic subcategorization information with respect to c-selection and s-selection:

(61) a.   Scott's destruction of the city angered Pierre.
     b.   The destruction of the city angered Pierre.
     c.   *Scott's destruction angered Pierre.
     d.   *The destruction angered Pierre.

(62)   destruction, N, [NP] <(agent), patient>

Destruction requires a patient but its agent is optional, indicated as usual with parentheses. Further, though its complement appears after *of*, we have listed the c-selection of the complement as NP, for technical reasons discussed below. We may want to assimilate the subcategorization of *destruction* to that of *destroy*, a verb with which it shares properties. We will not be making that assumption here, instead will be adopting the lexicalist hypothesis (see Chomsky, 1970 for details).

There are other interesting aspects to the lexicon but the discussion here is sufficient background for the present study.

1.3.1.2 X-Bar Theory

Having discussed the treatment of individual words in Principles and Parameters, we may now turn to the treatment of phrasal and sentential groupings of words. We will be assuming X-Bar theory (or $\overline{X}$-theory), see Chomsky, 1970; Jackendoff, 1977; and Stowell, 1981.

$\overline{X}$-theory, relativized to English, is composed of the following principles:

(63) $\overline{X}$-theory

   i.   XP ———> .... X ....
   ii.   X" ———> Specifier X'
   iii.   X' ———> X complements

The first principle states that a phrase of category XP always contains an X, hence VPs contain Vs, NP contains Ns etc.   To demonstrate principles (ii.-iii.) note the following phrase marker:

(64)

```
                    NP = N"
                   /      \
               SPEC        N'
              /    \       /  \
            NP    POSS    N    PP
            |      |      |    / \
            |      |      |   P   NP
            |      |      |   |    |
          John    's   photo of  Mary
```
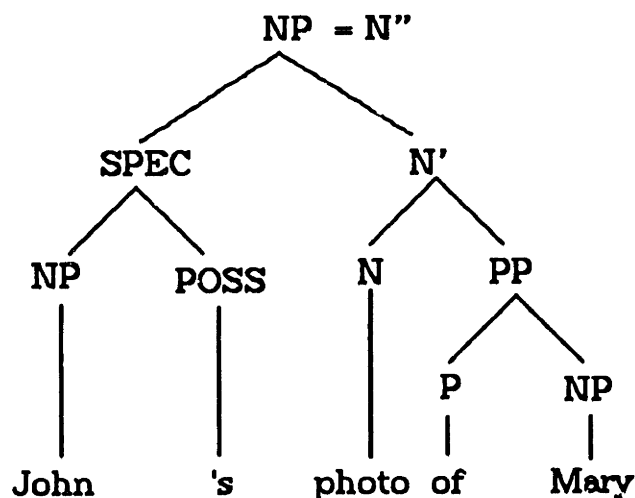
Complements are familiar from our discussion of the lexicon. Complements are phrases which are selected by a head and which follow that head. Specifiers precede their head, need not be phrases (*the photo of Mary* vs. *John's photo of Mary*) and are not as closely linked to their heads—are more likely to be optional, for example.

Given this informal characterization of basic English phrasal structure applied to NP, we can ask 'what types of categories (heads) are there in English'?. Following Chomsky (1970, 1985), we assume that there are six basic parts of speech. The first four of these are: Noun (N), Verb (V), Preposition (P) and Adjective (A). These four categories conform to principle (iii.) of X-bar theory, so we have the following types of structures depending on our choice of X.

(65)

```
                    XP
                   /  \
                  /    \
              SPEC      X'
                       /  \
                      /    \
                     X      PP
                     |     /  \
                     |    P    NP
                     |    |    |
         N  =  photo of       Mary
         A  =  angry at       himself
         V  =  drove to       Dallas
         P  =  out   of       Africa
```
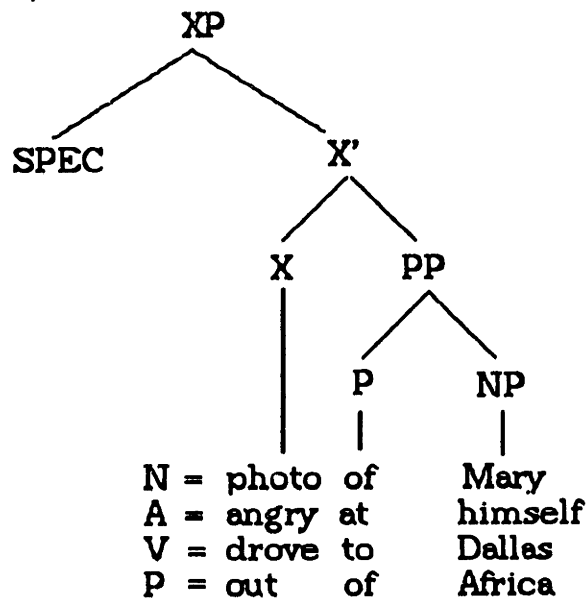
All four lexical heads fit naturally into the same frame (perhaps with the exception of P which generally requires an NP complement) but the four categories do not behave uniformly with respect to Specifiers:

(66)

```
                    XP
                   /  \
                  /    \
               SPEC    X'
                |     /  \
                |    /    \
                |   X     PP
                |   |    /  \
                |   |   /    \
                |   |  P     NP
                |   |  |      |
```

N =	John's	photo	of	Mary
A =	very	angry	at	himself
V =	just	drove	to	Dallas
P =	right	out	of	Africa
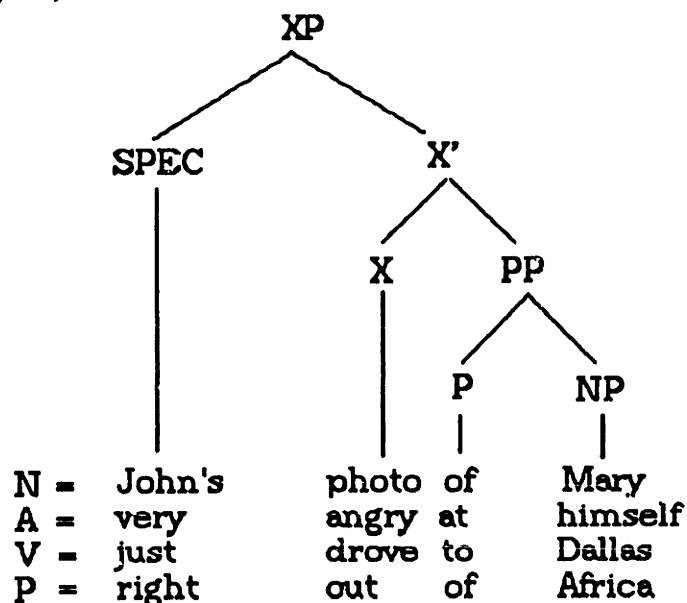
Although each of the categories permits the appearance of a category preceding the head, these preceding elements don't form a natural class. Nominals, for example, permit an entire phrase to precede (in fact an NP + possessive marker) while the other categories do not permit phrases and also do permit NPs (*John's drove to Dallas). It might be that the best characterization of Specifier is, simply, non-complement—if we admit that A, V, and P have Specifiers. We could assume that of the four categories discussed so far, only Ns have Specifiers. When we discuss the other two categories (I and C) which do permit phrasal Specifiers, we could perhaps find a principled definition of Specifier. We will not make this move, however, since it would lose the uniformity of X-bar theory.

Turning now to the two additional phrasal categories assumed by P&P:, in Government and Binding theory, it was assumed that $\bar{S}$ was

the root node of sentence and that it dominated S and a category COMP, the landing site for wh-question formation. S dominated the subject NP and VP, hence:

(67)

```
                    S'
                   /  \
                  /    \
               Comp     S
                |       /\
                |      /  \
                |    NP    VP
                |     |   /  \
                |     |  V    NP
                |     |  |    |
              who_j can John see  t_j
```
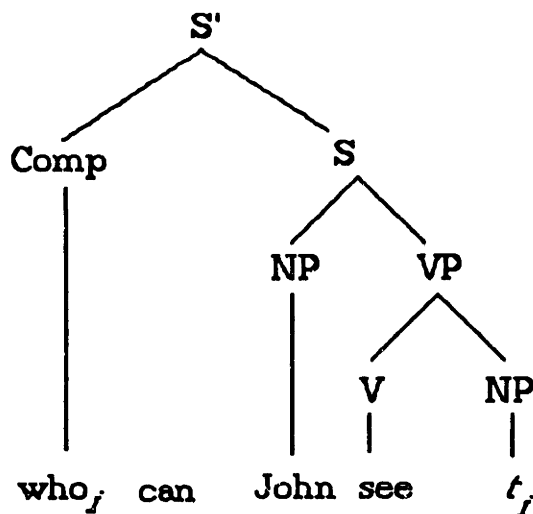
Here the wh-word moves from direct object position to Comp, leaving a coindexed trace. The position of the fronted 2nd position auxiliary (can) was something of a mystery in GB. Government and Binding theory also assumed that there was a category INFL (or inflection) which contained tense and agreement features (or AGR). This led to a structure as follows:

(68)

S'
Comp   S
        NP INFL   VP
            AGR tense V   NP
who$_j$ can John   see t_j
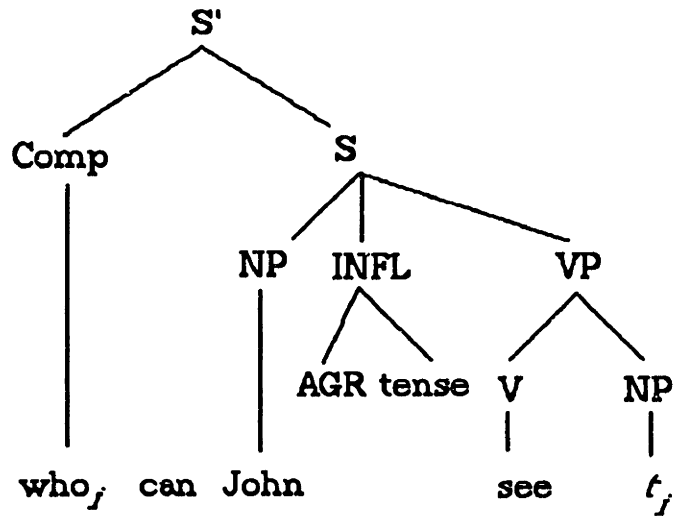
In GB, The categories Infl, $\bar{S}$ and Comp did not behave like their lexical counterparts (N,V,P,A) but Chomsky (1985) proposed that Infl (=I^0) and Comp (part of Comp Phrase or CP) be assimilated to the lexical categories. This provides a structure as follows:

(69)

```
                    CP
                  /    \
              SPEC      C'
               |       /  \
               |      C    IP
               |      |   /  \
               |      | SPEC   I'
               |      |  |    /  \
               |      |  |   I    VP
               |      |  |   |   /  \
               |      |  |   |  V    NP
               |      |  |   |  |    |
              who_i  can_j John t_j see  t_i
```
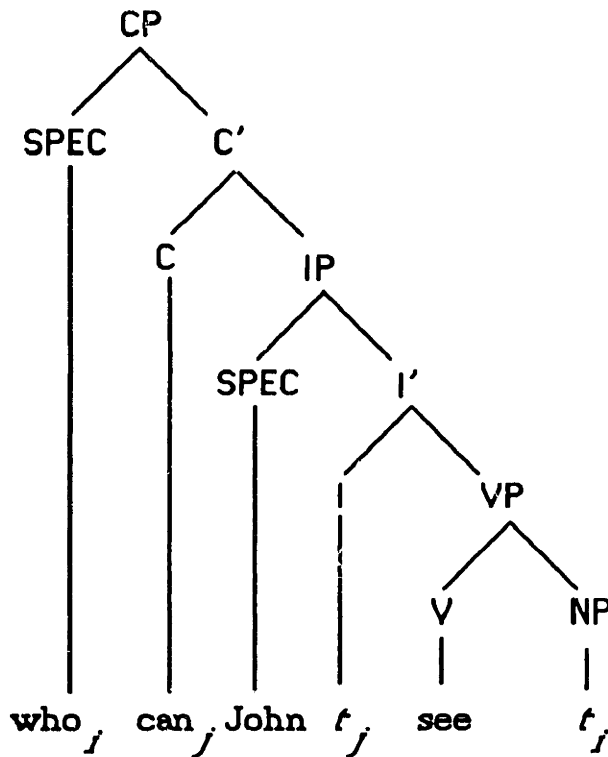
As suggested somewhat in the discussion of Jelinek above, in the languages analyzed in this work we will generally not be able to make very explicit claims about phrase structure. The defense of the above structure for English can be found in Chomsky (1985a, 1989).

1.3.1.3 θ-theory

D-structure is that level at which the selectional requirements of lexical heads are satisfied—or the level onto which the selectional requirements of lexical heads are directly projected. We may formalize this somewhat with the following principles of θ-theory.

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(70) θ-criterion (Chomsky, 1981; 36)
Each NP bears one and only one θ-role and each θ-role
is assigned to one and only one argument.

This principle requires that each of the arguments called for in
the s-selection of particular lexical heads actually appears at D-
structure. We may extend the application of the θ-criterion to other
levels by the *Projection Principle*:

(71) Projection Principle (Chomsky, 1981; 29)
Representations at each syntactic level (D-Structure,
S-Structure, Logical Form) are projected from the
lexicon, in that they observe the subcategorization
properties of lexical items. (i.e.: The θ-criterion holds
at all syntactic levels, *ibid.* at 38-39).

This will ensure that NPs do not *come and go* in the course of a
derivation. For verbs like *put*, this will guarantee that all of the
arguments called for by the lexicon appear at all levels, and in
particular that the θ-structure represented above and reprinted below
be instantiated throughout the derivation:

(72) [S NP+AGENT [VP *put* NP+PATIENT PP+LOCATIVE]]

This will have the correct results for verbs such as *put* which
have a θ-role for agents, but there are verbs which do not θ-mark their
subjects; so called *raising verbs* such as *seems* and *appears*.

(73) a.   John seems to have won the contest.
b.   It seems that John has won the contest.
c.   *John seems that he has won the contest.

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Verbs like *seems* show a dependency whereby a lexical referential subject requires that the infinitival subordinate clause lack a subject while if the matrix subject position is filled by a non-referential (*expletive, pleonastic,* or *dummy*) subject such as *it* (which are assumed to not receive θ-roles) , then there is an overt subject in a tensed subordinate clause. GB and Principles and Parameters derive such sentences by raising of the subordinate clause subject to matrix subject position.

(74) a   *e* seems [John to have won the contest]
     b.   John$_i$ seems [t_i to have won the contest]

The subject John receives its θ-role from the verb *win* in the lower clause. We know that *win* assigns an agent θ-role to its subject on the basis of sentences such as (75a-b):

(75) a   John won the contest.
     b.   *It$_{PLEONASTIC}$ won the contest.

In simple declaratives, *win* takes an agentive subject (75a) and cannot take a pleonastic, non-θ-marked subject. Thus, *John* receives a θ-role from *win* in its D-structure position in (74a). Since an NP may receive only one θ-role, it cannot also receive one in its S-Structure position in (74b). Hence, subject position of *seems* does not receive a θ-role and seems has the following subcategorization frame.

(76)   seems, V, CP

If *seems* does not assign a θ-role to its subject position, we must exclude the following sentence:

(77)   *(e) seems John to have won the contest.

This sentence is acceptable from the point of view of seems but clauses in English require an overt subject, even a dummy subject such as *it*. The sentence in (78) is forced by the *Extended Projection Principle* (79):

(78)   It seems that John has won the contest.

(79)   Extended Projection Principle (Chomsky, 1981; 26-27 as 'P'; 1982; 10)
         i.) All clauses have subjects;
         ii.) The θ-criterion holds at all syntactic levels.

Since subject positions are required by the Extended Projection Principle, it will follow that they may be non-thematic, i.e., may be a position to which a θ-role is not assigned. The Projection Principle will guarantee that all non-subject positions are assigned θ-roles. Since, an NP cannot receive two θ-roles, all movement must be from a non-subject θ-marked position to a non-thematic subject position. We still have to guarantee that if *John* does not raise (*It seems that John has won*) that the subordinate clause is tensed (*It seems John to have won*). This will follow from Case theory which we discuss below.

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1.3.1.4 Case Theory

Case theory, in Principles and Parameters, concerns the local relations formed pursuant to the requirement that every phonetically realized noun phrase must receive (generally) abstract case. This requirement is formalized as the Case filter:

(80) Case Filter (Chomsky, 1985b; p. 74, for example)
Every phonetically realized NP must be assigned Case.

Particular Cases are assigned by predictable case assigners so that nominative case is assigned (leftward in English) to the subject by the +tense aspect of INFL, accusative is assigned (rightward in English) by verbs and prepositions to their objects and genitive case is assigned intenal to NPs, perhaps by the genitive marker itself (assuming the KP analysis discussed in Chapter 3). Case is assigned locally, perhaps under the relation of adjacency for English (see Chomsky, 1985b, p. 82). Given the local or adjacent relation of Case assignment it follows that elements case dependent on a lexical head will appear adjacent to that head, exluding the following types of sentences:

(81) a. *John put in the mailbox the letter
b. *John wants to go [pp to [the mall] [the Kroger]]

Further, the fact that only designated assigners may assign particular Cases excludes, for example, the possibility that the subject of a tenseless clause can recieve nominative Case, excluding the sentence below:

(82) It seems [CP **he** to win the contest]

The noun phrase in subject position of the infinitival subordinate clause cannot be assigned Case since there is no adjacent tense marker to assign it Case and the verb is unable to assign Case into the projection CP. Therefore the subject (*he* in this example) does not recieve Case, violating the Case filter.

As demonstrated in §1.1, the somewhat overlapping local relations of Case and θ-assignment are the essential proximate cause of English fixed word order (though see our discussion of the KP analysis in Chapter 3 for an slightly different view of Case assignment).

1.3.2 D-Structure to S-Structure: Move-α

Thus far we have discussed D-structure, the level at which the selectional properties of lexical heads are most directly satisfied; the Projection Principle ensures that selectional properties are maintained throughout the course of a derivation. At D-structure the relation between a head and the arguments it selects is local, sufficiently local, for example, to permit thematic-role assignment. During the course of a derivation, through the mechanism of grammatical transformations, the relationship between a lexical head and its arguments may come to be non-local—it may in fact come to an apparently unbounded, as examples below show:

(83)   a.   Who$_i$ does John think that Mary says that Fred hopes
       t_i will come?

       b.   How$_i$ do you think Bill expects Fred to cut the meat t_i?

       c.   What$_i$ do you think Bill expects Fred to cut t_i?

We state that the relationship established by grammatical transformations is *apparently* unbounded because, though in principle a moved wh-word may be any number of clauses away from its D-structure position, there are certain locality conditions constraining movement of a wh-phrase. Consider the following sentences:

(84)   a.   *Who$_i$ does John think that Mary says that Fred hopes
       that t_i will come?

       b.   *How$_i$ does John wonder whether Bill expects Fred to
       cut the meat t_i?

       c.   ?What$_i$ does John wonder whether Bill expects Fred to
       cut t_i?

Without discussing the specific analysis of the contrasts between (83) and (84), the properties of S-Structure locality will apparently differ from D-structure locality. At D-structure, the crucial relations are a lexical head licensing its selected arguments but S-Structure permits relationships of a different kind. The sentences in (83-84) show this different relation: the relation between a moved phrase and its D-Structure position.

Since initial formulations of generative grammars (e.g., Chomsky, 1957) syntactic theory has posited transforming operations which

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convert D-Structure representations to S-Structure representations. One of these transformations was the the process which moved wh-words from sentence internal positions to sentence initial positions: this transformation is at work in (83-84). Given that there is a class of transformational rules then, the obvious questions are 'how many transformations are there?' 'what types of things can transformations do and what things can't they do' and 'what sorts of mechanisms constrain transformational operations'. Even syntactic theories which admit transformations may differ markedly in their answers to these questions. The position of the Principles and Parameters theory is that the actual content of the transformational operations should be maximally general, permitting the assumption that a child learning the language does not have to learn highly complex and language specific rules. Further, because of this strategy, Principles and Parameters is able to maintain the claim that the number of transformational operations is very small, perhaps limited to the single operation affect-α, that is: do anything to something. Obviously this highly general formulation permits an enormous number of problems but the positing of affect-a does not claim that transformational operations really may do anything, rather it claims that the limitations on what they can do is not a specific property of particular rules but instead follows from general facts about the particular language, or languages in general.

Even a very general transformation contains redundant information. Taking still the operation which puts wh-words in

sentence initial position, a transformation would have to minimally contain the following information:

(85)   WH-Movement (optional)

	Comp	X	wh
SD:	1	2	3
SC:	1+3	2	$\emptyset$

This transformation would take a wh-phrase from somewhere in a sentence and move it to the Comp position at the front of some clause. Inherent in the formulation is the claim that the movement is from right to left but this is a general fact about wh-movement in English and probably all languages. This rule also explicitly states that the movement is to the Comp position but this too is a general fact about wh-movement. The rule in (85) does not explicate these general facts, nor is it capable of distinguishing these general facts from the language particular fact that the rule is optional in English (since it is obligatory in Italian; Rizzi, 1982). In Principles and Parameters, the general facts about transformations are kept distinct from the specific facts. The question is whether there are any interesting language specific facts which a rule of the form in (85) may explicate. While P&P claims that there are interesting differences among languages, and, hence, interesting language specific facts, it claims that highly specific rule schemas such as that in (85) are not particularly revealing.

We will assume that the transformational component of human language is maximally simple of the form affect-α. Our theory then

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owes a characterization of what other parts of the grammar permit and constrain the application of this highly general rule. The independent application of the modular subtheories of the grammar have the responsibility of constraining affect-α.

Chapter 2
Approaches to Configurationality

In this chapter we concentrate on one particular line of inquiry into the syntax of exotic languages going under the term "non-configurationality". A salient feature of the non-configurationality debate is that much of the work has related to a series of articles by Ken Hale on the Australian language Warlpiri (Hale, 1973, 1981, 1982, 1983, 1985). This has the benefit that it has focused the discussion on a language representing a clear example of the phenomena the debate was concerned with; unfortunately this tendency obscured the relation between Warlpiri and languages which were less radically non-configurational, such as Navajo. In reviewing the literature, we begin with Hale's (1981) "On the Position of Warlpiri in a Typology of the Base," where many of the central issues of non-configurationality are first raised in a recognizable form, then moving to Hale (1982), Hale (1983), Jelinek (1984), Speas (1986) and Saxon (1985). In Chapter 3, we discuss and provide additional evidence for an alternative view of non-configurational proposed in Alexander (1986) called the *Case-Agreement analysis.*

2.1 "On the Position of Warlpiri in a Typology of the Base"

Hale's (1981) "On the Position of Warlpiri in a Typology of the Base," (POWTB) is recognizable as a contribution to the literature of

non-configurationality, though previous work by Hale on Warlpiri (most notably Hale, 1973) had been in circulation. In POWTB Hale discusses what was long seen as the central problem of Warlpiri syntax, its extremely free surface word order. Hale gives an example showing six possible arrangements of the terms verb, subject and direct object in a simple transitive sentence: (Hale:1981; 1)

(1)   a kurdu- ngku ka   maliki wajilipi- nyi   **SOV**
           child- ERG PRES dog   chase- NONPAST
           The child is chasing the dog'

        b. maliki ka kurdu-ngku wajilipi-nyi   **OSV**
        c. maliki ka wajilipi-nyi kurdu-ngku   **OVS**
        d. wajilipi-nyi ka kurdu-ngku maliki   **VSO**
        e. wajilipi-nyi ka maliki kurdu-ngku   **VOS**
        f. kurdu-ngku ka wajilipi-nyi maliki   **SVO**

The only restriction on word order in the above clause is that the auxiliary element (*ka* above) must appear in second position.

Warlpiri shows another dimension of free word order, permitting constituents, such as the components of a nominal expression, to be discontinuous. An example from POWTB (2) follows:

(2)   <u>kurdu-</u> <u>jarra-</u> <u>rlu</u> ka-   pala maliki wajilipi- nyi
        child- DUAL- ERG PRES- DUAL dog   chase- NONPAST
        <u>wita-</u> <u>jarra-</u> <u>rlu</u>
        small- DUAL- ERG
        The two small children are chasing the dog.'

As Hale puts it "a prominent [interpretation (2) can receive] is that in which the two words *kurdu-jarra-rlu* (child-DUAL-ERG) and *wita-jarra-rlu* (small-DUAL-ERG) form a single semantic expression..."

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To account for these facts, Hale makes a distinction between familiar, *X-Bar type languages* "which impose a hierarchical, or 'configurational', organization upon syntactic expressions" and those which do not impose such structures. Hale suggests the term *W-Star language* for this second type, the Warlpiri type. These languages have no phrase structure rules of the conventional X-bar type. To indicate this lack of phrase-structure, Hale suggests the following schema for Warlpiri sentential expressions. (Hale, 1981; 2)

(3)   E ---> W*

This expresses the claim that an expression (E) in Warlpiri is a string of words (W) where string length is arbitrary. The W-Star schema has often been misunderstood as asserting that Warlpiri *has* a phrase structure component and that (3) is *the rule* of Warlpiri. In fact, as Hale proposes it, the W-Star schema is the defining criterion for a type of language lacking phrase structure rules. As he notes (p. 3) "It is important, I think (though I am not absolutely certain about this), not to misconstrue the schema (4 [our 3]) as a kind of phrase structure rule, defining some sort of 'flat' phrase structure configuration".[1]

The empirical difference between configurational languages and W-Star languages as claimed by Hale is to be stated over the availability of gaps (or empty categories). As Hale writes:

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[1] A factor perhaps leading to misunderstanding of Hale's claim is that in Hale (1982) he does propose a basically flat structure for Warlpiri.

An X-bar language will have phrase structure rules. There is, therefore, the possibility that a phrase structure rule can be optional, so that a position in phrase structure can be unfilled. Thus, for example, an entity of the form [NP e] can exist in an X-bar language. There can, for example, be an empty noun phrase in subject position, or object position, etc., simply by virtue of the optionality of the phrase structure rules which expand NP. In the conception of W-Star grammar which I wish to put forth here, this is an impossibility. There can be no such entity as [NP e]—there are no phrase structure rules, and there is accordingly no way in which a phrase can be left unexpanded. Further, I would like to assert that there are no stipulated 'positions' in W-Star grammar—i.e., no positions like 'subject position', 'object position', 'specifier position' or the like. The only notion of position that makes sense in a W-Star grammar is the relative linear position of words (and morphemes within words, of course) in strings which constitute genuine expressions of the language. Since there are no stipulated positions, no such positions can be unfilled—thus, the notion 'gap' does not make sense in W-Star grammar. [p. 3-4]

Some claims here must be *translated* into the Principles and Parameters framework. For example, Hale's identification of empty noun phrases with optionality in phrase structure would no longer find favor. Instead, empty noun phrases, as in passive or raising, would most likely be identified with absence of θ—role assignment to the *empty* position. Some of the assumptions made by Hale in the section quoted above were adopted by Jelinek (1983) such as the claim that there are no 'stipulated positions' or A-positions in Warlpiri and, of course, the absence of [NP e]. Leaving aside the full *translation* and consideration of Hale's proposal, much of the reasoning above is uncompelling, as discussed below; further, much work on non-

configurationality, by Hale and others, has reflected a bias against *gaps*, yet to be satisfactorily motivated.

First, we will discuss the sense in which Hale's analysis is uncompelling. The data of Warlpiri which Hale has cited, before making the argument against gaps quoted above, are the data from discontinuous constituents and extensive free word order. It is easy enough to see how the W-Star schema expresses these two facts since in this system it is possible to insert words in "any order"; in fact, free word order and discontinuous constituents are criterial for Warlpiri's being a W-Star language. Nothing about the W-Star schema *predicts* the existence of empty noun phrases (say [NP *pro*] for example) but nothing obviously *precludes* such a possibility either. One can imagine a W-Star analysis of Warlpiri permitting gaps, as directly below.

Warlpiri shows extensive null expression of nominal arguments (Hale 1981; p. 33):

(4)   wajilipi- nyi   ka-   pala
        chase-   NONPAST PRES- 3DUAL
        The child is chasing the dog'

Hale's suggestion that gaps are not possible in W-Star languages hinges on only one conception of *gap*. If we assume that gaps such as PRO are *real* NPs in sentences such as *John$_i$ wants PRO$_i$ to win*, generated by the phrase structure, nothing prevents generation of such a real NP as a subcomponent of a W-Star expression. This would be an expression such as: E --->[wajilipi-nyi ka-pala$_i$ pro$_i$]. Although

Hale's article was written before exploration of the properties of *pro* (a more likely candidate for a Warlpiri gap than PRO), we could generate empty NPs as follows:

(5)　　E ---> [NP *pro*]$_i$ wajilipi- nyi　　ka-　　pala$_i$
　　　　　　ec　　chase-　NONPAST PRES- 3DUAL
　　　They (two) are chasing it'

Consistent with a W-Star grammar, we could generate an empty subject coindexed with the DUAL number features in AUX. It would be incorrect (and uninteresting) to stipulate that sub-components of E in W-Star languages must be non-null. A Ø-tense marker (Hale, 1973; 310, etc.) must be generated as a W in E in Warlpiri since such a null tense marker may be a host to an agreement clitic. Given this, it seems *ad hoc* to reject null NPs ([NP *e*]) in Warlpiri.

Note also that under a W-Star conception, the possibility of null NPs in Warlpiri has a very different cause than similar possibilities in Italian. Thus, in Italian rich Agreement licenses null anaphora whereas, under Hale's W-Star analysis, null anaphora in Warlpiri, which also has rich Agreement, is due to optionality in the phrase structure component.

We belabor the point about empty categories being possible in a W-Star language because it is fairly common to find analyses of non-configurational languages rejecting the appearance of empty categories without strong arguments for doing so (as, for example, in Alexander, 1986) when it may turn out that the strongest argument against empty

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categories in most non-configurational languages is that they do no particular work in any analysis (though see our discussion of Paul Platero's, 1982, analysis of Navajo in §1.2). This should be evident from the Warlpiri example just cited. There is nothing particularly interesting about the claim that any empty NP can be inserted 'somewhere' in a Warlpiri string of words. In fact, it should be possible to generate any number of them within Hale's conception of a W-Star language, filtering out all those which find no appropriate interpretation (E --> ...pro_i pro_k pro_m pro_b...). Again, there is no obvious benefit in doing so, but such a move is consistent with Hale's W-Star analysis.

We must provide an explication of the notion 'non-configurational (or W-Star) language.' Hale (1982) includes an interesting discussion of the possible criteria of W-Star languages that has been largely ignored in work by others in this area (exceptions being Hale, 1985 and Speas, 1986). Hale notes that it would be surprising to find W-Star languages which use "dummy" (pleonastic) noun phrases such as English *it* or Danish *der* "whose function is to *fill* a certain phrase structure position" (p. 37). He notes, however, that such a lack is not itself criterial for a W-Star language since languages such as Spanish, certainly a configurational language, does not use pleonastics.

Another possibly criterial property of W-Star languages is *scrambling type* (extremely free) word order, demonstrated for Warlpiri in (1) above. This extensive free word order is found in

languages which do not overtly seem like Warlpiri; Hale cites Uto-Aztecan Papago which lacks overt case but which has almost identical word order possibilities as Warlpiri. Hale suggests that scrambling type word order might correlate more strongly with W-Star languages than with X-Bar languages, but that it is not criterial.

Following on this, Hale makes an interesting point, virtually unique among researchers in non-configurationality (also made in Hale, 1985), that the distinction between X-Bar and W-Star languages may be a weak distinction from a typological point of view. He suggests for example (p. 41-42) that even within a *particular language community*, speakers may differ as to whether they use an X-Bar or a W-Star grammar—in Hale (1985) he again suggests that non-configurationality may be a property of particular constructions in particular languages (or, perhaps, in particular speech communities). Thus, for Hale, the fact that it is difficult (if not impossible) to provide a set of criteria defining the set of W-Star or non-configurational languages is not at all problematic. This point has been generally misunderstood in the literature of non-configurationality but is stated in all of Hale's work on the subject.[2]

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[2] This is a misunderstanding in which this author has participated. Speas (1985) refers to Hale's (1982) "diagnostics of configurationality" including, among others, free word order, extensive null anaphora, use of discontinuous constituents, lack of pleonastic NPs, etc, when Hale actually states that "there exist certain *superficial characteristics* [emp-mja] which are often mentioned in close association with the label (p. 1).", listing among these "free word order" though stating that it is "probably not criterial (p. 2)". As noted, we have participated in this misunderstanding in Alexander (1986) though in *this* work when we refer to Hale's position on non-configurationality, it will be with the understood caveat that Hale does not assert the existence of two clearly distinct classes of languages, configurational and non-configurational.

Moving beyond these general questions and returning to Hale's analysis of these two types of languages, he seems to assume from POWTB through later work that there are two types of ways that sentences may obtain semantic interpretations: first, by the interpretation of constituent structure in a manner familiar from English; and second, as mediated by a set of parsing strategies or rules of association, leaving this somewhat vague here. He writes: "The primary addition which a W-Star grammar requires consists in a system of *parsing principles* which determine the constituency and category of expressions present in a given concatenation of words. In effect, these parsing principles, impose a labelled bracketing upon strings of words." Semantics operates on a labelled bracketing of words in Warlpiri as in English. One might imagine (see arguments in Higginbotham, 1989; 466) that it is necessary that both languages share a very similar semantics. The difference between X-Bar and W-Star languages, then, is the source of labelled bracketing, coming from the syntax in X-Bar languages and induced by parsing principles in W-Star languages.

Such a parsing strategy is the *rule* that forms adjacent nominal elements into a single constituent. Compare the following sentences (Hale, 1981; 1, 17):

(2) kurdu- jarra- rlu ka-   pala maliki wajilipi- nyi
     child- DUAL- ERG PRES- DUAL dog   chase-   NONPAST

     wita- jarra- rlu
     small- DUAL- ERG

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The two small children are chasing the dog.'

(6) maliki ka-   pala wajilipi- nyi   kurdu wita- jarra- rlul
    dog   PRES- DUAL chase-   NONPAST child small- DUAL- ERG
    The two small children are chasing the dog.'

The two sentences share a semantic interpretation but differ in
two notable ways: (i.) the elements which make up the English
semantic expression 'the two small children' are discontinuous in (2);
and (ii.) the number and case ending on the nominal *kurdu* 'child' are
missing in (6).[3]   In Warlpiri, adjacent constituent nominals may
surface with the number and case endings appearing only on the
rightmost element in the constituent.   A parsing strategy Hale
considers would have the effect of taking two adjacent nominals,
perhaps *kurdu-jarra-rlu* and *wita-jarra-rlu*, sharing relevant semantic
features—such as number and case—and merging them into a single
constituent, such as *kurdu wita-jarra-rlu.*

There are clear corollaries of parsing strategies in Hale's later
work such as the Case-linking analyses in Hale,1982 and 1983.   We
will discuss them where appropriate.

The central issues of Hale (1981) which continue to be of
interest for non-configurationality can be summarized rather simply:
There exists a body of data in one language, Warlpiri, which (a) finds

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[3] We must be careful when claiming that two Warlpiri sentences share an
interpretation.   Hale (1983, for example) makes clear that the semantic effects of
alternate word orders in Warlpiri is in need of exploration.   If we take semantic
interpretation in some weak sense, such as conditions of truth, then it is likely we can
say that pairs such as the sentences above share an interpretation, i.e. truth conditions.
Strong claims about similarities in interpretation must await further work on Warlpiri
semantics but we will abstract over this question, assuming the sentences above to be
the same in interpretation in some obvious intuitive sense.

counterparts in other languages, such as Navajo; and (b) do not find counterparts in languages like English. These are, among others, extensive free word order, extensive null anaphora and lack of pleonastics. Hale (1981) explores whether the categorial, or phrase structure component, might be able to express this difference. Hale (1982) presents a lexicon based analysis and we will consider that analysis in the next section.

2.2 "Preliminary Remarks on Configurationality"

Hale's (1982) "Preliminary Remarks on Configurationality," extends the attempt to provide an analysis of the differences between Warlpiri and English in terms of Government and Binding theory. Again, Hale is clear in expressing his view that non-configurationality should not be taken as a bivalent parameter, writing "[in] recent years, a terminological usage has arisen according to which languages are classified as either configurational or non-configurational. I have participated sometimes in this usage, and I am very interested in the question of the position in linguistic typology of languages which might reasonably be placed somewhere near the non-configurational end of the spectrum. (p. 1)"

Hale extends the "superficial characteristics which are often mentioned in close association with the label [non-configurationality]" to include the following: (Hale, 1982; p. 1-2)

(7)   Superficial Characteristics of Non-configurational Languages
        a. "free" word order;

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b. the use of discontinuous expressions;
c. free or frequent "pronoun drop";
d. lack of NP movement transformations;
e. lack of pleonastic NPs;
f. use of a rich case system;
g. complex verb words or verb-*cum*-AUX systems;

He states: "The list goes on. I seriously doubt, however, that any of the superficial characteristics is criterial, in the sense of itself *defining* a type."

As an aside, some attention should be paid to the fact that Hale refers to non-configurationality as a *terminological usage*. This is a terminological usage to which few researchers are committed. In Hale (1981), he referred to X-Bar languages as *configurational* though he did not suggest a class of languages that were *non-configurational*. Superficial consideration of Warlpiri shows certain *configurations* readily: the subject clitic precedes the object clitic on AUX (see Hale, 1973, p. 309; etc.) and, obviously, the position of AUX itself is stipulated second position, with only minor caveats (*ibid.*). Further, infinitival clauses in Warlpiri have a fixed verb-final word order (Hale, 1981; p. 7). No one would seriously consider that Warlpiri, or any language, lacked grammatical configurations in all senses of the term, but it is possible to make three specious conclusions from the term *non-configurationality*.

The first is that insofar as syntax is a field of study focused on grammatical configurations, it is properly concerned only with languages having such configurations, excluding languages such as

Warlpiri from serious discussion. This is certainly falsified by the fact that we need to know *why* Warlpiri is free to lack configurations in the relevant sense; it is also falsified by Hale's repeated urgings that there are no *criterial facts* separating Warlpiri from configurational languages, and hence, that there is no way to draw a line between those languages manifesting syntactic configurations and those lacking them.

A second misconception engendered by the term non-configurational is that languages with certain sorts of *configurations* are *prima facie* configurational. For example a language with relatively fixed word order, such as Navajo, might be excluded from inclusion in the class of non-configurational languages by virtue of having fixed word order. In fact, relatively successful theories of configurationality (such as that in Jelinek, 1984, or Hale, 1985) might include Navaho in the class of non-configurational languages on the basis of its lack of pleonastics, extensive verb words and null anaphora.

A third misconception arises from the fact that non-configurationality specifies a negative characterization of a class of languages. It is obvious that this significant class of languages requires a positive characterization of its properties, but there is also the suggestion that Warlpiri and languages like it are impoverished in some sense. Perhaps having "configurations" in the sense of English is a symptom of English's impoverished case and agreement system. There is a value in keeping in perspective the fact that the properties of English are not so strikingly different from those of Warlpiri—

though Warlpiri is often used, at least anecdotally, as an example of a language more different from English than one might have expect to be possible.

Having made the terminological argument against *non-configurationality*, we will presently continue to use the term in conformance with the accepted pattern of usage in the literature. In Chapter 3 we will suggest a view of configurationality that avoids some of the possible problems mentioned above. As noted, it is not clear that any researcher has any investment in these terms and perhaps they should be discarded. We make the arguments against them here because the misconceptions listed above do seem to find a reflex in the literature of non-configurationality.

Returning to the proposals in Hale (1982) accounting for the superficial characteristics listed in (7) above, Hale considers and rejects an analysis that would explain non-configurationality with reference to *scrambling* (see for example Ross, 1967). This analysis would claim that the grammars of configurational and non-configurational languages might be identical except for the PF side of the grammar, which would include a local scrambling rule in Warlpiri. As Hale points out, however, this analysis seems "to lose some of its theoretical interest...when one notices that few real predictions are made by it (p. 2)." A further problem Hale notices is that appeal to *scrambling* only solves one of the problems raised by canonical non-configurationality, free word order, which is probably not even criterial (cf. Navajo). Scrambling would not predict the lack of

pleonastics or extensive null anaphora (cf. Spanish which presumably lacks scrambling).

Instead Hale proposes an analysis relying on X-Bar theory and a particular way of understanding government. Hale again argues that there are two types of languages with respect to whether they use both or just one of the X-Bar schemata below:

(8)   a. X'' -------> ... X' ...
          b. X' -------> ... X ...

The difference Hale suggests is between languages with one level of structure (X'-Bar languages) and those with two (X''-languages). The fact which Hale wants to reduce to (8) is the "relative tightness of grammatical organization" in configurational and non-configurational languages (Hale, 1982; p. 3). In configurational languages, there is a "relatively straightforward and consistent relationship between theta-role assignment and structural position" (ibid.). Thus, configurational languages are marked by the fact that "grammatical principles are typically articulated in structural terms" (ibid.).

The relation Hale wants to explore is government. Hale outlines a classical GB view of government reducible to the sisterhood relation: α governs β if α is a head of α^k and α is an immediate sister of β. Consider the following structure:

(9)

$$
\begin{array}{c}
X'' \\
\diagdown \\
A'' \qquad X' \\
\diagdown \\
X \qquad B''
\end{array}
$$
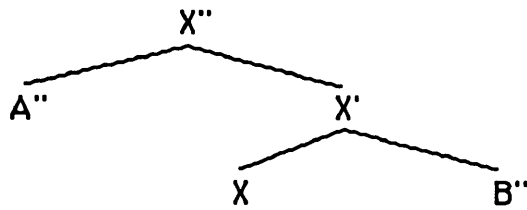
The category A" is governed by X' which is the head of X" and the category B" is governed by X which is the head of X'. Government can be used to specify which of two arguments A" or B" is "closer" to X^0, in some intuitive sense. As Hale puts it: "government can function in such a structure to distinguish among the arguments of the lexical head (X), where that is a verb, say" (p. 4).

On the other hand, Hale assumes a flat phrasal structure for non-configurational languages and hence a head cannot "partition a structure into distinct sub-phrasal subdomains of government—and correspondingly, it cannot serve, in and of itself, to distinguish among the arguments of X..." (*ibid.*). The appropriate structure follows:

(10)
$$
\begin{array}{c}
X' \\
\diagup \mid \diagdown \\
A' \qquad B' \qquad X
\end{array}
$$
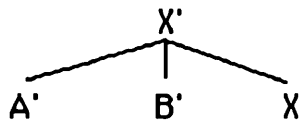
Hale's conclusion is reprinted in full (p. 5):

One could say here that both A' and B' are governed by X. That would follow from our definition of government. An alternative, however, is to say that government simply does not operate in such structures. This seems a rather

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natural alternative in the conception of government briefly outlined above—in which government, in the absence of configurational structure, cannot distinguish among nominal arguments and in which, in fact, government is entirely derivative of sisterhood. I will adopt the second alternative.

Hale reasons that since (i.) a function of government in configurational (X") languages is to distinguish among arguments and (ii.) this function cannot be extended to non-configurational (X') languages, then (iii.) government does not operate in non-configurational languages. He extends this to the claim that since abstract Case assignment and theta-role assignment are dependent upon government in configurational languages and government does not operate in non-configurational languages, heads do not assign Case and θ-roles in non-configurational languages. It will follow then that non-configurational languages can only have inherent Case ("case associated with nominals alone or perhaps by the categorial component in languages with case-like post-positions or enclitics, such as Japanese and Navajo, p. 5"), and not assigned Case.

Turning to θ-role assignment, Hale argues that since heads in configurational languages have the ability to assign Case and θ-roles to NPs they govern, "it also allows for *failure* of assignment in one or another of the domains of government." For example, following Burzio (1981), a non-finite V' will fail to assign Case to the subject and a past participle will fail to assign Case to its object. Hale assumes that such an absence of assignment is not possible in non-configurational

languages since "all positions are theta-positions in non-configurational languages". Though Hale does not elaborate on this here, assume it is the case because (i.) NPs are assigned thematic-roles in the word formation component, as with Case; or (ii.) NPs cannot enter the structure unless they bear a thematic-role, derivative from the Projection Principle.

Before turning to the further predictions Hale claims for this analysis, there are two immediately troubling aspects of Hale's theory. An internally inconsistent claim concerns inherent Case for non-configurational languages. Hale mentions Navajo and its "case-like postpositions" but Navajo subjects and direct objects do not bear overt case of any kind (and postpositions do not occur with them), exactly like English noun phrases. Hale must assume in this event that *both* subjects and objects in Navajo receive *abstract inherent Case*, a not very likely conclusion given that abstract Case is generally associated with structural Case, not inherent Case.

More importantly, Hale's central assumption, that the lack of productivity of government suggests that it is inoperative, seems *ad hoc* and uncompelling. See our arguments below concerning Hale's claim that there is no option of PRO in Warlpiri.

Turning now to the claimed consequences of Hale's analysis, the first is the lack of NP movement in non-configurational languages. In such languages it appears that passive is formed as a lexical process rather than by movement. In configurational languages, the Projection Principle guarantees that an NP appearing at D-structure will have a θ–

role and if the position to which movement is affected also receives a θ–role, the moving NP will acquire two thematic-roles, violating the θ–criterion. Hence, in the English passive, we have the following movement from a [+θ, -Case] object position to a [-θ, +Case] subject position:

(11)   [$_{NP}$ e] was hit John
        -θ, +C   +θ, -C

(12)   John$_i$ was hit t_i
        +θ,+C

In a non-configurational languages which Hale assumed to lack non-theta-positions (θ–bar positions), NP-movement would always be from one θ- position to another, violating the θ–criterion. On the assumption that all NP positions are theta-positions in non-configurational languages, there will be no NP movement in non-configurational languages; note, as we will see, that Jelinek, 1984, argues that all NP positions are non-θ positions in non-configurational languages, and she derives essentially the same consequences.

Above we provided two possible rationales for Hale's claim that all NPs were in θ–positions in non-configurational languages. Either (i.) NPs are assigned θ–roles in the word formation component—in which case they are lexically inserted with θ–roles; and (ii.) that NPs could not enter the structure without receiving a θ–role (à la the Projection Principle)—in which case their appearance guarantees that they are θ–marked; Essentially, Hale argues for the first of these

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claims. He notes certain difficulties with his analysis: "how does an overt nominal expression get its theta-role? The question is both important and vexed, and I am not sure that its answer will be altogether neat. (p. 6)"

He assumes that θ–role assignment is related to the inherent Case he also assumes for non-configurational languages and posits a lexical-functional structure (LFS) at which the functional structure of a predicate, such as *pantirni*, "to spear, stab, pierce, etc.", is mapped onto the Case and θ–structure of its arguments.

(13)

```
      ERG     ABS
       |       |
       |       |
  ( x,      y, )  PANTIRNI
       |       |
       |       |
       A       P
```
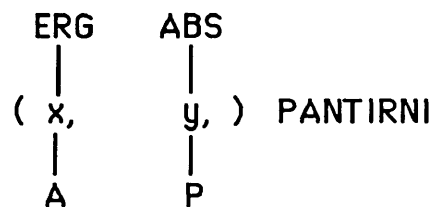
Hale assumes that there is a process of association by which arguments of the verb are linked to particular θ–roles (agent and patient in the above example) and that there is another process by which nominals are associated with particular case categories such as ergative and absolutive. He is not entirely specific about how these processes are linked, suggesting they are separate (p. 6) but also claiming "an overt nominal bearing case C receives its theta-role by being associated with an argument position bearing linking register C." Assuming therefore that nominals receive thematic-roles from the LFS of the predicate, what consequences are expected?

Hale uses this assumption to explain the status of missing nominals in non-configurational languages. As we have discussed earlier, Warlpiri permits extremely free null anaphora for subjects and objects.

(14) a. wawirri   pantu- mu   (Hale, 1982; p. 6-7)
         kangaroo:ABS spear- PAST
         'He speared the kangaroo.'

      b. pantu- mu
         spear- PAST

Are these missing arguments empty categories or simply not present? Hale writes: "my gut-feeling answer to this question is that these missing NPs are not PRO--rather, they are *truly missing*" (p. 7). Hale proposes that in non-configurational languages, "argument positions of predicates are *freely* evaluated" (*ibid.*). Each argument position is assigned an index which may be bound by an overt NP (which might be likened to the *quantifying in* of Montague Grammar, see for example Dowty, Wall and Peters, 1981, Chapter 5). We would begin with a basic predicate as in (15) which could be interpreted as (16) with binding by (one or) both overt NPs of the argument positions (n, m) in (15-16).

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(15)   < n, < m, PANTURNU> >

(16)   [ngarrka$_{(n)}$ [wawirri$_{(m)}$ [< n < m PANTURNU> >]]]
       man   kangaroo   speared
       X'He speared the kangaroo.'X LFS

The form in (15) is also evaluable, though we must be careful to make explicit the allowed meaning. The relation between (15) and (16) is analogous to, though not identical with, the following two expressions from first order predicate calculus:

(17) a. $F(x)$ 'x flies'
      b. $F(j)$ $(j$ = John)   'John flies'

The difference between (17a) and (17b) is in the binding of the argument slot of the predicate F. Similarly, Hale seems to claim that in (15) above, the variables (n, m) are permitted in roughly the same sense as the variable in (17a) though with the "interpretation of an English definite pronoun" (p. 7). When the variable is bound, as in (16) or (17b), the interpretation is that standard for noun phrases, as in English. The difference between English and Warlpiri would be the availability of interpreted structures like (17a) or (15). If this is a correct interpretation, there is nothing strained about such a view of the configurationality distinction—(though Hale's method of arriving at the distinction may not be satisfying). As Hale understands, the problem is how to have a syntax permitting free generation of variables in Warlpiri and excluding the same for English. When we encounter

Jelinek's (1984) analysis of non-configurational languages, it might be possible to state this claim in a more appealing manner.

Returning to the question of PRO and the status of missing arguments, Hale notes "in a framework of the sort being developed here, there is no *need* for the element PRO in non-configurational languages" (p. 8). Hale considers two possible arguments for the claim that PRO cannot occur in non-configurational languages. The first is that PRO is inherently Caseless and, given the argument that NPs in non-configurational languages receive thematic-roles by virtue of receiving (being linked to) Case, PRO in non-configurational languages could not avoid Case, and hence could not appear.

The second argument against the existence of PRO in non-configurational languages concerns the definition of PRO within government theory. PRO has a curious status with respect to binding theory by virtue of being [+anaphor, +pronominal]; being an anaphor, PRO has to be bound in its minimal governing category, but, being a pronominal, PRO has to be free in its minimal governing category. The solution to this puzzle is that PRO is never governed, and thus has *no* minimal governing category. PRO's distribution, as subject in infinitivals for example, follows from this claim.

Hale uses this analysis of PRO, arguing that "the concept of PRO is intimately bound up with the theory of government, within the GB framework, and it may well be that government is *crucially* involved in the definition of PRO. Suppose this is so. Since government is non-functional in languages of the non-configurational type, they cannot

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have PRO." This analysis, apart from the fact that it relies on an analysis of PRO which is not universally accepted (see for example: Manzini, 1983; Sportiche, 1983; Bouchard, 1984; and Huang, 1989), seems unappealing. Government is also crucially involved in defining the notion *minimal governing category* and thus the notions *anaphor* and *pronominal* (the fact which led to the PRO theorem in the first place), yet we would not want to claim that non-configurational languages *perforce* lacked anaphors and pronominals. This argument is parallel to Hale's argument about PRO.

Hale's first argument, based on Case, is not easily discarded. If all NP positions in non-configurational languages are Case-marked, PRO would be excluded (thought not *pro*); unfortunately, the claim that all NP positions are inherently Case marked is a stipulation.

It seems again that the strongest claim is that empty categories seem not to be needed in the account of non-configurational languages—and this is certainly suggestive.

The framework of Hale's "Preliminary Remarks" anticipates a number of the details of the analyses of non-configurationality in Hale (1982), Jelinek (1984), etc. Some of the insights here are interesting and find no full expression in later work, such as the *quantifying in* analysis of Warlpiri argument structure—though, as noted, this could be replicated in a Jelinek-style framework. On the whole, however, Hale's analysis fails to address a central question it raises. Recall that Hale has argued that the superficial characteristics of non-configurational languages are not criterial and that there are non-

configurational languages which do not share all the properties of the canonical examples of non-configurationality. This state of affairs suggests that all the "superficial characteristics" of non-configurationality should not be made to follow from a single (bivalent) distinction or parameter. This is exactly what Hale's analysis does; it is an attempt to find one distinction (X' vs. X" structures) accounting for all the properties of non-configurational languages. This strategy of seeking a single underlying configurationality difference is found in Hale (1981) as well as Hale (1983), Jelinek (1984), Speas (1986) and Saxon (1985), though rejected in Alexander (1986) and the present work.

2.3 "Warlpiri and the Grammar of Non-Configurational Languages"

In Hale's (1983) "Warlpiri and the Grammar of Non-Configurational Languages," he extends the views presented in "Preliminary Remarks". In particular, he follows the pattern of development in GB to reduce the role of the phrase structure component. We can see this development by consideration of rules such as that in (18):

(18) VP ---> V NP PP

As discussed in chapter 1, we hope to reduce rules like (18) to independently motivated statements such as "Case assignment is Rightward" and "θ-role assignment is rightward". In Hale (1983), his alterations of the configurationality parameter follow this trajectory of

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development. As Hale notes, an analysis in terms of phrase structure such as that in Hale (1981, 1982) "simply begs a fundamental and more interesting question:, namely: Why does Warlpiri use a phrase structure of this highly 'permissive' type (p. 10)." Before considering his analysis, however, we will show how Hale generally viewed the question of configurationality in this article.

Once again we find the tendency to view non-configurational as something of an arbitrary label, (cf. the "terminological usage" in Hale, 1982), as Hale writes: "The grammar of Warlpiri...exhibits a number of properties which have come to be associated with the typological label 'non-configurational,' including, among others, (i.) free word order, (ii.) the use of syntactically discontinuous expressions, and (iii.) extensive use of null anaphora. (p. 5)." Somewhat surprisingly, given his repeated claims that no properties of non-configurational languages are *criterial* we find a clear desire to seek a *single* cause for all of the properties of non-configurational languages. Thus, "I am concerned with the question of whether there exists a unified explanation for the concurrence in Warlpiri of certain properties, including those mentioned above....Is there a parameter, clearly definable within a general theory of language, from which the observed differences between the two linguistic types follow straightforwardly?" Again, Hale attempts to find a single parametric difference accounting for the properties of non-configurational languages.

Hale assumes a Lexical Structure (LS) which is essentially the same as the LFS of Hale (1982) together with a Phrase Structure (PS)

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component, freely generating NPs to be linked with LS.. LS has more structure than LFS in this conception, however. The initial LS of *panti-rni*, 'to spear', would be as follows:

(19) [*arg* $_x$, *arg* $_y$, panti-rni]

Hale again assumes that nominals are assigned θ-roles at LS. So, arg_x in (19 [Hale's (10)]) above is assigned the agent θ-role. (p. 13) Similarly, arg_y is assigned the patient θ-role. As we will see this assignment will be determined by internal 'quasi-syntactic' structure in LS. These thematic-roles are linked to Warlpiri case categories (such as ergative, absolutive, dative, etc.) yielding the intermediate structure of (20):

(20) [*erg* $_x$, *abs* $_y$, panti-rni]

A linking mechanism relates an internal argument (an object) with a particular case, such as absolutive. These cases are then linked to the nominals appearing at PS. The linking rule follows:

(21) Linking Rule (Hale, 1983; p. 15)
Co-index N' in PS (Phrase Structure) with *arg* in LS, provided the case category of N' is identical to that of *arg* (assigning a distinct index to each *arg* in LS).

This linking of the LS structure, projected from the predicate, with the PS structure provides the   functional structure (22) of sentences (23a-c):

(22) [ngarrka-ngku^i, wawirri^k, [erg ^{i}, abs ^{k}, panti-rni]]

(23) a. ngarrka- ngku ka   wawirri   panti- rni
         man   ERG PRES kangaroo spear NONPAST
         "The man is spearing the kangaroo.'

      b. wawirri ka panti-rni ngarrka-ngku
      c. panti-rni ka ngarrka-ngku wawirri

And so on.

The sentences below are ill-formed, however, since there is no proper linking of LS and PS to generate them.

(24) a. *kurdu- ngku ka   yula- mi
         child   ERG PRES cry NONPAST

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

The verb in (24a) takes an absolutive argument, while the verb in (24b) takes the array absolutive-dative.   "In neither sentence, therefore, can the ergative nominal in PS be linked and thereby integrated into a coherent logical form (p. 15)."

For discontinuous constituents, Hale assumes that the component parts of the expression are free to link separately; for example (Hale, 1983, p. 6):

(25)　wawirri　kapi- rna　panti- rni　yalumpu
　　　kangaroo FUT- 1SUBJ spear NONPAST that
　　　'I will spear that kangaroo.'

This form must have the functional structure of (26a) and not that of (26b), possible in principle.

(26)　a.　[1st^l [yalumpu^k, wawirri^k, [erg ^{l}, abs ^{k}, panti-rni]]
　　　b.　*[1st^l [yalumpu^l, wawirri^k, [erg ^{l}, abs ^{k}, panti-rni]]

In (26), the ergative case is not linked to a full nominal, since it is represented by a null 1st person argument the reflex of which is the agreement marker on AUX (in 25). The nominals *yalumpu* and *wawirri* may link to the absolutive or ergative case arguments of *panti-rni* but the combination in (26b) is presumably excluded; so too must be excluded functional structures such as the following:

(27)　[kurdu^k [ngarrka^k [wawirri^k [<erg^l <abs^k PANTIRNI> >]]]
　　　child　　man　　kangaroo　　　　speared
　　　X'I will spear that child man kangaroo.'X LS

As Hale notes, "something must, of course, be said about the interpretation of sentences exhibiting this sort of many-to-one linking, but nothing prohibits it (p. 15-16)."

As suggested above, "while the coherence principle requires that a case-marked N' in PS be linked, the dependency is not reciprocal. Thus, a given argument in LS may or may not have a N' linked to it... (p. 16)." This will account for cases of null anaphora, as below in (28a-c): (Hale, 1981; p. 7).

(28) a. ngarrka- ngku ka   panti- rni
       man   ERG PRES spear NONPAST
       'The man is spearing him/her/it..'

   b. wawirri ka   panti- rni
      kangaroo PRES spear NONPAST
      'He/she is spearing the kangaroo.'

   c. panti- rni   ka
      spear NONPAST PRES
      'He/she is spearing him/her/it.'

The expressions in (28) would be derived from failure to link one (28a-b) or both (28c) arguments in LS with an N' in PS.

What of the interpretation of these unlinked arguments in LS? As in (Hale, 1982), he argues that the interpretation of these arguments is essentially like that of English definite pronouns. In the present article, however, Hale tries to derive the interpretation from the claim that such LS arguments *are* pronouns.

Two facts suggest to Hale that that the null arguments, unbound variables in the LS structure, are pronouns. First, in the reflexive/reciprocal construction, the subject binds the reflexive/reciprocal, and the object cannot. Second, in cases of obligatory control, the matrix argument binds the subject of an infinitival. Taking these facts in turn.

We can identify separate subject and object agreement markers on the AUX node. (Hale, 1983; p. 18)

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(29) a. ngajulu- rlu ka- rna- ngku nyuntu nya- nyi
      I   ERG PRES- 1SUBJ- 2OBJ you   see NONPAST
      "I see you.'

    b. maliki- jarra- rlu ka- pala- jana puluku- patu
       dog   DUAL- ERG PRES- 3SUBJ- 3OBJ bullock- PLR

       wajilipi -nyi
       chase NONPAST

       The two dogs are chasing the several bullocks."

The subject marker precedes the object marker.

In the reflexive/reciprocal, the refl/recip marker follows the subject agreement marker and refers to the subject. (Hale, 1983; p. 21)

(30) kurdu- jarra- rlu ka- pala- nyanu paka- rni
     child DUAL- ERG PRES- 3SUBJ- RELF strike NONPAST
     The two children are striking themselves/each other."

Thus, reflexives are bound by subjects and not by objects.

The second type of example Hale gives is that in cases of obligatory control of infinitival subordinate clauses, the subject argument is bound by an argument of the matrix clause. In (31a) below a matrix object controls the subject of the infinitival clause (with the -kurra complementizer) and in (31b) the infinitival clause subject (with -karra) is controlled by the subject of the matrix clause:

(31) a. purdau- nya- nyi ka- rna- ngku
     aural perceive NONPAST PRES- 1subj- 2obj

     [wangka -nja- kurra]
     speak- INFIN- COMP
     "I hear you speaking.'
     not: I hear you as someone speaks to/of you.

b. ngarrka- ngku ka purlapa yunpa- rni
   man   ERG PRES corroboree sing   NONPAST

[karli   jartni- minja- karra- rlu]
boomerang trim   INFIN- COMP- ERG
The man is singing a corroboree song while trimming
   the boomerang.

Infinitival subjects marked with the complementizer (-kurra) are controlled by a matrix object while those marked with (-karra) are, for most speakers, controlled by the matrix subject. What is significant is that only the subject of an infinitival clause may be controlled, not an object or oblique. In (31a) the matrix object ('you') controls the infinitival subject and (31a) cannot mean that the speaker (subject of infinitival) is the main clause subject or some person understand from context. The subject of the infinitival must be controlled and the direct object cannot be controlled. Thus, cases of obligatory control must make reference to grammatical functions of subject and object, even in cases where the controlling NP is not overt (such as in 31a) and Warlpiri shows a subject/object asymmetry with respect to binding of infinitival clause argument positions. Since there is no syntactic structure which can provide a definition of subject and object NPs, Hale argues that Warlpiri requires the assumption that there is structure in LS, permitting that level to distinguish subjects from objects.

For the infinitival control cases, Hale assumes that the complementizers -kurra and -karra mark the "subject agreement

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marker of an infinitival as anaphoric ([+an]), and that an argument not so marked is simply non-anaphoric (and, by convention, assigned the feature [-an]) [see Borer, 1986, 1989 for a similar proposal]. Under this assumption, LS can be seen as containing arguments of two sorts—pronouns ([-an]) and anaphors ([+an])—whose behavior can be expected to conform to conditions (A) and (B) of the Binding Theory. (p. 23)" He assumes that the LS of a tense clause is the governing category of each argument it contains. To account for subject/object asymmetries in the reflexive/reciprocal construction, Hale assumes an internal structure of LS, as follows:[4]

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

In the structure above, the subject (ergative) argument, c-commands the object (absolutive) argument but the reverse is not true. Thus a subject can bind a reflexive in the object position but the reverse is not true. Further, we could not have a reflexive in subject position (attempting to bind an argument in object position) since the reflexive could not then be bound in its governing category.

Hale is intentionally vague about the account of obligatory control within this structured LS view: "...the subject of an infinitive can be marked anaphoric. I am not prepared to pursue this idea further, since to do so would require a fully developed theory of functional structures....It is sufficient to say here that a proper account of control,

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[4] Note that V' and V projections in LS do not have the same formal status of similar projections in the Phrase Structure. As Hale does, we indicate LS projections with lower case letters.

under the assumption that the controlled subject is an anaphor, will require the characterization of the 'governing category' which will allow the subject of an infinitival (but not the object thereof) to be bound by a matrix argument. (p. 24-25)"

Reviewing, the data from obligatory control and reflexive interpretation suggested that Warlpiri requires a built-in distinction between subjects and objects. This is not possible in the Warlpiri phrase structure component so Hale assumes that LS is structured so that subjects asymmetrically c-command objects. This can account for the reflexive facts straightforwardly, though the details of the obligatory control cases are not worked out.

Hale suggests (following Marantz, 1981) that this structured LS is universal and, hence, that all languages are configurational at LS. This leads Hale to assume that "Perhaps, then, the place to look for the fundamental difference between configurational and non-configurational languages...is in the relation between LS and PS...(p. 25)" and this is the approach he takes.

The theory of Warlpiri developed so far contains a PS, a structured LS, and linking processes which relate arguments to case arrays in LS, and relate Case marked variables in LS to Case marked NPs in PS. We may now consider Hale's statement of the "configurationality parameter".

The crucial varying aspect of the theory is the Projection Principle (Chomsky, 1981; p. 29):

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(33) The Projection Principle

Representations at each syntactic level (i.e. LF, D- and
S-Structure) are projected from the lexicon, in that they
observe the subcategorization properties of lexical items.

Alternatively, if α assigns a thematic role to β at syntactic level 1,
then α assigns a thematic-role to β at all syntactic levels.

Hale states the configurationality parameter as follows:

(34) The Configurationality Parameter (CP) (Hale, 1983; p. 26)

a. In configurational languages, the projection principle
holds of the pair (LS, PS).
b. In non-configurational languages, the projection
principle holds of LS alone.

In fact, Hale's parameter forces the claim that the Projection

Principle does not hold in non-configurational languages; that is, the

Projection Principle states that θ–role assignment must be constant

across syntactic levels, while Hale's configurationality parameter

restricts conditions on thematic-role assignment to one stipulated

level, rendering the Projection Principle vacuous for non-

configurational languages, as Jelinek (1984) notes.

The LS structure for languages like English will be almost

identical to that of Warlpiri, with an added categorial specification for

each argument: (Hale, 1983; p. 27)

$[_{V'=S}$ arg $_X$ = NP, $[_{V=VP}$ arg $_y$ = NP, verb = V]

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As Hale puts it, "a strict interpretation of the CP with respect to configurational languages might further require that the configurational definition of argument positions in LS be mirrored precisely in PS, forcing the phrasal syntax of configurational languages to exhibit the familiar NP-VP partitioning of clauses. (p. 27)"

The central claims of the configurationality parameter can be seen quite clearly from the section below:

> The CP, in short, determines a tight connection between LS and PS in configurational languages. But for non-configurational languages, by contrast, the CP does not determine any connection at all between LS and PS (leaving that to other principles of grammar). From this, the observed non-configurational properties of Warlpiri follow, assuming Warlpiri to be non-configurational. That is to say, because of the manner in which the projection principle holds in non-configurational languages, the system of phrase structure rules and the process of lexical insertion are allowed to appear in what appears to be a highly unconstrained manner. But in the conception of configurationality being considered here, this is not directly a function of phrase structure and lexical insertion themselves; rather it is a function of the position of Warlpiri in regard to the CP and, consequently, of the manner in which the projection principle holds in Warlpiri. Thus, in the absence of independent principles of grammar which might impose limitations to the contrary, the relation between LS arguments and PS nominal expressions is neither bi-unique nor structurally isomorphic—hence the possibility of null anaphora (in the sense used here), discontinuous expressions, and free word order. (p. 27)

Another property of non-configurational languages which Hale tries to reduce to the configurationality parameter is the lack of NP movement rules. As in Hale (1982) and as is standard in Principles

and Parameters, assume that NP movement is movement from a θ-position to a non-θ position where both positions are argument positions (A-positions). "It will follow, then, that Warlpiri, being non-configurational, cannot have NP movement rules, since the notion 'argument position' applies only to LS—there are, strictly speaking, no argument positions in PS, where the category NP (or N') is instantiated. (p. 28). This is something of a departure from the view in Hale (1982) where all NPs in Warlpiri were in θ-positions, presumably argument positions, though the consequences are the same—under the Hale (1982) view, NP movement would result in an NP receiving two θ-roles; in the Hale (1983) view, the lack of argument positions means that there is no non-θ-position for an NP to move *to*.

In this analysis, Hale more successfully argues against the existence of empty categories in non-configurational languages. He argues that since it is the Projection Principle forces the appearance of empty categories in configurational languages, they do not appear in non-configurational languages. "If they are not motivated [by the Projection Principle], they may not appear. It will then follow that such categories are excluded from initial PS representations in non-configurational languages. If, as seems appropriate, the class of categories at issue here is extended to embrace not only empty categories, but expletive (or pleonastic) elements as well, then another non-configurational property of Warlpiri follows from the CP—namely, the lack of PS expletives in that language. (p. 29)"

Hale's (1983) version of the configurationality parameter goes a good deal further than previous work toward finding a probable unified explanation (which Hale calls a lack of "grammatical tightness") for a number of properties of Warlpiri (lack of NP movement, lack of pleonastics, extensive free word order, discontinuous constituents, etc.). Ironically, because he attempted to explicate "grammatical tightness" by weakening the otherwise appealing Projection Principle, his analysis was rejected by Jelinek (1984) and others, without full consideration of how successful Hale was in finding a single property which came close to deriving the observed properties of non-configurational languages.

We will not argue against Hale's (1983) analysis here, relying on the arguments in Jelinek (1984). We will note, though, that Hale's attempt to find a single explanation for properties which do not pattern together particularly close is still troubling, since an alternative analysis attempting to analyze these properties with two parameters had not been considered. Jelinek (1984) presents another bivalent configurationality parameter which drew from Hale's work on Warlpiri.

2.4 "Empty Categories, Case, and Configurationality"

Eloise Jelinek's (1984) "Empty Categories, Case, and Configurationality," takes up many of the issues of Hale (1983), providing a framework for work on configurationality focusing on the role of grammatical agreement in non-configurationality. Recall from

the "superficial characteristics of non-configurationality" that one the properties of non-configurational languages was "complex verb words or a verb-*cum*-Aux system". This is descriptively accurate for Athapaskan languages such as Navajo which have quite complicated verbal morphology but is only weekly true for languages such as Warlpiri, which, though it has a verb-*cum*-AUX system, does not show anything like the morphological complexity of the Athapaskan languages, or even other North American Indian languages such as Kiowa-Tanoan, etc. Among other Amerind languages, morphological complexity is not particular apparent. In Hixkaryana (for example) and Carib in general, verbs are most often formed from just the terms (agreement clitic, root verb and tense). Yagua (Peba-Yaguan), another Amazonian language is equally uncomplicated, relative to Athapaskan. Other languages families, such as Mayan or Uto-Aztecan, do not approach the complexity of certain other Amerind language families. It is true across languages of the Americas that there is richer *agreement* (as opposed to richer verbal morphology in general) than is found in more familiar European or Asian languages. Jelinek (1984) makes use of this property in an interesting way.

Jelinek's central criticism of the framework in Hale (1983) is that reliance on the Projection Principle as the locus of parametric difference is inappropriate and, further, she claims that there is no need to posit different application of the Projection Principle for configurational and non-configurational languages. She points out that Hale's analysis permits "a sentence with no surface indications of

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grammatical relations" which would be "uninterpretable" (p. 43). She argues that "Hale's [configurationality parameter] threatens to permit languages with uninterpretable surface structures" (*ibid.*).

This claim is not obviously true, however. Recall that Hale tried to argue that missing NPs in Warlpiri had the status of definite pronouns in English. He showed that these gaps could bind reflexives and could control infinitival subjects. It may be strained for Hale to reject empty categories yet to permit missing elements to bind reflexives, but this is not the argument that Jelinek makes—Jelinek argues that Hale's system permits sentences with uninterpretable surface structures. This is not true *if* there are well-formed interpretations of these missing NPs—interpretations for which Hale's analysis does provide.

Since this is only the starting point of Jelinek's analysis, we need not take too seriously her failure to make a strong argument against Hale's proposal. The alternative Jelinek suggests is to take person marking clitics on AUX as the *real* arguments of Warlpiri verbs, calling them "case-marked, fully referential clitic pronouns that serve as verbal arguments" (p. 44). Further, she argues that "pronominal clitics are never bound by a nominal in an argument position, since nominals never occupy argument positions. Clitics may have antecedents outside their governing category, the sentence, as any pronoun may. They are comparable to the 'free' use of pronouns in English...(*ibid.*).

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Person marking clitic pronouns are not agreement for Jelinek—for example they can be linked to nominals with which they do not share person, number or case. Clitic pronouns are *arguments* at LS *and* PS and nominals are simply adjuncts. Further she claims that clitic pronouns bear cases which reflects their grammatical function (subject and object) while nominals bear non-grammatical (oblique) case "and are governed by their case particles/postpositions.

The first pages of Jelinek (1984) propose a very different way of approaching the syntax of non-configurational languages, with implications for the broad class of languages, mentioned above, showing the *hyper-rich* agreement of languages like Warlpiri and Navajo. Since Jelinek is just concerned here with Warlpiri, most of these implications are not fully explored.

The first claim Jelinek defends is that the case of Warlpiri agreement morphemes is different from that of Warlpiri nominals. A nominative accusative case system treats intransitive and transitive subjects the same and distinct from transitive objects. An ergative absolutive system, on the other hand, treats intransitive subjects the same as transitive objects, and both as distinct from transitive subjects. The following data from Jelinek (1984; p. 45) adopted from Hale (1973; p. 328) shows the case facts for nominals and agreement markers:

(35) a. ngajulu- rlu ka- ma- ngku nyuntu- Ø
　　　I- 　　　ERG PRES- 1SGNOM- 2SGACC you- 　ABS

　　　nya- nyi
　　　see- NONPAST

　　　'I see you.'

b. nyuntulu- rlu ka- npa- ju ngaju- Ø
　　you- 　　　ERG PRES- 2SGNOM- 1SGACC me- 　ABS

　　nya- nyi
　　see- NONPAST

　　'You see me.'

c. nyuntu- Ø ka- npa purla- mi
　　you- 　ABS PRES- 2SGNOM- shout NONPAST
　　'You are shouting.'

In (35a-b) the subject of the transitive clause bears ergative case and the object bears absolutive case; in (35c) the intransitive clause subject bears absolutive case, like a transitive object. This demonstrates that Warlpiri nominals show an ergative/absolutive case pattern. As (35b-c) the subject agreement marker for intransitive subjects is the same for transitive subjects (-npa, '2SGNOM') and different from the transitive object marker (-ngku, '2SGACC'). Thus, Warlpiri demonstrates a nominative accusative pattern for agreement markers.

The above data shows that Warlpiri clitics do not share case with their associated nominals. Jelinek also argues that need not agree in person and number either. (Jelinek,1984, p. 46; and Hale, 1983, p. 32-33)

(36) a. puyukuyuku- puru kula- lpa   rlipa-   nyanu
       fog-   WHILE NEG- IMPERF- 1+3NOM- REFL

       yapa-   Ø   nya- ngkarla
       person- ABS see- IRREALIS
       'We (plural inclusive) cannot see one another (as) person(s)
       (i.e. our shapes and figures) when it is foggy

    b. nya- nyi   ka-   ma-   ngku   ngarrka- Ø-   lku
       see- nonpast pres- 1sgNom- 2sgAcc man-   ABS- after
       'I see you (as) a man now (i.e., as fully grown, initiated)."

In (36a), the third person absolutive nominal (*yapa-Ø*, 'person')
is linked to the reflexive clitic -*nyanyu* which is interpreted as linked
to the 1st person inclusive nominative (-*rlipa*). In (36b) the third
person absolutive nominal *ngarrka-Ø* ('man') is linked to the second
person accusative clitic (-*ngku*). Thus, the agreement clitics need not
share the features of the overt nominals. This would be surprising if
the person markers were simple agreement markers.

Jelinek extends this analysis to Spanish, and other pro-drop
languages (data from Jelinek, 1984; p. 48)[5]

(37) a. Las mujeres tienen   esperanza
        DET women   have:3PL hope
        'Women have hope.'

     b. Las mujeres teneis   esperanza
        DET women   have:2PL hope
        'You women have hope.'

     c. Las mujeres tenemos esperanza
        DET women   have:1PL hope
        'We women have hope.'

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[5] Jelinek glosses Las mujeres tenemos esperanza as 'DET women have-*3pl* hope'. We
assume that this is unintended.

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In these examples the person of the subject is not necessarily related to the agreement marker triggered. Jelinek argues that the subject in Spanish is the agreement marker with the subject NP (*Las mujeres*) an adjunct. She points out that in pro-drop language such as Spanish and in Warlpiri (and non-configurational languages in general, it seems) independent pronouns are used for "emphatic contrastive reference" and that "sentences with an independent pronoun in adjunction to a pronominal affix or clitic are the *marked* construction" (p. 48).

(38) a Yo sé   lo que   pasó   no tú
       I   know:1SG it which happened   not you
       '*I* know what happened, not you.'

     b. Me   lo dió a mi
        Me:DAT it gave to me
        'He gave it to *me*.'

     c. ngajulu- rlu wawirri- Ø   kapi- rna- Ø
        I-   ERG kangaroo- ABS FUT- 1SG- 3SG

        panti- rni   yalumpu- Ø
        see-   NONPAST that-   ABS

        '*I* (myself) will spear that kangaroo.'

She argues "there is no reason to assume that these languages should match English in requiring an independent lexical subject, which is then dropped, in the unmarked construction: grammatical relations may be marked in the morphology as well as in the syntax" (p. 49). She points out that verbs which (for semantic reasons) "do

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not permit contrasts in referential emphasis, may exclude pronouns as adjuncts" (*ibid.*)

(39) a. llueve
It's raining

b. *el llueve
'*It* is raining, (not...)

Thus, Jelinek argues that *null anaphora* in Spanish and Warlpiri derive from the same source: the argumental status of "agreement markers" as clitic pronouns. She does not claim that Spanish is non-configurational, however, explicitly noting "I suggest that the term *configurational* be reserved for languages such as English or Spanish, where there is an asymmetry between the marking of subject vs. object grammatical relations" (p. 50).[6] It is not clear then what accounts for the different syntactic behavior of Warlpiri *vis-à-vis* Spanish. Though with respect to agreement Jelinek claims that Warlpiri and Spanish are identical, she appears not to be claiming that Warlpiri subjects are treated exactly like Spanish subjects—Spanish subjects do not permit discontinuous constituents of the Warlpiri type and Spanish subjects are not freely permutable. Thus, her analysis of Spanish, though interesting, is somewhat confusing in the context of her discussion of Warlpiri.

Returning to the proposal for Warlpiri then, and bracketing the claims about Spanish—under Jelinek's analysis, there is no need to

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[6] It is not clear what Jelinek would say about the subject-object asymmetries demonstrated by Hale (1983) with respect to binding of reflexives/reciprocals and the impossibility of object control in infinitival clauses.

assume that Warlpiri behaves differently from English with respect to the Projection Principle. θ–roles are assigned to agreement clitics at all levels of structure. This makes sense of some facts that pretheoretically might have seemed curious. Though Warlpiri permits extremely free word order and extensive null anaphora, the order of agreement clitics is fixed and they are required to be present. If we state locality conditions and appearance requirements over agreement clitics, Warlpiri begins to seem less surprising.

Jelinek claims that other properties of Warlpiri follow from this analysis also. For example, she argues that "since nominals are not arguments or bi-uniquely related to arguments [i.e. clitics—*mja*], more than one nominal may be adjoined to a single argument, to yield apparently discontinuous expressions....And since nominals are mere adjuncts, there is nothing to require that they have a fixed order."

The picture that emerges of non-configurational languages is that the predicate and its agreement clitics constitute a "complete finite sentence" (p. 63) or, perhaps, a *complete functional complex* in the sense of Chomsky (1985b). Jelinek assumes a class of non-configurational languages called *W-type* non-configurational languages—though she suggests no alternative class.[7] "If a language has AUX clitic pronouns that (in finite clauses) always mark all verbal arguments, and that cooccur with optional nominals, it is a W-type non-configurational

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[7] For example, if 'W-Type' means has fully referential agreement clitics (in Jelinek's phrase) then perhaps Spanish is a W-Type Configurational Language. Japanese could be a non-W-type non-configurational language, depending on what Jelinek intends. She clearly assumes that the reference of '*W*-Type' is separate from the reference of 'non-configurational' but does not define 'non-configurational.'

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language (*ibid.*)". Jelinek's claim that there are languages which assign thematic-roles to agreement clitics is clearly the central principle of her analysis and consideration of it will occupy almost all of the remaining sections of this work. In Chapters 3-4, we reject much of Jelinek's model but θ–assignment to agreement clitics is an aspect of her analysis we tentatively assume.

In the next section we briefly consider two alternative accounts of non-configurationality which have some of the same consequences as Jelinek's

2.5 Two Alternative Conceptions: Saxon (1985) and Speas (1986)

2.5.1 "The Configurationality of Slave"

An alternative analysis of configurationality is provided by Leslie Saxon in her (1985) "Lexical versus Syntactic Projection: The Configurationality of Slave." Saxon's analysis is very similar to that of Jelinek and basically renames the distinction in Jelinek (1984), though, as we note, her analysis entails a slightly different class of non-configurational languages.

Saxon assumes that there are two classes of languages, which she terms *lexically projected* and *syntactically projection*. Syntactically projected languages are like English and "'empty NPs' may be required in PS...to satisfy the Projection Principle'" (p. 4, cf. Hale, 1982). Lexically projected languages differ in that "the argument

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structure of clauses is satisfied at the LS. Overt NPs are therefore not arguments in a clause...(p.4, cf. *ibid.*, Jelinek, 1984).

What is interesting about Saxon's formulation is that she assumes that Navajo is non-configurational (lexically projected) while its close Athapaskan relative Slave is configurational (syntactically projected). Slave and Navajo pattern together with respect to the "superficial characteristics of non-configurationality" sharing extensive verb words, free null anaphora, lack of pleonastics and both having relatively fixed word order. We reject the analysis she proposes and review the argument for this conclusion here, following on a similar analysis in Alexander (1988).

As noted, both Navaho and Slave show the extensive null anaphora that is characteristic of so-called "non-configurational" languages:[8]

(S1) a <u>Shí</u> <u>díí</u> <u>'ashiiké</u> bich'odeeshniil   **Navaho**
        I   this boy:PL   3O:1S:take the side of
        'I will take the side of these boys'

      b. bich'odeeshniil
          3O:1S:take the side of
          'I will take his/her side'

(S2) a <u>Sarah</u> k'ahjine sedéhcho   **Slave**
          almost   1S:3O:IMP:be of a size with
      'Sarah is almost as tall as me'

      b. k'ahjine sedéhcho
         almost   1S:3O:IMP:be of a size with
         'He/she is almost as tall as me'

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[8] Forms taken from Saxon will have a prefixed S to the number they are assigned in Saxon (1985).

Saxon find contrasts between Navaho and Slave in the following examples where it is not possible to have missing NPs:

(S18) a.   ble   hé   tádihwle
              knife with   2S-IMP-cut
              "Cut it with the knife"

      b.   *hé   tádihwle
              with 2S-IMP-cut
              "Cut it with it"

      c.   behé   tádihwle
              3-with   2S-IMP-cut
              "Cut it with it"

(S19)   a. sú tuwele k'ágoweneli
              Q soup   2S-PF-taste
          "Did you taste the soup?"

      b.   *sú   k'ágoweneli
             Q   2S-PF-taste
          "Did you taste it?

      c.   sú   bek'ágoweneli
             Q   3-2S-PF-taste
          "Did you taste it?

(S20) a.   Charlie lié   cf.   li
               dog (poss'd)   dog (non-poss'd)
             "Charley's dog"
      b.   *lié
             dog (poss'd)
             "his dog"
      c.   belié
             3-dog (poss'd)
             "his dog"

In the (S18) forms, we see complementary distribution between an agreement morpheme and an overt NP. In (S18a) we get the NP with the uninflected postposition, *bie hé, knife with*, but in (S18c) we get the inflected postposition with no NP, *behé, 3-with*. In (S18b), neither the NP nor the agreement morpheme surfaces and the form *hé, with*, is excluded. In (S19) and (S20), Saxon extends the demonstration of the Dogrib pattern to direct objects and and possessors in NP. In Navajo, however, the corresponding a and b forms are acceptable.

Saxon interprets the above data as follows: [in Dogrib] "The examples of (18)-(20), grammatical with a lexical NP, as in (a), are ungrammatical if the NP is 'missing', as in (b). The (c) examples show that if an overt Agreement form is used to 'replace' the missing NP, grammatical sentences are found again." She makes the following argument: Since (1) Missing NPs are characteristic of non-configurational languages ('lexically projected'); (2) Lexically projected languages always permit null NPs (Navaho does, for examļ \e); (3) Slave does not *always* permit null NPs, though it does permit them in many environments; thus, (4) Slave is not lexically projected and must be syntactically projected (i.e. is in the class with English and not in the class with Navaho). In fact, we could turn Saxon's argument on its head by making the following argument. The examples of (18)-(20), grammatical with an agreement clitic, as in (c), are ungrammatical if the clitic is 'missing', as in (b). The (a) examples show that if an overt NP is used to 'replace' the missing clitic, grammatical sentences are

found again." We could then argue as follows: Since (1) theta-marked clitics are not characteristic of configurational (syntactically projected) languages (2) syntactically projected languages do not theta mark clitics (English does not, for example); (3) Slave theta-marks its clitics; thus, (4) Slave is not syntactically projected and must be lexically projected. Thus, Saxon reasons from the premiss that the crucial difference between English and Warlpiri is that NPs are often not expressed in Warlpiri and she assumes that obligatory NPs is a hallmark of configurationality (though, obviously see Italian, etc.). Following Jelinek, however, we might also reason that a particular relation between lexical heads and agreement morphemes defines non-configurationality. Slave shows a familiar pattern (more examples of which appear in Chapter 4) of complementary distribution between agreement morphemes and full NPs. The question then is whether we should focus on the fact that NPs are sometimes required, in the absence of a clitic, (making Dogrib seem configurational) or the fact that Dogrib NPs are sometimes (obligatorily) absent, in the presence of a clitic, (making Dogrib seem non-configurational). Both arguments go through but seem to miss the central intuition which is that, contra Jelinek, there may not be two types of systems [NP as arguments or clitics as arguments] but may a type of middle case. Saxon does not suggest this however and uses the above data to drive the following discussion:

...how do Navajo and Slave children recognize their languages as lexically or syntactically projected? For the Navajo child, the crucial evidence must be of the following type:

(S36) a. Mary bá
               3.for
           'for Mary'
        b. bá
            3.for
            'for her/him

The children learn from contrasts such as these that the occurrence or non-occurrence of a lexical NP in a phrase does not affect the availability of a form, or its morphological structure. Thus they recognize Navajo as lexically projected. This is not what Slave children learn, however. The hear (37), but never (38).

(S37) a. Mary gha
               for
           'for Mary'

        b. begha
            3.for
            'for her/him'

(S38)   *gha
          for
          (for her/him)

They may deduce from this that the occurrence or not of a lexical NP in a phrase is significant and therefore that Slave is syntactically projected.(p.17)

The difference between Navajo and Slave is that in Navajo postpositions are always inflected and may take an optional overt NP object, while in Slave, the postposition has a choice of appearing with either an NP object or inflection on the head P. In neither language can the postposition surface without some nominal (either inflection

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or a full NP). It seems to us much more reasonable to suppose that the Navaho child learns from (S36) that theta-marking and government is right-to-left in Navaho (and if negative evidence were available, that Navaho cannot assign its theta-roles externally) and the Slave child only learns from (S37-38) that (1) Slave assigns its θ-roles to the left; and (2) theta-roles can be assigned internally or externally to the category P. Both language learners should get the following from UG: (3) Subcategorized theta-roles must always be discharged. We need only say that Navaho does not assign its theta-roles externally and that Slave may assign its theta-roles externally to explain the contrasts above. The only case which is blocked in Slave (and presumably in Navaho, and all languages) is one in which the postposition does not assign a theta-role to either the object or the object clitic. What is crucial is that Navaho and Slave do not differ on the "superficial characteristics of non-configurationality" and a theory which makes Navaho different from a set of languages including English and Slave is going to face difficulty explaining the data from these superficial characteristics because Slave patterns with Navaho instead of English. Slave behaves like Navaho as a function of θ-marking its clitics, which is Jelinek's claim.

In a footnote, Saxon presents evidence that the view we are taking here is correct.[9] There is a Slave construction in which

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[9] The footnote 5 which we refer to is *appended* to a September 10, 1985 version of the paper. A different footnote 5 appears in the text of that version but we will be refer to the appended footnote 5, which is undated.

ungrammaticality does not result from the absence of an overt NP possessor (cf. S20 above).

(S20) a. Charlie lié   cf. łi

             dog (poss'd)   "dog (non-poss'd)"
        "Charley's dog"

    b. *lié
      dog (poss'd)
   "his dog"

    c.   belié
       3-dog (poss'd)
     "his dog"

(Sf5i) a. Margaret bemo
            3-mother
      "Margaret's mother"

    b. bemo
     3-mother
    "her/his mother"

c. *Margaret mo
mother
"Margaret's mother"

d. *mo
"mother"

Here there is no complementary distribution between clitic and the overt NP. In the unique case in Slave where marking of the clitic is obligatory (bemo vs. *mo), it is not possible to have just the overt NP (*Margaret mo). This is precisely the connection we expect. If the clitic is obligatory, then it is obligatorily θ-marked, as in Navajo, and the NP appears as an adjunct. Saxon states: "Like the Navaho examples discussed in footnote 3, this construction is unexpected, given the claims that stand concerning the projection type of Slave. I consider the given case a well-defined exception to the usual pattern."

Footnote 3 refers to examples in Navaho where it is not possible to omit objects of complex postpositions. The following are examples Saxon gives from Young and Morgan (1980):

(i) Shádí   k'eh   yánííti'
    1S-older sister according to 2S-IMP-speak
    "You talk like my older sister."

(ii) T'áá shinii   k'eh   'ásht'í
     Just 1S-mind according to   1S-PF-do
     "Do as I say."

(iii) dzííta'gi
      mountain-between-at
      "between the mountains; inter-mountain"

(iv) Gah yázhí yas   tah   yilwoł   go   yiłtsá
     rabbit little snow among   3-IMP-run COMP 1S-PF-see
     "I saw the little rabbit running in (among) the snow"

In these cases, it is not possible to omit the object of the postposition (an exception to the general Navajo pattern). Saxon cites Young and Morgan as noting that these constructions appear to be lexical compounds.[10] In any event, they are not inflected with an Agreement clitic, as were the cases in Navaho where omissibility of the NP was possible. What is interesting to us is that examples in Navaho where it is not possible to assign a theta-role to a clitic result in theta-assignment to the overt NP predictably leaving no option for failing to discharge the theta-role by omitting the NP. Saxon notes: "In footnote 5, we see a construction involving postpositions which has more the character of lexical projection than of syntactic projection. If Athapaskan languages are undergoing a process of change from syntactic to lexical projection, then these Navajo examples are historical remnants, and the Slave example [footnote 5-mja] is a construction ahead of its time. Or vice versa." There is no need to assume a construction to be ahead of its time or that Navaho is moving toward configurational status or away from it. Hale's analysis of complementary distribution 'agreement cases' discussed in detail in Chapter 4 handles the Navajo and Slave cases easily, without affecting the configurational status of these two similar languages. Further, the

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[10] I thank Ken Hale for confirming the lexical compound or idiom status of these constructions.

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Slave pattern of some obligatorily possessed nouns and other non-obligatorily possessed nouns (or obligatory non-possessed nouns) is quite common (see Hixkaryana, for example with the same pattern of data as Saxon presents for Slave, Derbyshire:1979, 1985) and does not represent evidence for a move toward lexically projected status.

Summarizing the material from footnotes 3 and 5, Saxon sees the material in footnote 5 as an exception and footnote 3 as a historical remnant. Neither example is easily explained by the lexical/syntactic projection distinction. Both cases can be explained by the assumption that there are languages (and constructions) in which theta-roles may be assigned to clitics <u>or</u> to overt NPs, a conclusion we explore and support in Chapter 4.

The lexical/syntactic distinction offers nothing to our understanding of how Hale's diagnostics reflect underlying differences among languages and, finally, Saxon's distinction is bivalent and requires further parameterization to distinguish languages like Warlpiri from languages like Navaho, languages like Slave from languages like English and, further, languages like Japanese from languages like English. Given this, we do not accept the lexical/syntactic projection distinction derived from the test of omissibility of NPs. (We discuss this *omissibility* in detail in Chapter 4.)

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2.5.2 The Saturation Parameter (Speas 1986)

We will now briefly consider an analysis due to Speas (1986) in which she formulates a "configurationality parameter" very similar to that in Saxon's (1985) lexical and syntactic projection. Speas uses the following terminology:[11]

(40) The Saturation Parameter

a. In a Lexically Projected language, theta-positions are discharged through theta-role assignment in Morphological structure.

b. In a Syntactically Projected language, theta-positions are discharged through theta-role assignment in Syntactic structure.

Speas thus follows Jelinek in assuming that in a hyper-rich agreement language such as Navajo, thematic-roles are discharged to agreement clitics. However she explicitly rejects Jelinek's claim that (the optional) NPs are non-arguments. She states (p. 215):

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[11] We will not present the arguments against Saxon's account in this section. In general, the implications for Speas' distinction should be clear from the section on Saxon. Furthermore, many of the arguments to follow here regarding Speas (1986) apply equally well to Saxon (1985). In particular the argument, made several times in this chapter but most strongly below, that a bivalent configurationality parameter is insufficient will apply to Saxon's distinction.

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...although the theta-roles are discharged by the clitics, the overt NPs are governed by the verb. The view of Chomsky (1981, 1986a) that the status of a particular position as an A(argument)-Position is divorced from its status as a theta-position.[sic] Thus, we can clear up an ambiguity in Jelinek's claim that pronominal clitics 'are arguments'. The overt NPs in the above phrase marker are in A-Positions in that they are governed by V-zero, but these are not positions to which theta-roles are assigned.[12]
(p. 215)

This position does not seem consistent with the cited position of Chomsky. In what is presumably the section of Chomsky (1981) to which Speas is referring, he notes (p. 47):

"The positions to which GFs (grammatical functions or theta-roles) are assigned are sometimes called "argument positions", but since I am using the term "argument" in a slightly different way, I will avoid this terminology, referring to them rather as "A-positions"... An A-position is one in which an argument such as a name or a variable may appear in D-structure; it is a potential θ–position. The position of subject may or may not be a θ–position, depending on properties of the associated VP. Complements of X' are always θ–positions, with the possible exception of idioms.

Chomsky refers in a note (Ftn. 12, p. 138) to the tendency to use "argument" to refer "to elements occupying 'argument positions'", i.e. "base-generated NP-positions." Thus, Speas seems to imply that Chomsky (1981) suggests that there is a class of elements (call them [-θ+A]) which are NPs not assigned theta-roles but which nevertheless

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[12] The second sentence presumably should read "The view of Chomsky (1981, 1986a) is that the status of a particular position [qua. MJA] as an A(argument)-Position is divorced from its status as a theta-position."

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are arguments. It is not-obvious that Chomsky suggests this, since he still refers to 'potential theta-roles' for particular subjects—and does not advocate suspension of the theta-criterion. Be that as it may, it is not clear why Speas wants to associate the properties of these elements, idioms and subjects of particular "associated VPs" in Chomsky's sense (perhaps pleonastics), with the properties of Navajo overt NPs. That is to say, Chomsky does not suggest a class of $-\theta+A$ and furthermore it seems dubious to associate this category with Navajo NPs.

Speas suggests that her analysis improves on Jelinek's by deriving a similarity among both types of languages in the concept *chain*. She derives this by assuming that overt NPs in 'morphologically projected' languages receive structural Case, like English NPs. In English, as is familiar, we see transformations which result in the formation of chains (an NP and its coindexed trace, as below) with the trace receiving a thematic-role and the moved NP receiving Case.

(41) a. John was hit

    b. *e* was hit John
               $+\theta$, -Case

    c. John$_i$ was hit t$_i$
       +Case $+\theta$

Though not stated as such, Speas suggests the same for morphologically projected languages, with the agreement clitic

assuming (literally) the role of the trace, as follows: (data from Jelinek, 1984, 43; Speas, 1986; 219)

(42)   Wawirri kapi-rna- Ø   panti-rni   yalumpu
       +Case   +θ
       kangaroo AUX;1Subj-3obj spear-NONPAST that
       'I will spear that kangaroo.'

There is a chain (wawirri, Ø) analogous to the chain (John, t) in the passive example above (41). The claim she makes (explicitly) is that the Warlpiri type chain is parallel to that of the English left-dislocation construction demonstrated below: (Speas, 1986; 217, 204, respectively)

(43) a. My sister, she's a genius.
      b. That car, man, I thought it would never make it over here.

These chains cannot be parallel to (NP, agreement clitics) chains in Navajo or Warlpiri, even under Speas' terms. First, the left-dislocated NP in (43b) is not governed by V^0 as Speas argues Navajo direct objects are.   Secondly, the left-dislocated NPs in (43) do not seem to receive Case from the standard Case assigners, as Speas suggests for the head (wawirri) in the chain (wawirri, Ø).

There is a clear sense in which the examples in (43) *should* look like chains in non-configurational languages—this point is made by Jelinek (1984) for examples like "He[i], the doctor[i], tells me[k], the patient[k], what to do." Speas seems to share this intuition but her theory cannot adequately express the similarity for the reasons just mentioned: the left dislocated object NP in (43) is not obviously

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governed by V and the left dislocated NPs in (43) do not seem Case marked by the ordinary means, as Speas argues is true for Navajo overt NPs. Jelinek, on the other hand, who argues that Navajo overt NPs are not governed by V and does not claim that overt NPs in Navajo are assigned structural Case, can capture the similarities between English left-dislocation and the overt NP-agreement clitic relation in non-configurationality.

Since the connection between the two types of constructions is largely a matter of intuition, which we cannot ultimately decide, we must turn to the underlying claims. We have argued that Jelinek's analysis (V does not govern Navajo NPs, Navajo NPs are not assigned structural Case) permits the same analysis of English left-dislocation and Warlpiri/Navajo overt NP constructions, while Speas' assumptions for Navajo (government of overt NPs and structural Case assignment to them) do not; we may ask: which of these sets of assumptions is correct.

This merely raises the question: correct for what? Speas' analysis makes the assumption that overt NPs in Navajo are governed and assigned Case, very much like English NPs. Speas correctly predicts that Navajo would have relatively fixed word order, just like English, as a result of the fact that Navajo NPs must be proximate to their Case assigners. Jelinek rejects both of these assumptions: neither of her claims imply the need for NPs to be proximate to governors or Case assigners. And Jelinek is correct also, but for Warlpiri. Navajo has fixed word order, suggesting that Speas may be

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correct; Warlpiri has radically free word order, suggesting that Jelinek may be correct. What is striking then is that it seems Speas and Jelinek intend their theories to be theories of *both* Navajo and Warlpiri. They share a crucial assumption (thematic-roles are assigned to agreement clitics in hyper-rich agreement languages of the Navajo/Warlpiri type) but they diverge on how to account for the word order properties. In particular they differ on how Case is assigned in Navajo/Warlpiri type languages.

With respect to Case assignment, Jelinek and Speas show a difference mirroring the problem above. Speas suggests that Case assignment in morphologically projected languages is structural Case, as in English, as opposed to lexical Case, such as that assigned by obliques, case endings in Japanese (see Travis and LaMontagne, 1987, and references there) and so forth. This has the appealing consequence of correctly predicting that Navajo would lack overt case, again just like English. Jelinek, on the other hand, argues, as we discussed above, that structural Case is not assigned to overt NPs. Jelinek assumes that *lexical Case* is assigned to overt NPs and thereby derives the equally appealing prediction that (1) Warlpiri has rich overt case; and (2) Warlpiri case is free to be ergative/absolutive while its agreement is nominative/accusative. Thus, Jelinek denies the link between overt NPs and agreement clitics, as chains and provides a compelling analysis of Warlpiri overt case on the basis of it. Speas asserts a chain link and derives a compelling analysis of Navajo non-overt case on the basis of this assumption.

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It appears that Jelinek (1984) can analyze Warlpiri and not Navajo while Speas (1986) can analyze Navajo but not Warlpiri. This is not in itself disastrous for either theory, but both theories purport to be able to explain both types of languages. We do not agree. In Chapter 3 we adopt the view that any theory which ignores the distinction between Warlpiri and Navajo is not a reasonable candidate for the correct explication of the issue of non-configurationality.

2.5.3 Summary of the Analyses Considered Thus Far

Thus far we have several analysis of non-configurationality which differ in a number of details. The crucial detail which these analyses share is that they are bivalent parameters. This is rather curious, given a superficial consideration of the typological data. For example, Navajo has optional NPs and agreement clitics for subject and direct object. It meets the criterion for a nonconfigurational language in Jelinek's terms (and Speas' as well). While it is true that Navajo lacks overt case, this is also true of Papago which Jelinek and Hale explicitly label non-configurational. In short, Navajo seems a clear example of a language which assigns thematic-roles to agreement clitics. As Jelinek writes: "...since nominals are mere adjuncts, there is nothing to require that they have a fixed order" (p. 50). Navajo nominals *do* have a fixed order, the subject nominal precedes the object nominal (except in cases where a special verbal affix indicates that the order is reversed) (see Hale, Jeanne and Platero, 1977). Navajo does not manifest the most obvious property of non-configurational languages,

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Navajo does not have free word order any more than, for example, English does. Jelinek (1984), Saxon (1985), Speas (1986), perhaps Hale (1984), etc., do not admit a distinction between Navajo and Warlpiri. Hale (1981, 1982), and also Speas (1986), recognize that the supposed properties of non-configurationality do not pattern as a single set with all non-configurational languages having all the properties and all configurational languages lacking all of them. Researchers have idealized over these distinctions. Perhaps recognizing the subcases would lead to abandoning the notion of non-configurationality. This is not logically necessary, however. Alexander (1986) argued that there is a way to approach non-configurationality which does not lose gross distinctions between languages such as Warlpiri and Navajo. This approach involved two distinctions separating the possible languages with respect to configurationality. Although that analysis was neutral with respect to whether these distinctions were parameters, here we shall take the view that there is no need to assume parameters and that the distinction follows independently from general principles of the grammar.

Chapter 3
A Non-Bivalent Theory of Non-Configurationality

Having discussed several formulations of a proposed parameter which opposes, at least, the canonically non-configurational Warlpiri from the canonically configurational English, for the remainder of this chapter we discuss a multi-valued opposition, the case/agreement distinction, proposed in Alexander (1986) and extended in Alexander (1988). In this section we focus on the strengths of the case/agreement view over classical non-configurationality. We then discuss ways that successes of non-configurationality can be replicated within case/agreement and examine some problematic cases which arise from the initial, informal characterization of case/agreement.

Preliminarily, almost like a mnemonic device, we can think of configurationality as the characterization of the difference between four gross types of languages represented by English, Warlpiri, Navajo and Japanese. Thus far we have discussed theories of configurationality which in one way or another make a binary opposition between languages like English and some other class of languages. This other class of languages could be understood very broadly, including, for example, languages as different from one another as Japanese, Navajo and Warlpiri. This might be entailed by the analysis of configurationality in Chomsky (1981) where the presence of a VP constituent was the salient characteristic of

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configurational languages.[1] Other theories, following largely from Hale (1982) oppose English and Japanese on the one hand with Navajo and Warlpiri on the other (cf. Jelinek:1984, Speas:1986, etc.). Another analysis we have discussed, that of Saxon (1985) opposes English, Japanese and Dogrib on one hand with Navajo and Warlpiri on the other. Previous discussions of non-configurationality have thus shifted the four canonical tokens (Warlpiri, Navajo, English and Japanese) into two piles and several distinct permutations have been claimed as the correct *binary* configurationality distinction. Alexander (1986) departed from this tradition in non-configurational analyses by arguing that it was incorrect to look for a simple binary distinction with respect to the properties of non-configurationality and suggested two separate oppositions: on the basis of rich morphological case and agreement.

As a typological fact not particularly abstract from the data it is possible to separate the four canonical tokens on the basis of morphology. For example, Japanese and Warlpiri share the property of having rich case systems, while English and Navajo share the property of lacking them:

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[1] Under a Chomsky (1981) conception, Navajo would presumably be configurational given its fairly rigid SOV word order. Of course, proponents of a Chomsky (1981) type analysis could also adopt most of Jelinek's adargument analysis of Navajo. It is not likely that anyone will attempt this but the part of Jelinek's analysis which assumes that languages like Navajo lack VP constituents is one which we will present evidence against in this work.

(1) a. John-ga   sushi-o   tabeta
     John-NOM   sushsi-ACC ate
     'John ate sushi'   (Japanese)

   b. <u>kurdu-jarra-rlu</u> ka-pala   maliki   wajilipi-nyi   <u>wit-jarra-rlu</u>
      child- Dual-ERG PRES-DL dog-ABS chase-NPST   small-DL-ERG
      'The two small children are chasing the dog.' (Warlpiri)

   c. The rock crushed John. (English)

   d. Ashkii at'ééd yiyiiłtsá
      girl   boy   30-3S-saw
      'The boy saw the girl' (Navajo)

We have four subject NPs in the above sentences *John-ga* (Japanese) *maliki* (Warlpiri), *the rock* (English) and *ashkii* (Navajo). To convert these subject NPs into examples of direct object NPs would require morphological changes in Japanese (for example to *John-o*) and Warlpiri (to an ergative form) but not in English or Navajo where *the rock* and *ashkii* would remain unchanged. This is a general fact about NPs in English and Navajo, just as the need for morphological case changes (covariant with the change from subject to object) is a fact about Japanese and Warlpiri. With respect to morphological case there is a simple descriptive distinction which may be drawn between English and Navajo on the one hand and Japanese and Warlpiri on the other.

Another distinction may be made on the basis of richness of overt agreement. Consider some examples from the languages we have been considering:

(2)   a. At'ééd ashkii yiyiiłtsá
          girl   boy   3S-3O-saw
          'The girl saw the boy' (Navajo)

      b. ngajulu-rlu ka-   rna-   ngku   nyuntu-∅ nya-nyi
          I-   ERG   PRES-1sgNOM-2sgACC   you- ABS see-NPST
          'I see you' (Warlpiri)

      c. John likes that picture.

      d. John-ga   sushi-o   tabeta
          John-NOM sushsi-ACC ate
          'John ate sushi'   (Japanese)

In Navajo and Warlpiri, the person and number of the subject
and of the direct object are registered, on the verb in Navajo and on
the AUX in Warlpiri whereas the person of the direct object is not
registered on the English verb and neither the person of the subject
nor of the direct object is registered on the Japanese verb. In Navajo
and Warlpiri, changing the grammatical person of the direct object
induces a covariant morphological change in the AUX or verb; more
simply, Navajo and Warlpiri have direct object agreement while
English and Japanese do not. Navajo and Warlpiri have far richer
agreement than English and Japanese. This is not to say that English
or Japanese lack agreement (this is a question which we would have to
discuss separately) but there is a clear sense in which Warlpiri and
Navajo are opposed to English and Japanese. Together with the
distinction with respect to rich case systems, we have found two
cross-cutting oppositions (rich agreement links Navajo and Warlpiri
and rich case links Warlpiri and Japanese). To summarize them (for

now, using ±AGR to mean agreement for the person of the subject and direct object, and ±Case to indicate whether the subject and the direct object trigger different case marking):

(3) **The Case/Agreement Opposition**

	+Case	-Case
+AGR	Warlpiri	Navajo
-AGR	Japanese	English

In its simplest form: the central claim of the case/agreement analysis is that the interesting properties of non-configurational languages can be related the typological location of particular languages in the schema above; i.e., where languages find their place in (3) on the basis of observable, morphological properties.

We claimed in Alexander (1986) that the 'superficial characteristics of non-configurationality' vary with respect to the morphological classes above. Hence:

Properties which contribute to [+Case, +Agreement]

[+Case] [+Agreement]

[+Case]
a. "free"(-er) word order
g. use of a rich case system

[+Agreement]
b. pronoun drop
c. no NP movement
d. no pleonastics
e. complex verb words
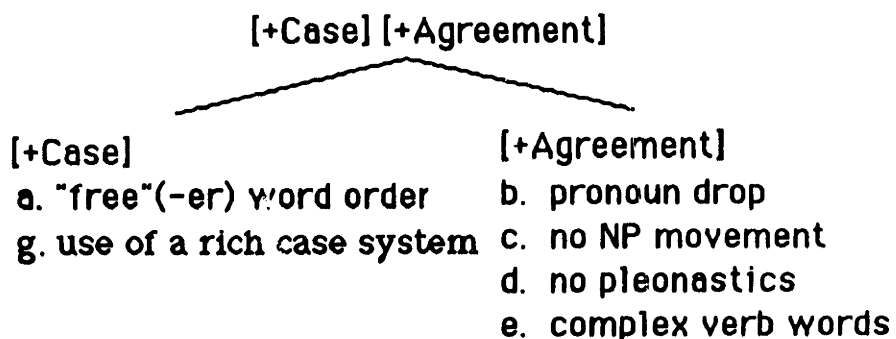
We claim that in the unmarked case, [+Agreement] languages will have the right side properties and [+Case] languages will have the

left side properties. Naturally, [+Case, +Agreement] languages will have both. The [+Case] properties follow naturally from assumptions about case dating back to Sapir (1921) and beyond. The [+Agreement] properties, that rich agreement (sufficiently rich for subject and object) licenses null anaphora and excludes NP movement and pleonastics are the consequences of Hale and Jelinek's analyses of θ-marking of clitics (see above).

3.1 On the Goals of Case/Agreement

The schema in (3) is a possible way of dividing this group of four languages into four classes. There are two related questions suggested by the classification. First, is it an interesting classification from which other facts can be made to follow and, second, is it possible to formalize the notions [±Case] and [±Agreement] in a non-trivial way that provides (a) this four way opposition rather than some unintended other classification; and (b) allows this distinction to be projected onto a larger class of languages which still gives us an interesting classification, i.e. does it account for more than four languages? Naturally, we will begin by exploring whether this is an interesting classification before considering ways to formalize the relevant opposition.

We have induced a distinction of the four canonical tokens of configurationality from which particular subclasses may be formed. For example we may speak of the [+Agreement] languages to mean Navajo and Warlpiri. We may refer to the [+Agreement, -Case] class of

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languages to mean Dogrib, Slave, Navajo, Hixkaryana, etc.. We may ask whether case/agreement induces the "correct" classification, whether it groups languages together which should be grouped together. This is answerable on many levels. First, note that it is an empirical question deserving study whether languages pattern on the basis of morphological typological uniformity. Many grammatical traditions have assumed that they do and quite apart from configurationality, it makes sense to group languages on the basis of morphological types for the purposes of exploring this independently interesting question. Beyond that, however, this theory makes particular claims, it makes it very easy to relate shared properties of the unrelated languages Navajo (Athapaskan), Hixkaryana (Carib), Yagua (Peba-Yaguan) since these languages are all [+Agreement, -Case]. It makes it very difficult to relate shared properties of Yagua and Russian since Yagua is [+Agreement, -Case] and Russian is [-Agreement, +Case]. It is predicted from the case/agreement formulation that shared properties of Yagua and Russian will either be accidental and uninteresting or will tend to be good candidates for universal properties of language. Further, if the class of [+Agreement, -Case] languages have no general properties, or if, for example, half of the [+Agreement, -Case] languages share properties with some subset of the [-Agreement, +Case] languages, the case/agreement distinction is spurious. The predictions of case/agreement are fairly clear (even when informally presented): the presence of particular syntactic properties of languages (we shall soon answer the question 'which

properties') will be covariant with morphological richness of agreement and case. The morphological case and agreement facts of particular languages will make strong predictions about the language's syntactic properties. In principle then, this is the skeleton of a very powerful theory of configurational variance. An interesting question is now salient. Even assuming that the four way classification in (3) is correct [dividing these four languages into four classes], are the bases used for the distinction the correct ones (e.g.. morphological case and agreement)? The point being: might we be getting the right classes for the wrong reasons? We will briefly explore this question now for the following reason. By considering other possible bases such as the presence of discontinuous constituents or extensive null anaphora, we will be testing which bases are most promising for inducing a productive distinction. If these putative alternative bases can themselves be derived from the case/agreement distinction, we will have independent motivation for case/agreement. To demonstrate the reasoning, consider the effects of trying to derive the four way distinction above from the property of having or lacking discontinuous constituents. We gave an example in (1) of a discontinuous constituent in Warlpiri, reprinted below in (3c):

(4) a. kurdu-jarra-rlu ka-pala   maliki   wajilipi-nyi wit-jarra-rlu
       child-DL-ERG PRES-DL dog-ABS chase-NPST small-DL-ERG
       'The two small children are chasing the dog.' (Warlpiri)

    b. [NP The rock] crushed John.

    c. *The crushed John rock.

    d. Taroo-wa [NP sono okane-o]   dare-ni   yatta ka?
       Taroo   the money-ACC who-DAT gave Q
       'Whom did Taroo give the money to?' (Japanese)

    e. *Taroo-wa okane-o   dare-ni   sono(-o) yatta ka?
       Taroo   money-ACC who-DAT the-ACC gave Q
       ('Whom did Taroo give the money to?')

    f. Mary bi-má   ashkii yiyiłtsá
       Mary 3-mother boy   3S-3O saw
       'Mary's mother saw the boy' (Navajo)

    g. *Mary ashkii bi-má yiyiłtsá
       ('Mary's mother saw the boy')

On the basis of discontinuous constituents (more properly the distinction [±discontinuous constituents] we get [+dis.con] Warlpiri opposed to [-dis.con] English, Navajo and Japanese. Hence a classification of non-configurationality might be Warlpiri on one hand and English, Japanese and Navajo on the other. The basis for the classification is that only Warlpiri permits discontinuous constituents (at least of a particular type which we could presumably formalize). This opposition (with Warlpiri opposed to English, Japanese and Navajo) is itself derivable from the case/agreement opposition in (46).

We have a vocabulary to describe the class of languages [+Case, +Agreement] which permit discontinuous constituents. Further, by using case/agreement to define the class of languages which permit discontinuous constituents, we are making a very strong empirical claim about the morphological type of languages which have discontinuous constituents, i.e. they are predicted to be [+AGR, +Case].

By its nature the case/agreement analysis is a much more interesting theory than the non-configurational analyses we have discussed thus far. In attempting to describe discontinuous constituents in Warlpiri as being a function of the [+Case, +Agreement] nature of Warlpiri, we have richly empowered the case/agreement opposition. This is a very strong theory, far too strong to be adequately tested with the four language in our small sample set. There are two types of predictions. First, the weaker claim: all languages which have rich morphological case and which have agreement for the subject and direct object (the present intuitive characterization of +Case, +Agreement) would have at least the option of discontinuous constituents of the Warlpiri type. Secondly, the stronger claim: languages which are not [+Case, +Agreement] (i.e. [+Case, -Agreement], [-Agreement, +Case], [-Agreement, -Case]) cannot have discontinuous constituents of the Warlpiri type.

One could always weaken the case/agreement distinction's predictions by finding an alternative explanation of discontinuous constituents which does not make reference to [+Case, +Agreement],

but a very strong theory is possible using the case/agreement opposition.

Why is this view stronger than the alternative? An analysis which claimed that non-configurational languages have discontinuous constituents and configurational languages do not makes no predictions about discontinuous constituents. It is the defining characteristic, the 'diagnostic' as it were. Any analysis *based* on discontinuous constituents as a diagnostic would be circular *with respect to* discontinuous constituents. Further, it is awkward to try to derive the four-way case/agreement distinction from discontinuous constituents. It can be claimed that languages with discontinuous constituents have both rich morphological case and agreement for the subject and direct object (thus defining the subclass [+Case, +Agreement] in terms of discontinuous constituents) but the strongest possible claim about languages *lacking* discontinuous constituents is that they do not have *both* morphological case and agreement for the direct object. Thus, a bivalent configurationality parameter based on discontinuous constituents can derive the fact that discontinuous constituents appear in [+Case, +Agreement] languages (if it *is* a fact) but it cannot provide any interesting characterization of languages *without* discontinuous constituents,. Such a theory does not provide a link between configurational and non-configurational languages and thus does not resolve the central issue: why configurational languages are not non-configurational languages? The case/agreement opposition can explicate this question in a superior manner.

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Note now that there are two distinct senses in which [+Case, +Agreement] might be said to *explain* discontinuous constituents.

The weak sense, the typological sense, is that the case/agreement opposition provides a vocabulary which can adequately describe the class of languages having discontinuous constituents [+Case, +Agreement] as well as the class of languages which do not (the other three types). Even these two partitionings are separable since the theory could characterize a domain of languages which never have discontinuous constituents (say, non [+Case, +Agreement] languages) but make no claim about the class of languages which do have discontinuous constituents. The reverse is possible as well.

The strong sense in which case/agreement can explain discontinuous constituents is by showing that discontinuous constituents are themselves a result of language's having the combination of rich case and rich agreement. Certainly one could imagine such an analysis (a proposal of this kind is suggested in Alexander, 1986 and is developed further here) but *this* is *not* the test of whether the case/agreement distinction is correct, as may erroneously be supposed.

Consider the logic of the classical non-configurationality parameter. It is assumed that there is an opposition between languages sharing a certain set of properties (such as lack of pleonastics, discontinuous constituents, lack of NP movement, etc.) and a set of languages which lack all of these properties (but which may have some subset of them). Thus, non-configurationality is opaque

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with respect to the properties of configurational languages since the non-configurationality parameter does not make predictions about particular properties of configurational languages (say, lack of pleonastics which, from the point of view of non-configurationality, may or may not appear in configurational languages—a correct prediction, by the way). In fact non-configurationality takes the weakest possible stance with respect to *configurationality*. It claims that configurational languages will lack *as a complete set* the properties of non-configurational languages. Unfortunately, this is not a prediction which could be proved false, even in principle, because if a hypothetical language did have the complete set of properties of non-configurational languages (lack of pleonastics, lack of NP movement, etc.) then from the point of non-configurationality this hypothetical *configurational* language would be *non-configurational* on the basis of its having the diagnostics or superficial characteristics of non-configurational properties. Thus, non-configurationality claims two classes of languages, call them type A and type B. Non-configurationality "predicts" that languages of type A have properties P_1, P_2, P_3...P_n and that languages of type B may have *particular* properties such as P_1, P_2, P_{n-1}, etc., but may not have *all* the properties P_1 to P_n. To falsify such a theory requires the existence of a language of **type B** which does has properties P_1 to P_n, but if there were such a **type B** language, the theory would be forced to say that this *type B language* is a *type A language* , thus denying the premiss; one could formalize the contradiction.

Non-configurationality is a theory which cannot be proved false and consequently an uninteresting theory. Non-configurationality is so weak because it has no means of classification except the data that characterizes the phenomena it describes. The improvement of non-configurationality in Alexander (1986) was to repair this weakness by providing an independent basis for the configurationality distinction which relied on rich case and rich agreement, two properties having a clear intuitive and empirical status.[2] This move expands classical non-configurationality (which, as just shown makes no predictions whatsoever) and makes very clear and strong predictions. If we encounter a language without case (like Navajo) the case/agreement distinction unambiguously predicts that that language will lack discontinuous constituents of the Warlpiri type.[3] If we find a language without rich agreement (such as Japanese) the case/agreement analysis predicts that it will also lack discontinuous constituents. This is by many orders a stronger theory than classical non-configurationality. Naturally, a theory of such power is easily falsified and as such represents an improvement over classical non-configurationality. This is the chief basis for distinguishing the

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[2] Logically this improvement did not crucially rely on case or agreement, any independent basis would have saved the empirical status of configurationality. One could have (in the spirit of Jelinek, 1984) used subject and object agreement as the defining property of non-configurational languages and attempted to derive the other properties of non-configurational languages from it. This would have raised descriptive problems (since the opposition is still binary) but it would have solved the logical problem of circularity in defining the class of configurational and non-configurational languages.

[3] Ignoring for now examples like hammer a nail in from English.

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case/agreement approach from classical non-configurationality and this is one of the senses in which case/agreement is superior to non-configurationality.[4] It is only at this point that we might ask whether the fact that [+Case, +Agreement] languages have discontinuous constituents follows in some way from case/agreement. If so, then we have found the *strongest* possible support for case/agreement, though this is far beyond what is needed to show that case/agreement is a more appealing theory to pursue than non-configurationality. Hence we claim that it is erroneous to assume that case/agreement rises or falls on the basis of its particular analysis of discontinuous constituents (as opposed to its ability to predict/express the class of languages which have discontinuous constituents). If case/agreement provided the correct classes of languages with respect to the properties of non-configurationality on the basis of some outlandish distinction such as 'language name begins with a glide and ends with a voiced stop' it still makes correct predictions about which languages are non-configurational. The analysis of why the non-configurational languages

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[4] Another we have mentioned is that the case/agreement distinction is not binary, an independent problem for non-configurationality. A problem with defining the properties of non-configurational languages is suggested by this. If non-configurational languages are discoverable as such by having all the properties of non-configurational languages (and, as is independently necessary, that some languages may have subsets of the properties, such as Italian having null anaphora). Languages like Navajo which have some of the properties of non-configurational languages (lack of NP movement, lack of pleonastics, etc.) but not others (discontinuous constituents, free word order) are problematic. It is generally assumed that Navajo is non-configurational but the basis for this is not made explicit. The criteria of non-configurationality are not clear and consequently there are proposals, such as Saxon (1986), which oppose languages such as Dogrib and Navajo on the basis of configurationality even though Navajo and Dogrib essentially do not differ on the basis of the generally understood data of non-configurationality, that is,some version of the superficial characteristics of configurationality discussed in Hale (1982).

have the properties of non-configurational languages is independent from the question of the proper classification of the languages themselves. Naturally we would expect that the correct typological theory is at least related to the correct syntactic theory but we should not conflate the evaluation of these two types of theories. Case/Agreement makes claims about both types but as a typological theory, independently, case/agreement is the best theory of non-configurational variance in the literature to pursue because it avoids the circularity in defining the configurational and non-configurational classes inherent in lacking an independent basis for the distinction.

Using discontinuous constituents as a sample case for exposition, we have argued that in principle case/agreement is a more promising theory to pursue than non-configurationality.

Returning now to the main stream of the argument. We are considering whether other bases might exist which could derive the classification of the case/agreement distinction or whether another basis might provide a more interesting classification. Another 'superficial characteristics of non-configurationality' might be a candidate for inducing a classification of languages with respect to configurationality: extensive null anaphora. Consider the sentences in (5):

(5)   a. At'ééd ashkii yiyiiłtsá
           girl   boy   3S-3O-saw
           'The girl saw the boy' (Navajo)

        b. ngajulu-rlu ka-   rna-   ngku nyuntu-Ø nya-nyi
           I-   ERG PRES-1sgNOM-2sgACC you-ABS see-NPST
           'I see you' (Warlpiri)

        c. John likes that picture.

        d. John-ga   sushi-o   tabeta
           John-NOM sushsi-ACC ate
           'John ate sushi'   (Japanese)

(5')   a. yiyiiłtsá
           3S-3O-saw
           'He saw her' or (3rd saw 3rd)

        b. ka-   rna-   ngku   nya-nyi
           PRES-1sgNOM-2sgACC see-NPST
           'I see you' (Warlpiri)

        c. *likes.
           ('3rd likes 3rd')

        d. *tabeta
           ate   ('3rd ate 3rd')   (Japanese)

In (5') we see that it is possible to drop both the direct object and the subject of the sentences in (5) in Navaho and Warlpiri but not in Japanese and English[5]. This would induce the class Navaho and Warlpiri on one hand with English and Japanese on the other. A non-configurationality view might define non-configurationality over null

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anaphora for subject and direct object. A more appealing formulation is possible however, in terms of the case/agreement distinction. Navajo and Warlpiri are members of a well defined class of languages with respect to case/agreement since they are the [+Agreement] set while English and Japanese are the [-Agreement] set. Thus, case/agreement equates free null anaphora with rich agreement, precisely the characterization generally given. It is not surprising from the point of view of case/agreement that languages with slightly rich agreement (such as Italian) will show null anaphora in syntactic positions which also trigger agreement:

(6)   a. [un ragazzo]$_i$ arriv- a$_i$
         a boy   arrive-3S
         'A boy arrives'

      b. e_i arriv-a$_i$ [un ragazzo]$_i$
            arrive-3S   a   boy
         'There arrives a boy'

      c. e_i parl- a$_i$
            speak-3S
         'He is speaking'

Italian is not in the [+Agreement] class of languages that we have induced (reasons will be given shortly for this) but we see that rich agreement in Italian for subjects does exactly what case/agreement suggests rich agreement does for subjects and objects in Navajo and Warlpiri. Thus, a hypothetical four-way distinction on the basis of

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[±extensive null anaphora] is derivable from case/agreement; the reverse is not true.

Another candidate for defining configurationality, a "diagnostic of non-configurationality", is free or scrambling type word order. Consider the sentences in (6) again. (In 5", e-nodes simply indicate location of the "moved element" in the sentences in 5, no claim about their formal status is implied.)

(5) a. At'ééd ashkii yiyiłtsá
         girl   boy   3S-3O-saw
         The girl saw the boy' (Navajo)

     b. ka-   ma-   ngku   nyuntu-Ø nya-nyi
        PRES-1sgNOM-2sgACC   you-ABS see-NPST
        'I see you' (Warlpiri)

     c. John likes that picture.

     d. John-ga   sushi-o   tabeta
        John-NOM sushsi-ACC ate
        'John ate sushi'   (Japanese)

(5") a. ??ashkii_i at'ééd e_i yiyiłtsá
         ('The girl saw the boy')

     b. nya-nyi_i ka- ma-   ngku   nyuntu-Ø e_i
        see-NPST PRES-1sgNOM-2sgACC you-ABS
        'I see you' (Warlpiri)

     c. * e_i likes John_i that picture.

     d. sushi-o_i John-ga e_i tabeta
        'John ate sushi'

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In (5") we see a characterization of free and fixed word order in our sample set. Warlpiri and Japanese seem to permit very free word order whereas Navajo and English have more fixed word order. Again, one could imagine a configurationality parameter [±free word order] distinguishing Warlpiri and Japanese from English and Navajo, but it is possible in case/agreement to describe this difference as [+Case, ±Agreement] Warlpiri and Japanese as opposed to [-Case, ±Agreement] Navajo and English. Although free word order is very much a matter of interpretation and not a well-defined concept, insofar as there is an intuitive notion, it is often correlated with the presence or absence of rich morphological case (eg. Sapir, 1921, etc). The case/agreement analysis expresses this correlation without further stipulation, it simply falls out of the distinction in the properly trivial way.

Having just shown how case/agreement gets the distinctions induced by two possible configurationality parameters [±fixed word order] and [±extensive null anaphora], we can step back and consider the predictions made by case/agreement for these properties. Taking fixed word order first, the prediction (insofar as this concept can be tested) is that [+Case] languages will not have relatively fixed word order (but see Icelandic, for example, which we will discuss) and that languages with free(r) word order will be [+Case]. By contrast, fixed word order will be characteristic of [-Case] languages, such as Chinese. The same reasoning extends to [±extensive null anaphora] and its relation to agreement. We have seen a potential counterexample in languages like Italian where rich subject agreement seems to provide

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the option of extensive null anaphora (at least for subjects) but this is not a troubling example since Italian shows that agreement is a good candidate for explicating null anaphora. There could be a problem is defining [±Agreement] in such a way that Italian is predicted to have the correct set of properties with respect to the full range of data of "configurational variance" (such as lack of NP movement, lack of pleonastics, etc.) but in principle these problems are manageable. Another possible problem comes from languages like Japanese which do show a good deal of null anaphora without having typical agreement (are, at least -Agreement). One might consider arguing that with respect to agreement, Japanese is much like Italian except that Japanese uses agreement of honorifics to license null anaphora (see Kuno, 1975, for example)—we are not optimistic about this, however.

We do not intend to be dismissive of these types of problematic cases, in fact it is a strength of the case/agreement view that with only minimal formalization a number of apparent problems immediately arise. This is characteristic of a strong theory. It is unrealistic to expect any (strong) theory of a complex range of facts (as complicated as null anaphora, free word order, etc.) to spring into being fully articulated without a number of potential counterexamples. Such a theory would presumably seem obvious.[6] The question then is which type of theory is more likely to be profitably pursued, a case/agreement type analysis with a very large number of predictions,

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[6] One surprising criticism of the case/agreement analysis in Alexander (1986) received was that if it were correct, it would have been formulated already. Actually this suggests the intuitive plausibility and simplicity of the analysis.

some of which, superficially at least, appear to be false, or a classical non-configurational view which is, in principle, unfalsifiable and, therefore, without superficial counterexamples. Of course, is is best to pursue the more interesting theory which in this instance is the case/agreement view.

A final meta-theoretical question concerns at which point there must be a formalization of case/agreement. Naturally in order to "buy into" case/agreement one would like to see a formalization which induces an appropriate distinction, with the troubling cases like Italian placed into categories with clear predictions. It is possible to be overzealous on this point. The underlying logic of case/agreement is that a non-bivalent parameter is needed for configurationality. We take this to be demonstrated to some degree. Preliminary exploration of four test cases, the four tokens generally manipulated by theories of configurationality, suggest that Case and Agreement might be the relevant differences which induce a correct distinction. It is not obvious that the four way distinction of even the test cases is correct or that Case and/or Agreement is/are appropriate to induce this distinction. This is an empirical question and the particular formulation of a non-bivalent parameter which we are exploring uses Case and Agreement. One may argue that these notions need to be made more formal so that clearer predictions can be made for the troubling cases. Another approach, the approach which we feel superior though not the approach we are actually adopting, is to extend case/agreement to less troubling cases and to consider the

analysis in terms of the 200 or 2000 languages which do not present superficial counterexamples. In this way, one could be more exact in describing the model cases from which the exceptions might then be made to follow. In this way, when we come to the superficial counterexamples, it is with a fuller understanding of what they are counterexamples *to* and of the ways in which they differ from the model cases. It seems to us that this is a superior method but it requires a suspension of disbelief while the theory is being extended to these additional cases. It is the question of this suspension of disbelief that the arguments for the logical superiority of case/agreement over classical non-configurationality speak to. For the most part in this work, we will extend case/agreement, leaving open some questions of the formalization and seeking evidence for the appropriate formalization of the claims we will make within the basic theory, but we will also make suggestions (perhaps quite premature) on the proper treatment of whatever troublesome cases may arise.

We have made some comments to motivate the case/agreement approach over the classical views of non-configurationality, or, against a bivalent configurationality parameter. We have shown that sub-parameters of configurationality such as [±extensive null anaphora] and [±free word order] can be derived from case/agreement. Because most possible classifications of non-configurationality are contained within case/agreement (i.e. several partitions of the relevant four language types into subgroups are expressible by case/agreement, excluding marked pairs such as English-Warlpiri and Japanese-Navajo which

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would need to be described with a disjunction), particular syntactic analyses of non-configurational languages are replicateable within case/agreement.

For example, consider Jelinek's analysis of adargument languages. Recall that Jelinek assumed that languages with rich agreement assigned thematic roles to nominal agreement clitics rather than to NPs. Instead of using *non-configurational* or *adargument* language as the term for this group we can classify it as the [+Agreement, ±Case] set. Thus, the term *adargument languages*, or Jelinek's *non-configurational* class, is coextensive with the case/agreement class we might term *Agreement languages*. Argument languages would be thus [-Agreement] or *non-Agreement* languages. We will occasionally use the terms *argument* and *adargument* languages, following Jelinek, but we consider the adargument language class to be the [+Agreement languages] for which we may occasionally use a different term.

Another analysis which naturally fits into case/agreement is the Case Phrase (KP) analysis of Saito (1982), Travis and LaMontaigne (1986), etc. In this analysis, the case marker is the lexical head of a category KP. The head K is a case assigner for an NP which it selects. Traditional data which this analysis accounts for is a paradigm based on the Japanese sentences we have been considering:

(6)   a. John-ga sushi-o tabeta.
       b. John-ga sushi   tabeta.
       c. Sushi-o John-ga tabeta.
       d. *Sushi John-ga tabeta.

The standard analysis of these facts, due to Saito (1982), is that in (6a) the case markers -*ga* and -*o* assign case to the NPs *John* and *sushi*. In (6b), the case marker -*o* does not assign case to the object *sushi* but *sushi* is governed by the verb which is able to assign accusative case. In (6c) the object *sushi* is fronted by may still receive case from -*o*; it cannot receive case from the verb which no longer governs it. In (6d) *sushi* may not receive case from -*o*, which does not appear, nor can it receive case from the verb which does not govern it. It is predicted that (6d) should be ungrammatical and certainly some dialects of Japanese share the judgements above, although not all Japanese dialects have the above intuitions (David Pesetsky, Mamoru Saito:PC). Apparently the above effect is stronger in the American Indian language Choctaw (Muskogean) (Aaron Broadwell: PC):

(7)   a. John-at   Bill-a   habli-tok
          John-NOM Bill-OBL kick-past
          'John kicked Bill'

       b. John-at Bill habli-tok.
       c. Bill-a John-at habli-tok.
       d. *Bill John-at habli-tok.

The KP analysis predicts a freer word order in languages which have K as a lexical head since the NPs need not be adjacent to a verb

or to I. This represents an indirect diminution of the classical GB view that there is no interesting difference between languages with overt case and those with non-overt case. The KP analysis manages to introduce such a difference. This is similar to the claim that rich AGR licenses null anaphora. In classical GB, it was claimed that there were no interesting differences between overt agreement (with AGR) and non-overt or extremely weak agreement (also with AGR). The standard analysis of null anaphora is a departure from that view, again somewhat indirectly. This is conceptually important for the case/agreement analysis since a proponent of classical GB might argue that the overtness of case and agreement in a language is a superficial property which should not be the basis of the configurationality distinction.[7] The KP analysis and the rich agreement analysis of pro-drop both claim that the overtness of case and agreement are not superficial properties and the case/agreement analysis only requires assumptions about the importance of overtness which are independently motivated by the KP analysis and the rich AGR --> null anaphora analysis. Moreover, these theories raise the possibility, explicitly claimed by case/Agreement, that a syntactic analysis may refer crucially to overt morphological properties such as overt agreement and case.

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[7] We have heard this criticism and we do not accept it, partially, for the reason given here. Another reason to reject the claim that Case/Agreement refers to "superficial properties" is suggested by Ken Wexler (PC) who points out that these "superficial properties" are very accessible for the child learning the language, who can deduce complicated properties (such as that referring to pleonastics, NP-movement, etc.) from very basic properties such as agreement or case.

3.2 Licensing Theory and Multiple Licensers

Adopting the KP analysis into case/Agreement also provides an interesting analysis of a curious type of [+Case] language represented by Icelandic: SVO case languages which do not have the free word order of their SOV counterparts.[8] As noted, for example, by Greenberg (1966) SOV languages almost always have case while SVO languages rarely do. As Richard Kayne (PC) has pointed out, word order appears to be freer in SOV case languages than in SVO case languages and this may be derivable from the KP analysis. In both SOV and SVO languages, case is (almost) always suffixal, hence appears to the right of the NP it marks.[9] Consequently, in SOV languages, a suffixal K is in (canonical) head position and K would assign case to the left, the supposed direction of case assignment in SOV languages. In SVO, however, a suffixal K would not be in canonical head position and if K assigned case to the left, case assignment would not be in the direction of (canonical) government, rightward in SVO.

Taking a step toward formalization of case/agreement, assume that every NP must be identified or licensed and that there are three ways to license the category NP: call them case, agreement or, as a default, government:[10]

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[8] The following discussion of Icelandic is almost wholly due to the suggestion of Richard Kayne, though he does not necessarily accept the analysis. I also benefitted from discussions with Brian Sietsema.

[9] It is not obvious why this might be and the predictions for languages with prefixal case markers (if this is possible) will be clear from the discussion to follow.

[10] We will want to explore whether these terms have their usual Principles and Parameters referents under this formulation of Case/Agreement. The null hypothesis is that they do not.

(8)   (a.)   Case Assignment

```
                    IP
                  /    \
                KP      I'
               /  \    /  \
             NP    K  I    VP
             ^____|       /   \
                        KP      V
                       /  \
                     NP    K
                     ^____|
```
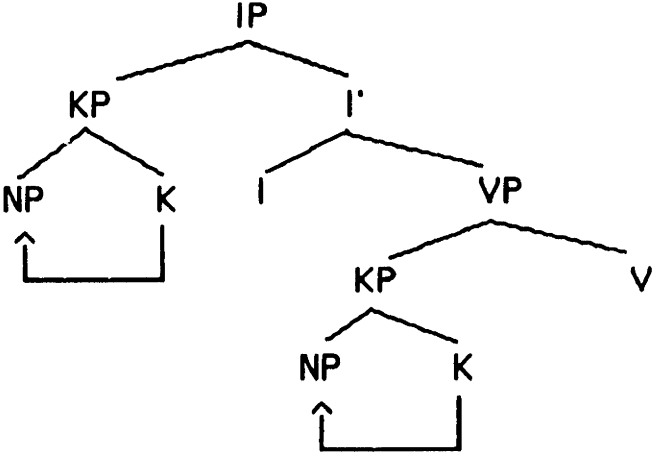
(b)   Agreement (following Jelinek:1984)

```
                    VP
                  /    |
                NP     VP
                |     /  |
              SUBJ  NP    VP
                    |    /  \
                   OBJ obj    V
                       ^     /  \
                         subj    V
                          ^_____|
                       |_____|
```

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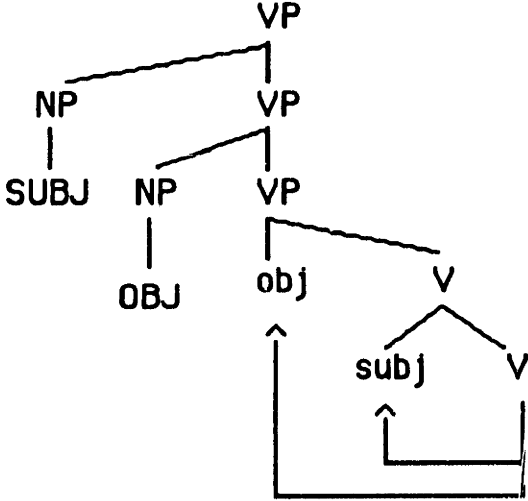
(c)   Government by (Adjacency to) an X^0

```
                    IP
                 ___/\___
                /        \
          Spec, IP        I'
                       ___/\___
                      /        \
                     I          VP
                             ___/\___
                            /        \
                           NP         V'
                           |          |
                          OBJ         V
                           ^          |
                           |_____|
```
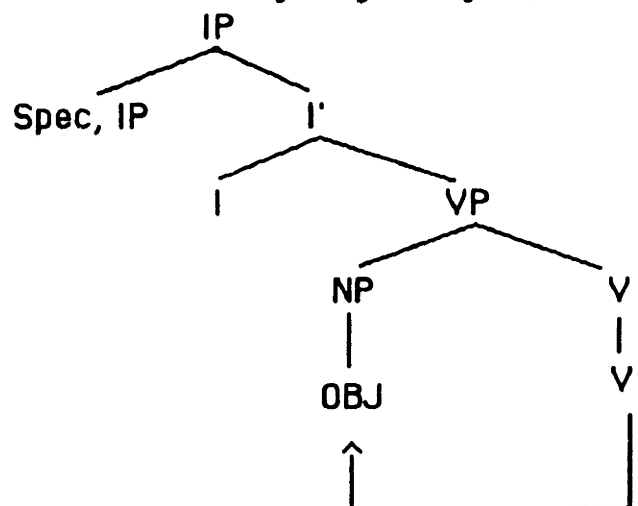
These methods of licensing could be viewed as just sub-species of government since all seem to require licensing by an local X^0 head (perhaps the agreement case might not work in this fashion but we may set this detail aside for now). We can associate the first licensing method with [+Case], the second with [+Agreement] and the third with [-Case, -Agreement]. All languages might have the option of using government (adjacency) as a default (in this work we will see evidence that this is accurate). The case/agreement distinction is thus a theory of NP licensing relations à la Abney (1984) and Chomsky (1985). Seen in this way, we may return to the Icelandic type cases. The basic structure of Icelandic would be as follows:

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(9)

```
                        IP
              _____/  _____
            KP                    I'
          _/  \_          _____/  _____
        NP      K        I                  VP
        ⌃                              _____/  \_____
        L_/__|                        V              KP
                                                   _/  \_
                                                 NP      K
                                                 ⌃
                                                 L_/__|
```
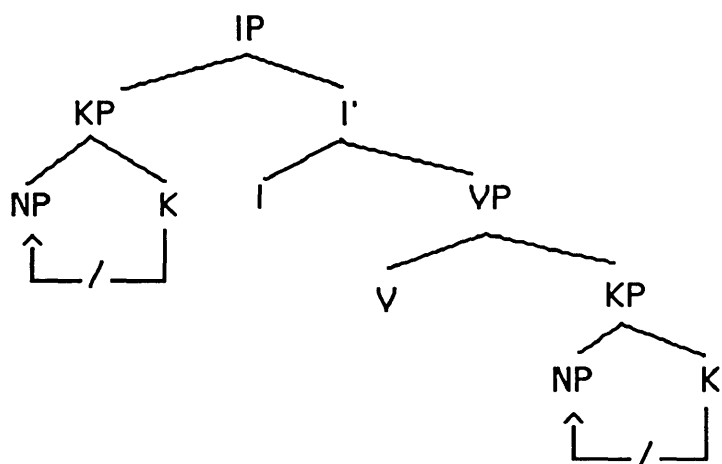
If we assume that K is unable to properly license NP because K is not in a (canonical) government position, it must be the case that some other relation, government (adjacency), must license NP, just as in English. Thus, though it has case and, as such, qualifies as a [+Case] language with respect to the case/agreement analysis, independent properties of the language (headedness) prevent Icelandic from showing the freer word order of its SOV counterparts. This is because K is not a licenser in Icelandic as it is in Japanese—being on the *wrong* side. One may wonder why K exists in Icelandic at all since it appears not to have a significant function in the present analysis. The question can be turned on its head. The KP analysis, combined with the licensing theory of case/agreement, assigns a very low order of probability to languages of the Icelandic type (SVO case languages) and correctly predicts that such languages would be very rare, as they are.

Another distinguishing factor of SVO and SOV case languages pointed out by Kayne (P.C.) is that SVO case languages generally have case only on the right boundary of the NP while SOV languages generally have a case spreading effect with case on individual words within the NP (recall a conceptually similar effect in Warlpiri). Might the KP analysis with the case/agreement licensing theory explicate this difference? One might say that this is a result of K being dormant as a licenser in SVO case languages. The idea being that K in SOV is successful and can license NPs *in toto* (i.e. all of their component parts). In SVO, K is still a lexical head selecting an NP. Licensing (through government) of that NP is still accomplished by V. We thus have an internal structure as follows:

(10)

```
                    VP
              _____/\
             V          KP
             |         /\
             |       NP      K
             |      /\
             |    Art    N'
             |     |    /\
             |     |  Adj    N'
             |     |   |     |
             |     |   |     N
             |     |   |     |
          bought  the red  book
```
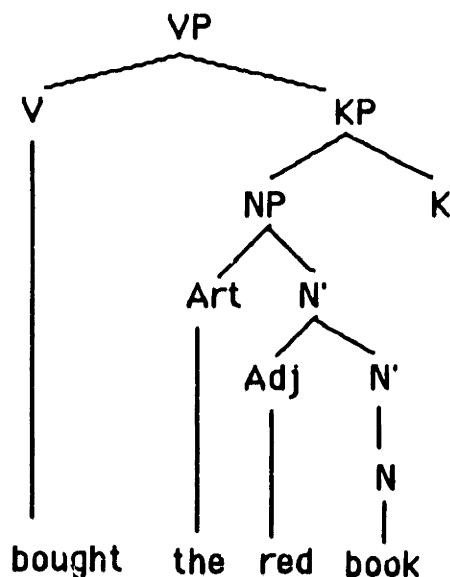
The NP inside KP is governed by the verb and government percolates down to the head. Formally K is still a lexical head and can

invoke the minimality condition on government (see Chomsky, 1985a). If this view is correct, Icelandic must avoid a minimality condition with every NP and the method used is for the K is "contract" from its position as the governor of NP and move inside NP, essentially getting out of the way of the verb's government of NP. Though highly informal, the above proposal suggests that the case/agreement's correlation of [+Case] with free word order does not necessarily face a genuine counterexample in languages of the Icelandic type. Further, the KP analysis combined with the case/agreement licensing theory correctly predicts Greenberg's claim that rich case is consistent with SOV but generally inconsistent with SVO.

Note that this analysis of Icelandic suggests that case/Agreement is not a parameter. If C/A were a parameter, we should expect the case marker (K0) to 'turn out' the free word order property, which does not seem to occur. Rather, it seems that a K^0 in Icelandic is just a feature which a language suggests which has only an indirect relation to the property of free word order: in the Icelandic case, the K^0 simply has no relation to that property due to other aspects of the grammar.

This analysis of word order and case spreading in Icelandic also suggests a similar analysis of discontinuous constituents in [+Case, +Agreement] languages such as Warlpiri.[11] The basic facts (Bresnan and Simpson:1983; Hale, 1981) are that elements of an NP (like the

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[11] I am grateful to Bill Croft for pointing out to me the importance of these facts though my analysis differs from his.

head noun and the adjective below in 54) may be split but if they are split, case must appear on both parts. (Hale, 1981; 1, 17):

(11) <u>kurdu- jarra- rlu</u> ka-   pala maliki wajilipi- nyi
      child- DUAL- ERG PRES- DUAL dog   chase-   NONPAST

      <u>wita- jarra- rlu</u>
      small- DUAL- ERG

'The two small children are chasing the dog.'

(11') maliki ka-   pala wajilipi- nyi   <u>kurdu wita- jarra- rlul</u>
       dog   PRES- DUAL chase-   NONPAST child small- DUAL- ERG
       'The two small children are chasing the dog.'

If they appear together the case suffix may be dropped. This is consistent with the analysis of Icelandic given above. Since Warlpiri is [+Agreement], argument NPs can be licensed by agreement clitics and hence do not in principle need case to license them. If case is going to license the NP, it must avoid the minimality violation of Icelandic (here presumably invoked by the licensing agreement clitic N^0) and so contracts into NP, attaching to every element in the NP. Each individual piece of the NP is now licensed, just as in Icelandic. In Icelandic, however, the NP (KP) cannot be freely permuted since it must be governed by the verb. In Warlpiri, however, the head NP can be licensed at a relatively long distance by agreement and the individual parts are free to "scramble" since they are licensed by case.

We may see a similar phenomena in Hixkaryana, though it is [+Agreement, -Case]. In Hixkaryana, as we shall argue in Chapter 4, it is (approximately) the case that direct objects not licensed by

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agreement must immediately precede the verb, suggesting that the direct object is governed by the verb when there is no direct object agreement. Thus there are two candidates for licensing: agreement or government by the verb. It is possible to have a discontinuous direct object, as in (12c) (Derbyshire:1985, p.77):

(12) a. hakrya koso heno   komo w-   oxtxowni ha
       peccary deer GROUP COLL I+IIIS-shot   INTSFR
       'They shot peccary and some deer.'

    b. w-   oxtxowni ha,   hakrya koso heno   komo
       I+IIIS- shot   INTSFR   peccary deer GROUP COLL
       'They shot peccary and some deer.'

    c. hakrya w-   oxtxowni ha,   koso heno   komo
       peccary I+IIIS- shot   INTSFR deer GROUP COLL
       'They shot peccary and some deer.'

In (12a) the entire (paratactic) direct object precedes the verb (parataxis is the chief method of conjunction) and the direct object is licensed by the verb. In (12b) the entire sequence is postposed and may or may not be dislocated from the main intonational contour. If the subject were third person, the direct object would have to be dislocated, for reasons discussed in §5.1. In (12c) the head of the direct object remains in position while the rest of the sequence is postposed and dislocated. Presumably the postposed parts of the direct object can be licensed by the head of the direct object which is is itself licensed by percolation of government from the verb. This appears to be the only discontinuous constituent in Hixkaryana and its

appearance is severely limited. For example, a modifier like a genitive object cannot be so postposed:

(13) a. Waraka kanawa-rí   w-oxtxowní ha
        Waraka canoe-POSSD I+III-shot INTSFR
        They shot Waraka's canoe.'

     b. *kanawarí   w-oxtxowní ha,   Waraka
        canoe-POSSD I+III-shot   INSFR Waraka
        ('They shot Waraka's canoe')

Thus discontinuous constituents and fixed word order in Icelandic find a parallel construction in Hixkaryana. Each type shows multiple licensing of elements inside an NP. In Icelandic and Warlpiri, case licenses NPs but these languages may permit (or require) another method of licensing as well. In Warlpiri agreement can license nominals also. Warlpiri agreement licenses the nominals which are already licensed by case. As with agreement languages generally, the element licensed by agreement need not be adjacent to the agreement morpheme and hence, combined with the licensing by case, two methods of licensing combine to produce a scrambling type word order in Warlpiri. A similar effect occurs in Icelandic except that since the second licensing relation in Icelandic is government (adjacency), the licensed nominal must be adjacent to the verb which licenses it. Thus fixed word order. A similar case is then found in Hixkaryana where government requires that the nominal remain adjacent to the verb but loosely bound arguments of the head nominal

may be postposed to be licensed by agreement. Hence, Hixkaryana shows a reflex of discontinuous constituents.

We thus have discussed three very different types of syntactic phenomena in three very different types of languages, Warlpiri, Icelandic and Hixkaryana. The analyses are quite informal but they provide support for the claim that discontinuous constituents will generally be a phenomena of [+Case, +Agreement] languages. Since we are really discussing licensing of nominals with licensing relations drawn from a universal inventory, just like null anaphora in Italian, languages will be able to show *reduced* versions of Warlpiri case-spread discontinuous constituents. This is accomplished by using the same strategy that Warlpiri uses: multiple licensing relations. If languages were permitted to *select* the own licensing relations (highly suspect, of course) then English, for example, could extensively use case and Agreement and develop into a Warlpiri type language. What is important to take from Hixkaryana's 'weak discontinuous constituents' and Italian or Japanese 'nearly extensive null anaphora' is that case/agreement is designed to place them in the proper category for configurational variance. It is not an interesting counterexample to argue "case/agreement predicts that [+Agreement] entails null anaphora. Italian shows strong null anaphora. Italian is classed [-Agreement] in the case/agreement analysis. Therefore the case/agreement analysis misclassifies Italian." The reason this is a weak argument is that it is possible to show that Italian and Hixkaryana and Navajo all permit null anaphora for, essentially, the

same reason. Because Italian overlaps with Hixkaryana with one property does not entail that it must be classified like Hixkaryana. Classifying Italian with Hixkaryana would be problematic because Hixkaryana has no NP-movement rules as Italian does, to take one difference. There appears, at present, a factual requirement for separating these two languages. The overlaps between Italian and the [+Agreement languages] does raise the question of how the difference between rich Agreement in the Italian sense and rich Agreement in the Navajo/Warlpiri sense can explain the existence of NP movement in Italian but not in Warlpiri/Navajo. This is certainly an interesting question but it is one which in diminished form has already been answered in Hale (1983) and Jelinek (1984), and which we will consider in the next section. The import of the "overlapping cases" at this point is to constrain the options presented to the case/agreement analysis. As long as the "overlaps" can be explained naturally by the theory, the counterexamples do not have critical force. Further it is natural to expect that such overlapping cases will exist since case/agreement assumes three licensing relations: case, Agreement, and government. Languages may differ to what extent they use these primitive universals—it may be that some languages use all three for some purposes Arguably English is one of these languages and perhaps Warlpiri's V-final infinitivals provides evidence that it too uses government (adjacency) while superficial consideration shows that it uses case and agreement. case/agreement is meant to be a theory of how these primitive licensing relations influence the types of syntactic

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structures available in a given language. Naturally it is more helpful to concentrate on the non-overlapping cases initially but this does not preclude preliminary speculation that cases such as discontinuous constituents in Icelandic, Warlpiri and Hixkaryana might derive from a confluence of licensing methods.

3.3 Agreement Languages: A Sub-Class

In the section above, we outlined an alternative conception of configurationality. This analysis has consequences for all languages and it is clearly beyond the scope of a single work to explore all (or many) of these consequences. This is not unique to case/Agreement; Hale (1983), Jelinek (1984), Speas (1986), Saxon (1985) and others have proposed configurationality distinctions with far reaching consequences that were only explored for a limited number of languages: generally one or two. A particular way to make progress is to forestall broad cross-linguistic work in favor of highly detailed consideration of a small class of languages until such a time that the theory's predictions and exact statement has been worked out in some detail. With the case/agreement proposal, as discussed above, there are different levels at which predictions are made. For example, case/agreement proposes a class of languages [-Case, +Agreement] having agreement for subject and direct object and little or no overt case marking. This class of languages, call them the Agreement languages, are predicted to have several properties as formulated above: lack of pleonastics, lack of NP movement rules, relatively fixed

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word order, etc. Whether these predictions are supported by broad consideration of the data, there is a more global prediction made by case/agreement: languages of the [+Agreement, -Case] class should behave as a natural class, having properties distinct from other classes (e.g. [+Agreement, +Case]). It is this *more global* prediction which we will consider in this section, arguing that a distinctive success of case/agreement is in its ability to express claims about languages which are [+Agreement, -Case]. That is to say, we will argue that there are properties which are unique to the class [+Agreement, -Case] and, hence, that any theory of language typology must encode the case/agreement distinction to be able to describe these facts. This is separate from the stronger claim that case/agreement is appropriate to explain these particular properties, though we make that claim as well.

We will chiefly focus our discussion on the class of languages with a 'basic word order' in which the direct object precedes the subject (VOS, OVS, and OSV).[12] Most linguists are acquainted with object before subject languages through Greenberg Universal 1 which notes that they are exceedingly rare:

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[12] There are obvious problems with the term 'basic word order' and many researchers have noted problems with the notion (for an interesting discussion of this, see Hale, n.d.,) Some languages seem to have what has been termed 'pragmatic word order', which seems separate from syntactic considerations. Warlpiri might be an example of this. We will only suggest here that Case/Agreement might explicate the question 'can all languages have 'pragmatic word order'''. It is our intuition that a language like English cannot have 'pragmatic word order' because of the nature of its licensing relations, whereas a language like Japanese, with 'non-local licensing', could, in principle have 'pragmatic word order'. Case/Agreement might be used to argue that only certain language types, licensing types, are consistent with this type of word order.

(14) Greenberg Universal 1 (Greenberg, 1963; 77)
In declarative sentences with nominal subject and
object, the dominant order is almost always one in
which the subject precedes the object.

Though Greenberg does not actually exclude object before
subject languages, the fact that he assumes they are non-existence
leads him to frame his universals with unintended reference to them.
For example, consider Universal 41:

(15) Greenberg Universal 41 (Greenberg, 1963; 96)
If in a language the verb follows both the nominal
subject and the nominal object as the dominant
order, the language almost always has a case system.

This universal is consistent with SOV languages and OSV
languages, but, as we will see, OSV languages lack case systems. Of
course, 'almost always' is weak enough to exclude the few OSV
languages, but Greenberg universals are, by default, excluding object
before subject languages. Hence, if such languages exist, universal
properties of them have yet to be discovered.

For the most part, object before subject languages have been
relegated to the pile of exceptions to generalizations that seem
basically correct, in this case the generalization that possible base
order are VSO, SOV, and SVO and not OSV, OVS, and VOS. This view
is taken by Edwin Williams (1981) who argues that it is a 'glaring
failure' of a theory of acquisition that it does not have as a consequence
that object before subject languages do not exist. Using
case/agreement analysis, we will argue that object before subject

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languages have interesting or universal properties and that it is possible to explain their existence (and suggest their rarity) with appeal only to independently motivated aspects of syntactic theory.

First, we will summarize the literature on object before subject languages. Greenberg (1963) noted three possible examples: Siuslaw, Coos and Coeur d'Alene (all of which are discussed in the Handbook of American Indian Languages and, if their descriptions there are accurate, are probably VOS with Coeur d'Alene (Reichard, 1934) being described as strongly VOS. Kennan's work on VOS Malagasy has been widely distributed; for example, it is discussed in Travis (1984). Beginning with work by Desmond Derbyshire in 1961 there has been some material on the maximally 20 object-initial languages in Amazonia, with the major focus being on Hixkaryana of which Derbyshire has written two generally available grammars. Derbyshire and Pullum have also published two volumes of the Handbook of Amazonian Languages with the first volume (1986) discussing some object-initial languages. Apart from this, work is scarce on the properties of object before subject languages.

A striking observation about object-initial languages (OSV, OVS) due to Pullum (1982) is that they appear to be restricted to Amazonia. VOS languages, on the other hand, are much more widely distributed. Derbyshire and Pullum list three possible VOS languages in Amazonia, with others in Mexico, the United States and the Western Pacific, etc.

Overall, a reasonable estimate of the the number of object before subject languages is about 60, with approximately 45 VOS, 9 OVS and

6 OSV (here were are being slightly more conservative than Derbyshire and Pullum); one hundred is a reasonable upward bound of the number of object before subject languages.

Essentially there are two current views of object before subject languages. Generalizing somewhat, linguists who describes these languages have not presented detailed theoretical analyses which might parallel work on null anaphora in Italian, for example. Theoretical researchers, on the other hand, who explore questions such as null anaphora, have not considered data from object before subject languages, or for the most part, members of the class of "non-configurational" languages. Naturally this is an outgrowth of the tendency to study languages which are well described and, unfortunately, not often very exotic.

The common view of object before subject languages, within transformational generative grammar, is that they arise from a late (or surface) relocation of the subject, or alternately, a partial or complete relocation of the predicate. This view has not been articulated in the literature; in an unpublished paper, Cline (c. 1987) argues for a movement analysis of Hixkaryana, noting "since it is a theoretical impossibility to have a D-Structure which is the mirror-image of English, OVS order must be derived by movement rules" and arguing for an SOV underlying order. Expression of this movement view is rare, but it is not misleading to call it the dominant view. Since theoretical work on object before subject languages is almost non-

existent, a *bias* for a movement analysis, which has not been discussed in the literature, still seems to be the dominant view.

Part of the support for an analysis which does not assume D-Structure object before subject languages (and considers them *surfacy phenomena*) is Pullum's observation about the geographical limits of object before subject languages: he claims that they are confined to Amazonia. This seems to mark object before subject languages, particularly object-initial languages, as suspect. Typologically, however, this is not a compelling argument. Australia seems to have more than its share of canonically non-configurational languages, Warlpiri type languages, but no one therefore doubts the phenomena of canonical non-configurationality. Perhaps this suggests a parallel bias that word order, unlike configurationality, is itself surfacy.

A surface relocation of subject analysis of object before subject languages, while it might seem nebulous, actually makes two types of very strong predictions which are not obviously supported by any data.

The first prediction is that object before subject languages are, beneath their misleading surfaces, just like their well-behaved and well-studied subject before object counterparts. This predicts that if, for example, OVS languages are really SOV languages, save for a surface rule, (as Cline, c. 1987 suggests) they ought to behave like SOV languages. For example, they ought to have case systems as predicted by Greenberg Universal 41 discussed above. Hixkaryana lacks overt case, certainly for subjects and direct objects, and other OSV languages seem not to have case systems comparable to those of

classic SOV case languages. Assuming that OVS languages are underlying SOV predicts that both classes of languages should form one class with respect to generalizations such as Greenberg Universal 41. This makes the wrong predictions. The only way to avoid the falsification of this prediction is to claim that the surface relocation of the subject affects case, but then grammatical case becomes a *surfacy* phenomenon: not inconsistent with classical Government and Binding theory but inconsistent with the Travis and LaMontaigne, Saito KP-analysis discussed above.

The second prediction made by a surface relocation view is two part: (i.) if there are only surface object before subject languages, the class of object before subject languages itself should not have any deep or non-surfacy properties which are not themselves derivable from the fact that these languages are underlying subject before object; and (ii.) the particular subcases of object before subject languages should also not have any deep properties *qua* OVS, OSV or VOS, again except insofar as these properties derive from the languages being underlying subject before object languages.

To argue against what we have been calling 'the dominant view' only requires the existence of a natural class *object before subject language*, or a class OVS, for example, separable from the class SOV. We will argue that object before subject languages do form natural classes separate from subject before object languages and, further, will show that the case/agreement analysis is the only framework appropriate for stating the necessary generalizations.

The first claim we will make was first stated in Alexander (1986; p. 25):

(16) Generalization 1
If a language has a dominant word order with the object preceding the subject, it has verbal agreement for subject and object.

This is a striking generalization. We have a familiar group of languages, the object before subject group, once thought not to exist and generally considered to have no deep properties and yet, with the exception of VOS Malagasy (Keenan:1984, etc.), these languages fall into a precise morphological type with respect to agreement. These languages always have direct object agreement. Well-studied subject before object languages typically lack object agreement—hence, the view that object before subject languages are underlyingly subject before object languages cannot explain this fact and it is not obvious that such a theory could even state it.

Parallel to Generalization 1, is another surprising *morphological* fact about the class of object before subject languages, not as well-studied as Generalization 1 but, given the state of the literature, a fairly good candidate for a solid statistical generalization:

(17) Generalization 2
If a language has a dominant word order with the object preceding the subject, it does not have a case system.

As suggested, we would like to have more available data on object before subject languages, but Generalization 2 seems sound given

current knowledge, and with the caveat that case system means case marking of some intuitive richness, approaching that of, for example, Japanese. If we put together these two generalizations (1-2), we derive the claim that object before subject languages have direct object agreement and lack overt case. In most theories of syntax, or theoretical typology, it is difficult to state this generalization in an interesting way. In the case agreement analysis, we can express the claim as that below:

(18) Thesis 1
      If a language has a dominant word order in which
      the direct object precedes the subject, that language
      is a [+Agreement, -Case] language.

This move has some significance. By forming a natural class of the object before subject languages, we have undermined the view that such languages are formed by surface relocation of subject. By stating this class in terms of case/agreement we have shown that the vocabulary of that approach to non-configurationality and language typology can express a generalization not easily expressed in other approaches. Finally, recalling the discussion of how Hale's diagnostics of non-configurationality can be made to follow from case/agreement, we have a number of predictions about object before subject languages. They are:

(19) Predicted Properties of Object before Subject Languages
(by virtue of their being [+Agreement, -Case])
a. They have relatively fixed word order.
b. They lack pleonastics.
c. They lack NP movement rules.
d. They show free or frequent null anaphora.
e. They are not likely to have discontinuous constituents.

The predictions made for object before subject languages are perfectly explicit. We would know a counterexample through only cursory examination of the data of an object before subject language. A theory which, in principle, is so easily falsifiable is precisely the type of theory of language typology worthy of pursing. Whether case/agreement makes the correct predictions across the full (and extensive) range of data or not, this seems to be the type of theory of language typology most likely to shed light on cross-linguistic variance.

We may now turn to the question: 'Are the predicted properties of object before subject languages' actually found? The question is not easily answered due to our general lack of knowledge of the properties of these languages. We must examine many languages, though not necessarily in great detail. To take one prediction, free null anaphora, we can see from a superficial examination that this predictions seems correct. In Hixkaryana (OVS), null anaphora is possible. So too for Coeur d'Alene (VOS), Siuslaw (VOS), Coos (VOS), Makuchi (OSV) and so forth. We could go through the same process for the claim of a lack of pleonastics, and a lack of NP movement transformations (the most complicated prediction to get ready data for).

This is how we would analyze the predictions of the Case/Agreement analysis. We mentioned above that there are levels of predictions in this analysis. One level was as a vocabulary for stating generalizations. It seems that case/agreement can express the typological facts of object before subject languages in a maximally simple manner: i.e. they are [-Case, +Agreement]. Another level we could consider case/agreement is as a theory of non-configurationality, using the predictions made by case/agreement with respect to the properties of configurationality. Here, our proposal is more appealing than previous formulations because the present theory is non-bivalent. Case/Agreement allows us to distinguish Warlpiri [+Case, +Agreement] from Navajo [-Case, +Agreement] and, hence, to distinguish Warlpiri from all object before subject languages. For reasons mentioned in detail in this chapter, case/agreement, unlike classical non-configurationality or the variants in Jelinek (1984), Saxon (1985) and Speas (1986), makes very specific predictions about how languages will behave with respect to the properties of configurationality. We can test these predictions in the obvious way. There is still another level at which case/agreement can provide insights into language typology, in a way not possible for configurationality. A simple question is: "Can the case/agreement distinction explain why all object before subject languages are [-Case, +Agreement]? We believe the answer is 'yes'.

Alexander (1986) proposes another generalization about [+Agreement, -Case] languages which might permit us to predict that object before subject languages are [-Case, +Agreement] languages.

(20) Generalization 3
If a language is [+Agreement, -Case], the dominant word order is always such that if a line of association is drawn from subject enclitic to subject and a line of association is drawn from object enclitic to object, these lines of association do not cross.

The claim is that overt NPs form chains with agreement clitics (following Speas, 1986, and, perhaps, Jelinek, 1984) and that the subject chain may not interrupt the object chain.

We may alternatively construe this as the claim that the Path Containment Condition (Pesetsky, 1982) holds of agreement clitics and overt NPs.

(21) Path Containment Condition (Pesetsky, 1982)
If two paths overlap, one must contain the other.

Consider a language such as Navajo which has SOV word order and the object agreement morpheme preceding the subject agreement morpheme which itself precedes the verb stem. We produce a structure as follows:

(22)
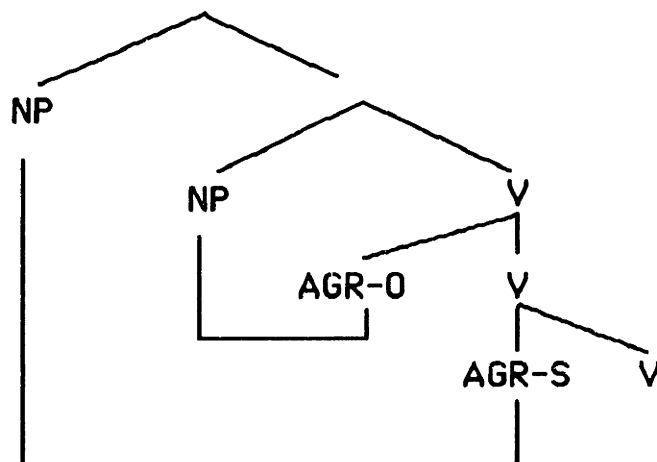
Consistent with Generalization 3 (or Path Containment) and the order of agreement morphemes in Navajo, we know that the inner-most NP must be the direct object and the higher NP must be the subject. Thus, in this case, we have a mirror image effect with SO(V) word order and OS(V) agreement morpheme order. Note that there is another word order consistent with OS(V) agreement morpheme order, as below:

(23)
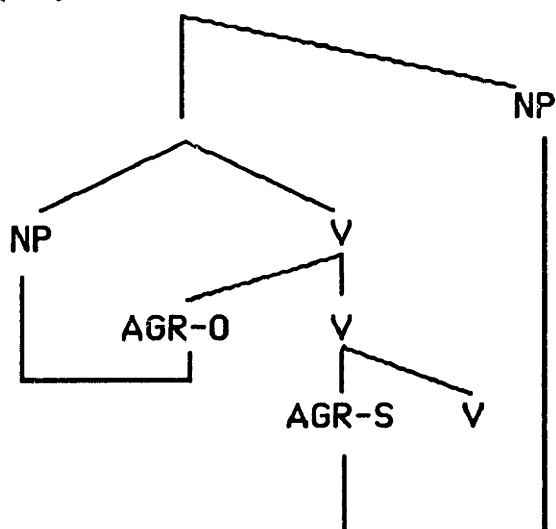
Since linear direction does not matter for the purposes of containment, we can get a subject-final word order. The subject path starts lower in the tree and ends higher in the tree, containing the direct object path. Thus, this order OVS is consistent with Generalization 3. OVS word order is, of course, object before subject word order.

We will assume, following Jelinek (1983) that thematic-roles are assigned to agreement clitics in the [+Agreement, ±Case] languages. Thus, NPs need not be proximate to their theta-assigners. Assume, with Jelinek, that this is true for case marking as well. How do agreement languages get their word order? From the conditions described in Generalization 3. Word order is a function of Path Containment and Path Containment predicts that there will be agreement languages with OSV agreement morpheme order which will have SOV word order and those which have OVS word order. We would then be able to maintain the claim that no there are no object before subject base word orders, where by 'base word order' we mean word order induced by theta-marking and case assignment. This also explains the interesting fact that the [-Case, +Agreement] languages are the only class of languages to have languages from all six possible word orders {OVS, OSV, SOV, SVO, VSO, VOS}. For example, the [+Case, -Agreement] languages have SOV and SVO members, but not OVS or OSV members. By hypothesis, [+Case, +Agreement] languages

do not have *base* word orders, being 'scrambling type' languages, à la Warlpiri.

The above discussion oversimplifies somewhat. In the next two chapters we will see some evidence to suggest that overt NPs must be proximate to governors and that, thus, the Path Containment analysis of word order is not sufficient alone—and Generalization 3 is not without exceptions. We will not explore the many consequences of the Path Containment condition on word order in agreement languages in this chapter, although in Chapter 5, we will discuss Hixkaryana which seems to use Path Containment in the syntax to regulate agreement morphemes and their binders.

Cleaning up some of the unresolved questions, we return briefly to Greenberg Universal 41 stating that SOV languages almost always have case systems. Throughout this work we have discussed SOV case-less Navajo. A very large number (perhaps most) North American Indian languages are SOV and lack case systems (say, again, in the Japanese sense). This is easily described and explained by the discussion so far. First, we can state a corollary to Greenberg Universal 41:

(24) Corollary to Greenberg Universal 41
     Exceptions to Greenberg Universal 41 are
     [-Case, +Agreement]

Again, the vocabulary for this claim is made available by case/agreement and the explanation for the fact at issue comes from the assumptions (i.) that NPs do not receive thematic-roles in

[+Agreement] languages; and (ii.) that an SOV [+Agreement] language is not equivalent to an SOV [-Agreement] language. Thus, C/A makes an interesting prediction about a mystery raised by Greenberg correlations. Greenberg shows that SOV languages behave as a class with respect to being postpositional, to take one example. Given the overwhelming tendency of languages to be SOV and OP, it is somewhat surprising that there is a large class of exceptions to another correlation of Greenberg's concerning SOV; that is, Greenberg claims SOV entails a rich case system whereas Amerind languages are systematic counterexamples. The case/agreement analysis argues that while there is a natural class SOV (which has OP), the difference between SOV [+Case, -Agreement] and SOV [-Case, +Agreement] is genuinely significant as well.

To summarize the discussion of the case/agreement analysis. We have proposed an alternative to the configurationality parameter and its variants. We argue that languages differ in how they license the category NP, whether by case assignment, agreement or adjacency (government), or a combination of these methods. This led to a classification of languages with the features [±Agreement] [±Case]. We argued for some inherent advantages to this view compared to alternative, bivalent configurationality parameters and gave examples of how work would proceed in the exploration of this theory. Case/Agreement is a strong theory, with rich inductive power, and, given the nature of our knowledge of exotic languages, successful in predicting the degree of cross-linguistic variance. Naturally, a great

deal of research must be done to test the extremely large number of predictions made by this analysis. This is not a unique property of case/agreement. It was certainly true of classical non-configurationality, which was often confined to a very small class of languages such as Navajo and Warlpiri. For the remainder of this work, we will focus on what might seem a very narrow problem, languages which seem to have the option of assigning thematic-roles to agreement morphemes or to overt NPs. The existence of such languages superficially threaten to undermine the distinctions we have drawn between Agreement languages and non-Agreement languages. Beyond representing a challenge for a particular view of language typology, however, these cases also provide a broad sampling of data on cross-linguistic variance with a limited range of construction types (prepositional phrases, noun phrases and subject and direct object agreement). Analysis of this data will allow us to sharpen our claims about the nature of NP licensing, the role of agreement and the cross-linguistic variance of theta-role assignment. Further, we show that the most appealing analysis of these middle cases (Hale, 1988 and Hale and Baker, 1990), threatens the non-configurationality analysis of Hale (1983) and Jelinek (1984) from which case/agreement borrows much.

Chapter 4:

Treating the Class of Middle Cases

4.1 A Conflict Between Theories

In the last chapter, we discussed an alternative to the "configurationality parameter". This was based partly on the analysis in Jelinek (1984) and claimed that languages differed in the way thematic-roles were assigned, with one class, the *adargument languages*, assigning θ-roles to N^0 agreement morphemes, and the other, the *argument languages* , assigning θ-roles to NPs. In the next two chapters, we will be discussing "middle cases": languages which seem to have options of assigning θ-roles to either N^0 agreement morphemes or NPs.

Without calling specific attention to it, we have shown several examples of languages with agreement or person/number inflection across categories. Hixkaryana, for example, shows agreement inflection on verbs, nouns and postpositions:

(1) a. rakoronomehe   (Derbyshire, 1985; 191)
         ro-akoronoma-yaha
         10-help-   NONPAST
         'He helps me.'

     b. ramori   (Derbyshire, 1985; 5)
         ro-amo-ri
         1- arm-POSSD
         'my arm'

c. ḷọhẹ̈ṅa   (Derbyshire, 1985; 16)
ṛọ-hana
1-to
'to me'

Since the analysis of non-configurationality in Chapters 2-3 was heavily dependent on agreement, it is natural to attempt to project the argument/adargument distinction onto this agreement inflection across categories. Although researchers in Principles and Parameters typology have not done this, doing so provides a natural analysis of the following data from English, an argument language, and Navajo, an adargument language:

(2)   a.   with a rope   (English, Indo-European)

       b.   tl'óół y-ee   (Navajo, Athapaskan)   (Hale, 1988; 4)
           rope   3-with
           'with a rope'

       c.   y-ee   (ibid.)
           3-with
           'with him/her/it'

       d.   *tl'óół   ee   (Ken Hale: pc)
           rope   with
           ('with a rope')

We can use the argument/adargument language distinction to explain these differences between Navajo and English. In English, the preposition is not inflected and thematic-role assignment is to

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the NP object of the preposition (*the rope*). In Navajo, on the other hand, thematic-role assignment is to the obligatory agreement clitic (*y-*, 3rd person). The NP object of the postposition (*tl'óół*, 'rope') , not necessary for the discharge of the thematic-role, is optional (just as subjects and direct objects are generally optional in adargument languages). Thus, the internal structure of PPs in English and Navajo mirrors the sentence level structure of these languages; no elaboration of the argument/adargument language distinction is necessary to account for PP in English and Navajo.

Consideration of other languages shows, however, that the argument/adargument distinction is not as easily extended to inflection across categories as English and Navajo suggest. There are argument (configurational) languages in which agreement morphemes, rather than NPs, act like arguments, *and* adargument (non-configurational) languages where NPs are argument-like. Irish, discussed in McCloskey and Hale (1985) and Hale (1988), provides an example of the first type of case:

(3)   a. le <u>Máire</u>   (Hale, 1988; 3)
             'with Mary'

        b. léi
           with:3fs
           'with her'

        c. *léi <u>Máire</u>   (Hale, 1988; 3)

Irish, like Navajo, has inflected prepositions (*léi*), but, unlike Navajo, the inflection on the Irish preposition must not cooccur with a full NP (**léi Máire*). The Irish pattern is also found in Dogrib, an Athapaskan relative of Navajo. (Data from Saxon, 1986;54, reprinted in Hale, 1988; 4.)

(4) a. Johnny [ye-t'à pp]   det'o nà- i-   t'a
         Johnny 3-with   duck ADV-PERF-cut
         'Johnny cut up the duck with it.'

    b. Johnny [mbeh t'à pp]   det'o nà- i-   t'a
        Johnny knife with   duck ADV-PERF-cut
        'Johnny cut up the duck with the knife.'

    c. *Johnny [mbeh ye-t'à pp]   det'o nà-   i-   t'a
        Johnny knife 3-with   duck ADV-PERF-cut
        ('Johnny cut up the duck with the knife.')

Dogrib, like Irish, shows complementary distribution between inflection on a lexical head and the NP object selected by that lexical head (*mbeh t'à* or *ye-t'à* but **mbeh ye-t'à*). Simply put: Irish and Dogrib permit either an NP or an agreement morpheme but not both. We have seen three distinct types of languages based on possible adpositional phrase constructions; we shall see others.

(5)

	Types of PP Constructions		
Type	P NP	P-infl (NP)	or P-infl P NP
Lg.	English	Navajo	Irish Dogrib

Summarizing: English requires an overt NP in PP; Navajo requires inflection on P with an optional NP; Dogrib and Irish permit either an overt NP or inflection, both not both—they show complementary distribution between the NP object of the adposition (P-obj) and inflection on the adposition (P-infl). Note that for Jelinek, who assumes a central distinction   between languages which θ-mark NPs and languages which θ-mark agreement clitics, these mixed systems are unexpected.

To account for this complementary distribution, Hale (1988) suggests:

> Let us consider...the behavior of adpositions in Irish and Dogrib.   In both of these languages, an inflected adposition is incompatible with overt expression of the object in canonical object position.   This would follow automatically *if the inflection itself were the argument* [emp. added]. (p. 7)[1]

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[1]   Note that the way that Hale states the hypothesis makes it seems quite similar to Jelinek's approach in that both loosely assume argumental N^0s but Hale's formulation, as we will see, is in conflict with Jelinek's argument/adargument distinction.

Hale's proposal is that inflection on P arises from incorporation of a pronominal onto P by move-α. This incorporated pronoun, like the NP it *substitutes* for, begins at D-structure in P-object position. It is not possible to generate both an overt NP P-object and an *incorporateable pronoun* in this position; hence complementary distribution between the incorporated pronoun and the overt NP. The two possible structures permitted in Irish or Dogrib follow (ignoring the preposition/postposition difference):

(6)

```
        PP                        PP
       /  \                      /  \
      NP    P                   NP    P
      |     |                   |    /  \
      N    t'à                  N   |    P
      |                         |   |    |
    mbeh                        t₁  yeᵢ  t'à
    knife  with                 3-   with
```
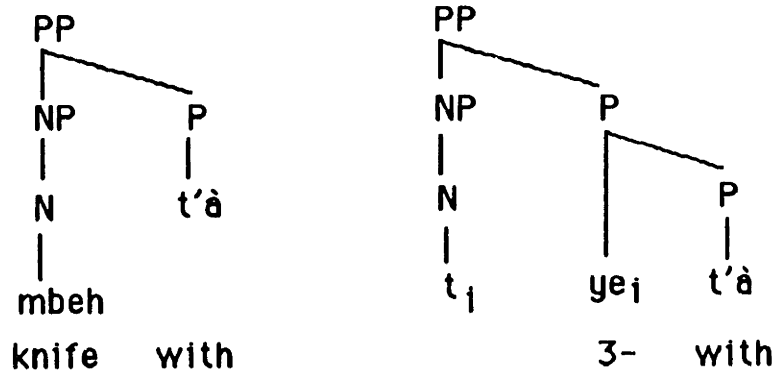
It is impossible to generate a form such as **mbeh ye-t'à* (knife 3-with) in Dogrib since *mbeh* and *ye* would both have to appear in the same position at D-structure. In a language like Navajo, which does permit inflection on P to appear with an overt NP P-object (cf. *tl'óół y-ee*, 'rope 3-with'), incorporation does not occur—leading to a structure without a trace, as follows:

(7)

```
        PP
        ┌──────────┐
        NP         P
        │          ┌──────┐
        N          │      P
        │          │      │
      tl'óó+       y      ee
       rope        3     with
```
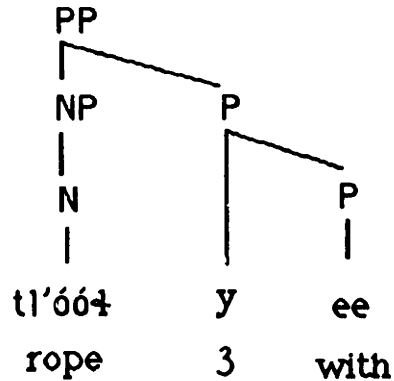
Hale's analysis claims that pronominal inflection morphemes *ye-* in Dogrib and *y-* in Navajo are in different positions at D-structure. The Dogrib inflection appears at D-structure in an NP position and the Navajo inflection appears at D-structure as a subconstituent the P to which it is attached.

An unstated consequence is that Hale's analysis forces Dogrib to be a Jelinek-style configurational language, an argument language. We would have assumed that Dogrib was an adargument language by virtue of its "hyper-rich" agreement but Hale's analysis forces the conclusion that some Dogrib agreement is not agreement after all. Recall that adargument, or non-configurational, languages assign theta-roles to N^0 agreement clitics and argument, or configurational, languages assign them to NPs. If *ye-* in Dogrib begins at D-structure in an NP position, then a thematic-role is assigned to it in that NP

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position. So, thematic roles are assigned to NPs in Dogrib, and thus Dogrib is argumental or configurational, at least in its PPs.[2]

Using the same logic, we can show that Dogrib is configurational at the VP level as well. We find the same cooccurrence possibilities for Dogrib direct objects that we observed for PPs:

(8) a. Cheko [kwik'i nà-   i-   zhì $_{VP}$]   cf. mbeh t'à
         boy   gun   ADV-PERF-break   knife with
         'The kid broke the gun.'

     b. Cheko [t_i nà- yi$_i$- i-   zhì $_{VP}$]   cf. t_i ye$_i$-t'à
         boy   ADV-3O-PERF-break   3- with
         'The kid broke it.'

     c. *Cheko [kwik'i nà- yi- i- zhì $_{VP}$] cf. *mbeh ye-t'à
         boy   gun   ADV-3O-PERF-break
         ('The kid broke the gun.')

We see complementary distribution between the direct object (*kwik'i*) and the direct object agreement marker (*yi-*). Once again, if we assume that the object agreement morpheme appears at D-structure in direct object position, we can account for the complementary distribution between direct object inflection on the verb and an overt direct object NP, but only with the consequence of classifying Dogrib as configurational.

The implications of Hale's analysis are direct for Case/Agreement. Since Jelinek's analysis has been largely adopted by Case/Agreement, we make the arguments here based on Jelinek's

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2 Alternatively we might say that Dogrib is configurational and the evidence for this comes from its PPs. See note 6.

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analysis. Presumably the conflict between theories is also replicateable with the theory proposed by Speas (1986). As discussed in Chapter 2, Saxon's (1985) analysis proposed exactly the non-configurationality distinction induced by Hale's analysis, for related reasons.[3]

Though we have thus far concentrated on Hale's analysis as a general theory of inflection on lexical heads, Hale's real interest is fairly removed from the issues of configurationality we have raised thus far—he is concerned in large part with government of the subject in VSO languages. Further attention to the central issue of Hale's article makes this and the conflict with Jelinek's analysis more clear. In Hale's analysis, incorporation of an agreement element leads to complementary distribution between an NP and that agreement element since both cannot be generated in the same NP position. There are subject/object asymmetries in incorporateablity, however. For example, Dogrib, which we previously saw behaved like Irish with respect to inflection on adpositions, does not show complementary distribution between an overt subject and subject inflection; that is, subjects and subject inflection can cooccur in Dogrib.[4]

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[3] At least, Saxon's partitioning of languages was the same. She assumed that English and Dogrib were configurational while Navajo was non-configurational. Given her argument, she would presumably classify Irish as configurational as well, since it has the same properties she uses to argue for Dogrib configurationality, i.e., complementary distribution between inflection and full NPs.

[4] If note 2 is correct that complementary distribution in Dogrib PPs is evidence that Dogrib is configurational, then we must assume that the cooccurrence of subjects and subject inflection is evidence that Dogrib is non-

(9) a. <u>tlichcc</u> tli t'à mbehchi k'<u>ets</u>'edli   (Saxon, 1985; 66)
         Dogrib dog by sled   ADV:1plr:IMP:slide
         'We Dogribs pull sleds using dogs.'[5]

     b. ?asi <u>ni</u> xàrè nekwìghà k'<u>eneet</u>'a
         Q   2sg self 2sg:hair   ADV:2sg:PERF:cut
         'Did you cut your hair yourself?'

In Irish, however, there is complementary distribution between subject inflection and an overt subject:

(10) a. cuiri-m
          puts-1
          'I put'

      b. cuirean Eoghan
          puts   Owen
          'Owen puts'

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configurational. Either we reject the claim that particular constituents provide evidence for configurationality (and embrace the view that PPs and VPs can be configurational while IP is non-configurational), or we assume that the Dogrib language learner encounters ambiguous evidence, or we assume that since subject agreement is so common, that cooccurrence between subject and subject inflection is special and gives no evidence to the language learner on this point. In principle, evidence from language acquisition might be revealing, comparing Dogrib with an unambiguous language from the point of view of configurationality evidence such as English. This issue has been raised in the analyses of Hungarian by E. Kiss (1981), who argues that some categories in Hungarian are non-configurational and others configurational, and Szabolcsi (1983), who argues that Hungarian NPs are configurational, and Horvath (1986), who supports Szabolsci analysis and claims that from :he point of acquisition languages cannot have both configurational and non-configurational constituents. If, as we suggest here, agreement plays a role in defining a non-configurational language, it is not hard to imagine that morphological clues might be sufficient to allow the children to deduce the non-configurational constituents from the configurational ones and we reject Horvath's suggestion that such a mixed system is excluded in principle because of the acquisition problem.

[5] Note that the third person NP *tlichcc* triggers 1st person subject agreement, thus demonstrating the type of non-agreement which Jelinek used to claim that Warlpiri was an adargumental language.

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c. *cuiri-m mé
   puts-1   1
   ('I put')

We see complementary distribution between Irish subjects and subject inflection but not between Dogrib subjects and subject inflection. With respect to adpositional phrases the languages behave in an identical manner. A similar distribution can be seen in the pairs OVS Hixkaryana and VSO Yagua. With non-third person forms, Hixkaryana does not permit cooccurrence between a nominal and an inflectional prefix, as below:

(11) a. ro-hana   b. *uro hana   c. *uro ro-hana
         1-to   1   to   1   1-to
         'to me'   ('to me')   ('to me')

In Yagua, there is complementary distribution between adpositional object agreement and a preceding overt adpositional object.

(12) a. sa-viimú jumuñu
         3-inside canoe
         'inside the canoe'

     b. jumuñu viimú
         canoe   inside
         'inside the canoe'

     c. *jumuñu sa-viimú
         canoe   3-inside
         ('inside the canoe')

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Yagua shows the same complementary distribution between subject inflection and an overt subject:

(13) a.   sa-puuchu Anita
            3-carries   Anita
            'He/she/it carries Anita.'

     b.   Pauro puuchu Anita
            Paul   carries Anita
            'Paul carries Anita.'

     c.   *Pauro sa-puuchu Anita
            Paul   3-carries   Anita
            ('Paul carries Anita.')

In Hixkaryana, on the other hand, cooccurrence is possible between direct object inflection and an overt direct object, even for non-third person subjects but third person subjects can cooccur with subject inflection (Derbyshire, 1985; p. 8-9).

(14)   r-akoronomehe uro
           1O-help   1sg
           'S/he helps me'

We have two pairs of languages, Irish and Dogrib and Yagua and Hixkaryana which both show complementary distribution between P-object and P-object inflection with only one member of each pair (Irish and Yagua) showing complementary distribution between subjects and subject inflection. How can we account for the difference? Hale notes in his discussion of Dogrib and Irish that Dogrib is SVO and Irish is VSO. We may extend the argument to the pair Hixkaryana (OVS) and Yagua (VSO). The VSO languages show

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complementary   distribution   for   subjects/subject   inflection (incorporation for Hale) while the non-VSO cases show cooccurrence.

Hale suggests that incorporation is only permitted if the landing site of the movement (the verb) properly governs the movement site and argues that this is possible in VSO but not SVO (or OSV). The VSO structure follows:

(15)

```
                CP
              /    \
        Spec, CP    C'
                   /  \
                  C    IP
                  |   /  \
                V+I  Spec, IP   I'
                 |    |        /  \
               verb   NP      I    VP
                      |       |   /  \
                   subject    V  V    NP
                              i  |    |
                                 t    object
                                  i
```
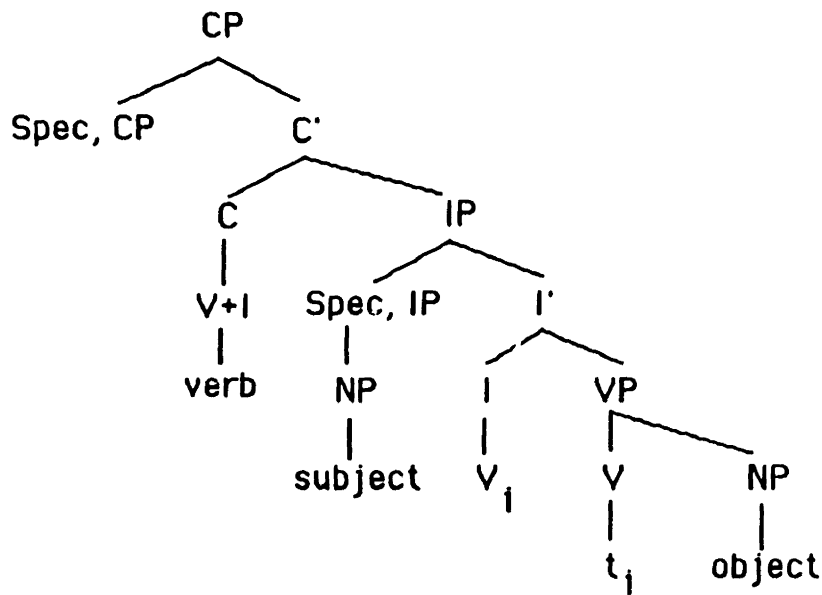
Under Hale's analysis, in VSO the raised verb properly governs subject position and incorporation is possible since the trace of incorporation will be properly governed. This is not the case in SVO since the verb does not properly govern the subject. The prediction is clear, complementary distribution (incorporation) will only be possible when the category incorporated is properly governed, i.e., in

VSO languages.[6] In Hale's terms, given that Dogrib shows complementary distribution between adpositional objects and adpositional object inflection, it follows that Dogrib adpositional objects are properly governed. Since, as we saw above, Dogrib has the same complementary distribution with direct objects and direct object agreement, we can deduce the conclusion that the Dogrib verb properly governs its direct object, *contra* Jelinek.

So, for example, in Navajo postpositional phrases, which we assimilated above to Navajo subject and object NPs, we argued that the agreement morpheme (*y*-) received the thematic-role in postpositional phrases containing an overt NP (*tl'óó∤ y-ee*, knife 3-with, 'with a knife'). The overt NP (*tl'óó∤*) was assumed to be (somewhat like) an adjunct. Since complementary distribution is not found in Navajo, with Hale's analysis there is no reason to question this conclusion.

In Dogrib, incorporation is possible of direct objects and adpositional objects, since we observe complementary distribution. Thus, in Dogrib, adpositional objects and direct objects are properly governed, while in Navajo they are not governed at all. The conclusion is that Dogrib is configurational and Navajo is non-configurational, a fairly substantial difference between languages, the only evidence for which is that Dogrib shows complementary

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[6] In principle we should extend the prediction to OSV but there are very few such languages, they are not well studied, and, if our suggestion in Chapter 3 that all object before subject languages are adargument languages—except perhaps Malagasy—it is not obvious that the locality effects of VSO languages may be replicated in OSV languages.

distribution between inflection and coreferential NPs while Navajo permits cooccurrence. This evidence requires the conclusion that the structure of Navajo and Dogrib PPs, and other categories, is radically different. The conclusion is not excluded *prima facie* but there is evidence to suggest that such a major difference between languages should not hinge on the difference between cooccurrence and complementary distribution.

The data are discussed in Saxon (1985) and in some detail in Alexander (1989). The evidence comes from cases where Dogrib, generally showing complementary distribution requires cooccurrence, somewhat like Navajo:

(16)

	Dogrib				Navajo
a.	bemo 3-mother 'her/his mother'	cf.	a.	ye-t'à 3-with 'with it'	a. y-ee 3-with 'with it'
b.	*Margaret mo Margaret mother ('Margaret's mother')		b.	mbeh t'à knife with 'with a knife'	b. *tl'óół ee rope with ('with a rope')
c.	Margaret bemo Margaret 3:mother 'Margaret's mother'		c.	*mbeh ye-t'à knife 3-with 'with a knife'	c. tl'óół y-ee rope 3-with 'with a rope'

The cases in (16a) show that all languages permit an inflected postposition to stand alone. In (16b), we see the familiar Navaho case where the postposition requires inflection and the familiar Dogrib case (the middle case) where Dogrib permits an uninflected postposition to appear with a full NP. The first case in (16b) shows

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that in certain cases Dogrib does not permit the uninflected postposition to appear with an NP, i.e., here Dogrib behaves just like the familiar Navajo cases. Consistent with this, the first case in (16c) shows that with this type of genitive NP, the full NP can cooccur with an inflected P (as in Navajo, see the third example in the column) unlike the standard Dogrib examples, such as the second example in the column. Thus, there are cases in which Dogrib behaves exactly like Navajo with respect to cooccurrence of NPs and agreement morphemes. Saxon also shows constructions, generally idiomatic constructions (Ken Hale: pc), in which Navajo shows the Dogrib type pattern. It seems strained to claim that languages which have cooccurrence are non-configurational while languages with complementary distribution are configurational when we see examples of both in one language, as in Dogrib.

Hale's analysis as presented comes with the consequence that languages which show complementary distribution of NPs and agreement inflection must be so by virtue of having this agreement inflection begin at D-structure in an NP position. This agreement inflection receives a thematic-role in this NP position and, hence, under Jelinek's conception of non-configurational languages as being languages which assign θ-roles to agreement morphemes, a complementary distribution language (such as Dogrib) is perforce a configurational language.

Is this a negative consequence? We have already suggested that facts from Dogrib (showing some cases of complementary

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distribution and some of cooccurrence) suggest that Hale's distinction is artificial. Ignoring these facts for now, we might view the consequence as a *reductio* on the notion of (Jelinek's analysis of) configurationality since it forces a class with English and Dogrib together in opposition to Navajo, a close relative of Dogrib. If there is a real notion of non-configurationality, a major separation between languages like English with relatively fixed word order and little null anaphora and Warlpiri, a language with very free word order and extremely common null anaphora, we might be surprised if languages like Dogrib and Navajo, which share the properties of rich null anaphora and relatively fixed word order, were not in separate classes for the purposes of the distinction. In short, Navajo and Dogrib are more alike, for the data of non-configurationality, that Dogrib and English. Hale's analysis seems to force the grouping Dogrib and English to the exclusion of Navajo.[7] We may view this as an exposition of the specious nature of configurationality generalizations (à la Jelinek) or as a problem for Hale's analysis. If

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[7] Note that we are not suggesting that this reveals a *slippery slope* of configurationality such that non-configurational languages and configurational languages are so close that languages on the margin such as Navajo and Dogrib might be in different classes. We maintain that Dogrib and Navaho are richly non-configurational from the point of view, at least, of Hale's superficial characteristics on non-configurationality. In that view, Navajo and Dogrib, though clearly distinct from Warlpiri, are clearly on the non-configurationality part of the line. There may be languages, such as Choctaw (Davies, 1986) which are *on the line*, but we do not believe that Dogrib and Navajo approach this line—not that we necessarily approve of seeing configurationality as having such fine gradations. [I am indebted to Jack Martin and Aaron Broadwell for discussions on Choctaw.]

we want to maintain Jelinek's analysis, and accept Hale's, naturally we must view the conflict between the two as undesirable.

A second concern is related to the facts about Dogrib mentioned above at (16). Non-configurationality has generally been viewed as a substantial distinction between languages: it purports to distinguish English from Warlpiri, two quite different languages. The difference between (i.) permitting cooccurrence of inflection and an NP or (ii.) showing complementary distribution is a rather low level difference, typologically speaking (in the sense that the different types of cases are both found in individual languages, such as Navajo, and closely related languages, such as Dogrib and Navajo, show a difference with respect to cooccurrence possibilities). In Hixkaryana, for example, first person P-inflection cannot cooccur with a first person pronoun but third person P-inflection does cooccur with a third person NP:

(17) First Person P-Objects

    a. n-oseryehyaha biryekomo [ro-hana pp]
        3S-is afraid   boy   1- to
        'The boy is afraid of me."   (Derbyshire, 1985; 16)

    b. *n-oseryehyaha bireyekomo [uro ro-hana pp] (ibid., p. 8)
        3S-is afraid   boy   1 1- to
        ('The boy is afraid of me.')

    c. *n-oseryehyaha bireyekomo [uro hana pp] (ibid.)
        3S-is afraid   boy   1 to
        ('The boy is afraid of me.')

Third Person P-Objects

d. [o-min]ᵢ   yᵢ-awo-hra pp] w-ahko   (ibid.)
   2-house 3O-in- not   1-was
   'I was not in your house.'

With first person objects of postpositions, inflection on P is obligatory and the pronoun obligatorily absent.   In (17d), however, we do see cooccurrence between a third person NP (*omin*, your house) and a third person inflection marker (*y*-).   Thus, for third person, Hixkaryana behaves just like Navajo but for first person Hixkaryana behaves more like the standard cases from Dogrib.   If this difference, permitting cooccurrence of P-infl and P-obj, covaries with configurationality as Hale's analysis suggests, we are forced to the conclusion that Hixkaryana third person is non-configurational and Hixkaryana first person is configurational.   This seems unlikely— perhaps even conceptually incoherent.[8]

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[8] There is certainly an intuitive explanation for why Hixkaryana would show a third person/non-third person distinction with cooccurrence.   A first person pronoun is redundant when appearing with first person inflection on a head while third person NPs are never fully redundant appearing with third person inflection (since the exact referent is provided by the NP).   Even when the "NP" is a third person pronoun, there is not full redundancy since Hixkaryana, like many languages, shows great semantic distinctions (eg. proximity, number, animacy) in its third person pronouns than in either its non-third person pronouns or its third person inflection.   Hence mokyamo, third person medial-deictic, animate, collective and moni, third person remote-deictic inanimate (singular or plural) both trigger ni- as subject agreement.   These third person pronouns are not fully redundant.   On the other hand, non-third person pronouns and non-third person agreement in Hixkaryana only encode number so a first person pronoun uro is always redundant.   Nothing here suggests that such a difference in redundancy should be related to configurationality.

So, Hixkaryana shows different cooccurrence possibilities depending on grammatical person. The difference Hale's analysis is concerned with—complementary distribution vs. cooccurrence of inflection and NPs—seems far less significant typologically than configurationality. Viewed thus, it is awkward to assume an analysis which has configurationality covariant with complementary distribution of P-infl and P-object. Further, recall that Hale is concerned with proper government as contributing to incorporateability. For the Hixkaryana cases, showing complementary distribution with non-third person forms only, Hale must argue that Hixkaryana third person postpositional objects are not properly governed, while first person postpositional arguments are. This seems unlikely and casts doubt on Hale's analysis--though the facts about incorporateability of subjects only being possible in VSO are compelling support for Hale's theory and deserve analysis. Considering the Hixkaryana data, from a typological point of view, Hale's distinction seems suspicious. Looked at from a theoretical point of view, the conclusions Hale's analysis forces for government in Hixkaryana, seem undesirable—1st person pronouns which are governed, 3rd person pronouns which are not.

We have two theories, Hale's analysis of inflection across categories and Jelinek's hypothesis concerning theta-assignment and configurationality. They are, as originally formulated, in direct conflict. For most of the next two chapters we will consider this conflict and its consequences in some detail. Both theories have

strengths and weaknesses and their relation raises a number of issues. Chiefly: Are the theories reconcilable, are either/both of them *correct* and is it desirable to reconcile them?

Concretely, in this chapter we will examine inflection across categories in a broader range of languages than considered by Hale, 1988. We will discuss Irish, Welsh, Breton (Celtic, Europe), Navajo, Dogrib, Slave (Athapaskan, North America), Hixkaryana (Carib, South America) and Yagua (Peba-Yaguan, South America). In the next chapter we provide extensive discussions of Hixkaryana and Canela-Krahô (Jê, South America). This will provide a broad foundation for analyzing Hale's proposal. After motivating Hale's analysis, we will move to a further investigation of the tension between Hale's and Jelinek's analyses.

The view we will adopt is that Hale is incorrect to analyze complementary distribution as being due to both the pronominal element and the overt direct object being in the same D-structure position, and hence involving incorporation (a structural analysis). We discuss complementary distribution cases where it cannot be argued that the pronominal and the NP occupy the same D-structure position. We analyze complementary distribution in non-structural terms involving options in thematic-role assignment, permitting some languages to assign thematic roles to NPs or to agreement morphemes. This analysis is independently motivated and does not conflict with a Jelinek style analysis of configurationality—in fact, our analysis provides support for such an analysis.

4.2 Implications of Inflection Across Categories

We will be less than thorough in discussing the possible implications of the line of inquiry in this chapter. This is because the resolution of the issues addressed is not complete. Also the implications involve questions far beyond what we are actually able to answer here.

A simple example of this incompleteness concerns the manner in which Hale's analysis disassociates the property of (i) being person/number inflection which appears on a lexical head with the property (ii) being an agreement morpheme. Alternative sources of person/number inflection raise the possibility that agreement is less common than one might have supposed before Hale's work--simply by virtue of the arithmetical fact that at least some *agreement inflection* must be reclassified as *incorporated inflection*. This is clearly seen from a superficial examination of the identical Irish P-object and subject cooccurrence possibilities: (data from McCloskey and Hale, 1984; 513-514)

(18) a. or-m
      on-1
      'on me'

    b. ar Eoghan
       on Owen
       'on Owen'

    c. *or-m mé
      on-1 1
      ('on me')

(19) a. cuiri-m
      puts-1
      'I put'

    b. cuirean Eoghan
      puts   Owen
      'Owen puts'

    c. *cuiri-m mé
      puts-1 1
      ('I put')

The cooccurrence possibilities for NPs and inflection are the same for Irish P-objects and Irish subjects. Hale arguês that the person/number inflection in (18a) arises from incorporation of -m from the P-object NP position. When we extend this analysis to (19a), and assume incorporation of the subject inflection (also -m), we derive the result that Irish lacks subject agreement (but has subject incorporation). Thus, not that all languages have subject agreement. Although many languages seem, *prima facie*, to lack subject agreement (Chinese, for example), one might have entertained the possibility that (abstract) subject agreement was universal (like abstract Case assignment). Hale's analysis suggests otherwise and purports to provide a method for distinguishing real agreement (as in Italian) from incorporation (as in Irish).[9]

Another non-obvious, and problematic, implication of Hale's analysis is the suggestion of a continuum of configurationality. We may construct the argument using Dogrib (Athapaskan) and Yagua (Peba-Yaguan). In Hale's analysis, complementary distribution of NP and inflection on a head suggests that theta-assignment from that

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[9] Another source of ambiguity between agreement and incorporation comes from the possibility of abstract agreement in the theory. If we assume that in English, there are abstract agreement morphemes (which surface as Ø) for, say, 2nd person present tense for 'You walk-Ø', then the theory might permit abstract incorporation. For a given Ø morpheme, we might not be able to tell whether it arises from abstract agreement or abstract incorporation. Though this may seem farfetched, we show in §5.1 that we Hale must assume abstract incorporation to account for the agreement facts of Hixkaryana subjects and direct objects.

head is to the NP position, which may be filled at D-structure with either a incorporateable pronoun or a lexical NP. Such thematic-role assignment to NP, under Jelinek's analysis, is a property of configurational languages. For some XP and for some language, complementary distribution of NP and inflection in that XP suggests that that language is configurational. Note, though, that complementary distribution within one XP does not imply complementary distribution within all XPs. As shown by Saxon (1986, 65-66) and Hale (1988), Dogrib does not permit cooccurrence of a direct object and direct object inflection but does permit cooccurrence of subjects and subject inflection:

(20) a. Cheko [kwik'i nà-   i-   zhì vP]   (Saxon, 1985; 59)
        boy   gun   ADV-PERF-break
        'The kid broke the gun.'

    b. Cheko [nà-   yi- i-   zhì vP]
        boy   ADV-3O-PERF-break
        'The kid broke it.'

    c. *Cheko [kwik'i nà-   yi- i-   zhì vP]
        boy   gun   ADV-3O-PERF-break
        ('The kid broke the gun.')

(21) a. tlichçç tli   t'à mbehchi k'ets'edli   (ibid.; 66)
        Dogrib dog by sled   ADV:1pl:IMP:Slide
        'We Dogribs pull sleds using dogs.'

    b. ʔasi ni   xàrè nekwìghà k'eneet'a   ? (ibid.)
        Q   2sg self 2sg:hair   ADV:2sg:PERF:cut
        'Did you cut your hair yourself.'

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Dogrib also permits topic NPs to cooccur with inflection. We see cooccurrence of topic (22b) with the following minimal pair involving a non-topic direct object (22a; 16c above) and the same NP functioning as a topic:[10]

(22) a. *Cheko [kwik'į nà- yį- i- zhì VP]   (ibid.; ɔ9)
         boy   gun   ADV-3O-PERF-break
         ('The kid broke the gun.')

     b. Kwik'į, cheko nà- yį- i- zhi   (ibid.; 65)
        gun   boy   ADV- 3-PERF-break
        'As for the gun, the kid broke it.'

Dogrib, under Hale's analysis, does not have complementary distribution between the pairs {subject, subject inflection} or {topic, topic inflection} and, thus, Dogrib has topic and subject agreement. So there are some categories in which Dogrib lacks complementary distribution and, perhaps, categories (IP/S, for example) in which Dogrib is nonconfigurational.

Yagua, on the other hand, severely restricts the cooccurrence of a subject NP with inflection on the verb. In Yagua subjects may precede uninflected verbs (*Pauro puuchu...*) but may not precede inflected verbs (**Pauro sa-puuchu...*).

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[10] Hale presumably must assume base generation of the topic in the following form since a movement analysis would move the topic from a D-structure object position, suggesting the possibility of base generation of a direct object clitic attached to V.

(23) a. Pauro puuchu Anita (Everett, 1988; 1-2)
      Paul   carries Anita
      'Paul carries Anita.'

     b. sa-puuchu Anita
          3S-carries Anita
          'He/she/it carries Anita.'

     c. <u>sa</u>-puuchu <u>Pauro-nik</u> <u>Anita</u>
          3S-carries Paul-   3O Anita
          'Paul carries Anita.'

     d. *<u>Pauro</u> <u>sa</u>-puuchu Anita
          Paul   3S-carries Anita
          ('Paul carries Anita.')

This pattern can be observed across categories in Yagua, as discussed later in this chapter. If we extend Hale's analysis to this "positional complementary distribution", we can say that complementary distribution exists for all XPs in Yagua. Hence, all XPs are "configurational" in Yagua. This is not the case in Dogrib, where subjects and topics can cooccur with inflection and, hence, for the XPs dominating subjects and topics, Dogrib is non-configurational. Is Dogrib less configurational than Yagua, and, conversely, is Dogrib more configurational than Navajo, where there is never complementary distribution of the relevant type?[11] And is the

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[11]We can approach the issue from the point of view of government theory. Recall that Hale argues that incorporation is only possible when the incorporated element is properly governed by a lexical head. Thus, incorporation (configurationality) is confined to languages which have government of NP, whereas agreement (non-configurationality) is associated with no government of NPs. There are the class of configurational languages (such as English, French, etc.) in which verbs do properly govern their direct objects. It is arguable that some of these languages (eg. French, Italian; see

complementary distribution/cooccurrence difference the sort of evidence we would like to decide the question?

One could explore this relative configurationality (Dogrib < Yagua < Navajo < Warlpiri) , but if (i.) there are data of non-configurationality such as Hale's "superficial characteristics of non-configurationality" [see Chapter 2] and (ii.) configurationality is expressible along a continuum as a relative measure, we expect to find a continuum effect for Hale's properties. With respect to the diagnostics, however, Yagua, Dogrib and Navajo do not appreciably differ, and pattern to the exclusion of English, on the one hand, and Warlpiri, on the other. One might imagine that there could be other tests for configurationality which could allow us to find the distinctions suggested by (this way of viewing) Hale's theory but such tests are not currently known and are not represented in the literature.

It may be stretching Hale's analysis to find the prediction of relative configurationality but there is a straightforward argument for it. (1) Configurationality is viewed as a property of languages (but see Hale, 1982, 1985 for an alternative); (2) Interpreted through Jelinek's analysis, Hale's system makes configurationality predictable from the properties of a single XP (showing complementary distribution); (3) Languages differ in the number of XPs showing complementary distribution. Does (1-3) suggest that the extent of

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our discussion below) have incorporation of direct objects but far less clear that they permit incorporation of prepositional objects, which should be permitted under Hale's analysis.

configurationality differs as a function of the number of XPs which are demonstrably configurational under Hale's analysis?

There are a number of ways to understand Hale's analysis, reducing or permitting the conflict with Jelinek's analysis, seeking predictions for a continuum effect for configurationality, and so forth. The literature on complementary distribution of the type we are discussing is limited to Celtic and Athapaskan languages. Further investigation of the data of inflection across categories will be helpful in narrowing the possible ways of interpreting Hale's theory. For the remainder of this chapter, we will discuss the basic data of a theory of inflection across categories, focusing on languages which are revealing for complementary distribution. In Chapter 5 we will consider two languages which we argue suggest strongly that Hale's analysis is incorrect and which seem to support Jelinek's analysis of non-configurationality.

4.3 Inflection Across Categories

4.3.1 Argument Languages

We have already briefly discussed Irish, perhaps the best known example of complementary distribution of arguments and inflection. Taking an example from Irish (McCloskey and Hale, 1984):

(24) a. cuiri-m
         puts-1
         'I put'

b. *cuiri-m mé
puts-1   1
('I put')

c. cuireann Eoghan
puts   Owen
'Owen puts'

Subject agreement may appear on the verb (*cuiri-m*) or an overt NP may appear with a verb that is not inflected for person and number (*cuireann Eoghan*) but an NP cannot appear with a verb inflected for person and number (**cuiri-m mé*). Irish also permits inflection to appear on prepositions and with P we see the same pattern:

(25) a. or-m
on-1
'on me'

b. *or-m mé
on-1   !
('on me')

c. ar Eoghan
on Owen
'on Owen'

Again we see either inflection on the head (*or-m*) or an NP (*ar Eoghan*) but not both (**or-m mé*).

McCloskey and Hale (1984) show that inflection on nominals patterns like inflection on P and V, apart from the fact that the *inflection* on N is not enclitic and appears before the 'head noun';

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(26) a. mo theach   infl   N
        1   house
        'my house'

     b. *mo theach mé   *infl   N   NP
        1   house   1
        ('my house')

     c. teach Eoghain   N   NP
        house Owen (GEN)
        'Owen's house'

With NPs, we see *mo* functioning like the inflection appearing on P; either *mo* appears (*mo theach*) or an NP (*theach Eoghain*) but not both (**mo theach Eoghain*). It is arguably the case that the differences between *mo* and the suffixal *-m* appearing on P is independently explainable and that the best analysis treats *mo* as a type of inflection, which incorporates into determiner position (D) instead of N.[12]

Stump (1984) shows similar phenomena in another Celtic VSO language, Breton (though see Stump, 1984, for some complications not relevant here).[13] First, subjects:

(27) a. levrioù a   lenn-an   (Stump, 1984; 291)
        books   PCL   read- 1sg
        'I read books'

     b. me a   lenn levrioù
        1   PCL   read books
        'I read books'

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[12] This position is taken in Alexander, 1988b.
[13] a is a preverbal particle; see Stump (1984) for details.

c. *me a   lenn- an   levriou
   1 PCL   read-1sg   books
   ('I read books')

As in Irish, we see either an inflected verb (*lenn-an*) or a pronoun (*me*) occurring with an uninflected verb (*me...lenn*) but not both: (**me..lenn-an*). The pattern is the same for inflected prepositions:

(28) a. ul levr   brezhonek a   zo gantañ   (Stump, 1984; 297)
         a book   Breton   PCL is with-3sg
         'He has a Breton book'

     b. ul levr   brezhonek a   zo gant   Yannig
         a book Breton   PCL is with   Yannig
         'Yannig has a Breton book'

     c. *ul levr   brezhonek a   zo gantañ   Yannig
         a book Breton   PCL is with-3sg   Yannig
         ('Yannig has a Breton book')

In (28) we see either an inflected P (*ganin*, 'with:1sg') or an NP with an uninflected P (*gant Yannig*, 'with Yannig') but not an NP with an inflected P (**gantañ Yannig*).

As in Irish, the facts of inflected nominals are slightly more complicated and show the inflection preceding the possessed N. For example:

(29) a. tad   Yannig   (Stump, 1984; 344)
         father   Yannig
         'Yannig's father.'

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b. e dad
   3 father
   'His father.'

c. *e_i dad Yannig_i
   3 father Yannig
   ('Yannig's father.')

In (29a), *Yannig* modifies *tad* ('father') and there is no overt genitive marking; word order is the only indication of the possessor relation. In (29b) the "proclitic possessive pronoun" (Stump, 1984; 344) may also appear, causing a lenition mutation (*tad* to *dad*) in *e dad*. It not possible to have both the proclitic possessive pronoun and the overt NP possessor (*e dad Yannig*; also out, of course, is *e tad Yannig*, without lenition).

Welsh, also discussed in McCloskey and Hale (1984), unlike its Celtic relatives Irish and Breton, does permit a limited cooccurrence between inflection and a pronoun—though a special type of pronoun. Consider subject agreement first: (All Welsh data from McCloskey and Hale, 1984; 517-519)

(30) a. gwel-   ais   ef
        see+PST-1sg   3sg
        'I saw him'

     b. gwel-   ant_i   hwy_k
        'See+PRES-3pl   3plObj
        'They see them'   (i≠k)

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c. gwel-   <u>ais</u>   (i)   ef
   see+PST+1sg   1sg   3sg
   'I saw him'

As we see from (30c) Welsh permits pronouns (such as *i*) in subject position cooccurring with subject agreement inflection (*gwelais*), unlike Breton or Irish. The cooccurrence possibilities are the same for prepositions (31) and nominals (32):

(31) a. idd-   i   b. idd-o
        to-   3Fsg   to- 3Msg
        'to her'   'to him'

   c. idd-i   hi   d. idd-o   fe
       to-3Fsg   her   to- 3Msg   him
       'to her'   'to him'

(32) a. eu hafal   c. ei   gi
        3pl apple   3Msg   dog
        'their apple'   'his dog'

   b. eu   hafal   hwy   d. ei   gi   ef
       3pl apple   they   3Msg   dog he
       'their apple'   'his dog'

Note, first, that with nominals the inflection precedes the head as in Breton and Irish; hence (*ei gi ef*, '3Msg dog he' vs *gi-ei ef* 'dog-3Msg he') but (**i idd hi*, '3Fsg to her' vs *idd-i hi*, 'to-3Fsg her'). In all three Celtic languages we have considered, genitive inflection

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does not appear in the post-head position expected from consideration of other types of inflection.

From (30-32) we see that the pronouns which may cooccur with inflection are optional. Interestingly the pronouns which appear in the argument positions of the above constructions (30c-d,31c-d, 32c-d) are not ordinary pronouns. As McCloskey and Hale (1984; 519-520, 529 ftn17) point out, these '(Affixed) Auxiliary Pronouns' only appear in the argument positions of heads which are inflected with person-number morphology. When 'ordinary' pronouns occur in direct object position, or the argument positions of the above categories, the head category is uninflected for the person number features of the pronoun (thus, when an ordinary pronoun appears with a preposition the preposition is uninflected, and, obviously, when the direct object pronoun appears, the verb is not inflected for direct object agreement).[14] Also, as we expect, Affixed Auxiliary Pronouns cannot appear with uninflected verbs.[15]

In the Celtic languages considered, we find that agreement inflection is in complementary distribution with the normal trigger of that inflection (noting that in the Welsh cases the pronouns which appear are not the ordinary pronouns). Celtic shows the basic complementary distribution between inflection on a head and the NP argument of that head.

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[14] These pronouns seem to be essentially resumptive.

[15] Note that Welsh has pronouns which cooccur with inflection and pronouns which show complementary distribution but obviously no researchers have argued that there is a concomitant configurationality difference between the types of pronouns.

Before presenting Hale's analysis, we will now consider similar phenomena in some adargument languages.

4.3.2 Adargument Languages 1: Athapaskan

In the preceding section we saw a limited contrast between Welsh on the one hand and Celtic and Breton on the other as to whether agreement morphology may appear with an overt representation of the person/number-features that presumably trigger that agreement. A stronger contrast can be seen in the Athapaskan languages. Consider, for example, inflected postpositions in Dogrib (Saxon:1986), Navajo (Hale:1987), and Slave (Saxon:1985):

(33) a. mbeh t'à   Dogrib
           knife with   (Saxon, 1986; 54)
           'with a knife'

        b. ye-t'à
           3-with
           'with it'

        c. *mbeh   ye-t'à
           knife   3-with
           ('with a knife')

In Dogrib, like Irish, the NP object may appear with an uninflected postposition (*mbeh t'à*) or there may be an inflected postposition (*ye-t'à*) but not both (**mbeh ye-t'à*).

Now consider Navajo:

(34) a. *tl'óół ee   Navajo
   rope with   (Hale, 1988; 4)
   ('with a rope')

  b. y-ee
   3-with
   'with it'

  c. tl'óół y-ee
   rope 3-with
   'with a rope'

In Navajo, the postposition is always inflected (*tl'óół ee and
*ee) and the NP object is optional (y-ee or tl'óół y-ee).

(35) a. Mary gha   Slave
   Mary for   (Saxon, 1985;)
   'for Mary'

  b. be-gha   c. * Mary be-gha
   3-for   Mary 3-for
   'for her/him/it' ('for Mary')

Slave patterns exactly like Dogrib with NP-uninflected P (*Mary*
gha) or inflected P with no NP (*be-gha*) but not both (**Mary be-gha*).

One type of case is ungrammatical in all the Athapaskan
languages we are considering:

(36) a. *t'à   or * *pro* t'à Dogrib
   ('with [e]')

  b. *ee   or * *pro* ee Navajo
   ('with [e]')

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c. *gha   or * *pro* gha   Slave
    ('for [e]')

There is no deep explanation for the ungrammaticality of (29a-c). Trivially, they simply fail because they do not express the required object of the postposition. This lack of a non-trivial explanation does not extend to the cases with *pro*. We note that *pro* cannot replace a regular NP even in those languages where NPs do not appear with inflection: hence, Dogrib *mbeh t'à* ('with a rope') vs. *pro t'à* ('with it'). So, though overt expression of NP is never required, it is never possible to generate a *pro* adposition object in an Athapaskan language. We may extend this analysis to all categories. One could argue that *pro* does occur with inflected adpositions (*pro yet'á*) but not with uninflected adpositions (*pro t'á*) because pro must be identified, but why should *pro* be the only NP which can cooccur with inflection unless the agreement element absorbs something that the NP requires, such as Case or a θ-role—a conclusion leading to the same result?

The contrast between Navajo and its Athapaskan relatives can be expressed very simply. In Navajo, postpositions always bear inflection and NP objects are optional. In Slave and Dogrib, on the other hand, inflection is in complementary distribution with an overt expression of the object of the postposition. In all three languages the object of the postposition must be expressed in some form.[16]

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[16] We might like to add that the expression of the P-object cannot be *pro*, but adding the condition "with a phonetic matrix" is unsatisfactory since Ø-

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4.3.3 Adargument Languages 2: Hixkaryana

Hixkaryana, as suggested earlier, lies between Navajo and Dogrib (or Slave). We have seen two groups of related languages in which languages differ on whether the argument role may be expressed solely by either agreement morphology or by NP arguments. Hixkaryana (Carib) (Derbyshire:1985, see also Alexander:1988) shows such a difference based on the grammatical person of the argument. Consider, again, postpositions:

(37) a. ro-hana b. *uro ro-hana   c. *uro hana
        1-to   1   1-to   1   to
        'to me'   ('to me')   ('to me')

(38) a. y-awo-hra   (Derbyshire, 1985)
        3-in- NEG
        'not in it'

     b. o-min y-awo-hra (Derbyshire, 1985;)
        2-house 3-in- NEG
        'not in your house'

In Hixkaryana, as in Navajo, all heads are inflected for agreement with their arguments (subject agreement appears on verbs) and it is not possible for a NP to 'substitute' for that inflection (37c). Third person differs from the other persons, however, in that 3rd person NPs may cooccur with 3rd person inflection on nominals or postpositions (38b) but pronoun forms of the other persons cannot

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inflectional endings are permitted and, under Hale's and Jelinek's analyses, they may serve as argumental N^0s.

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cooccur with inflection on the nominal or postposition (37b). Unlike the Celtic and Athapaskan languages inflection on the verb differs from inflection on other categories, and, in Hixkaryana, NPs of all persons can cooccur with inflection on the verb:

(39) a. n̲-oseryehyaha b̲i̲ryekomo [pp (*u̲ro̲) ro̲-hana]
3S-is afraid   boy   1   1-to
'The boy is afraid of me' (Derbyshire, 1985)

b. r̲-akoronomehe u̲ro̲
10-help   1sg
'He/she helps me'   (ibid.)

Thus in (39a), 3rd person inflection on the verb cooccurs with the subject NP (b̲i̲ryekomo) while in (39b) 1st person inflection on the verb cooccurs with the 1st person pronoun (uro).

The above examples show that cross-linguistic differences in cooccurrence restrictions between NPs and agreement inflection are fairly low level from a typological point of view and do not have the significance we would expect if such a difference had direct consequences for the argument/adargument distinction (and see similar arguments in Chapter 2 against a proposal of precisely this type by Leslie Saxon, 1985).

4.4 Hale's Analysis and the facts of Yagua

Thus far, we have considered seven languages permitting agreement inflection on P and other lexical heads. The core opposition is between languages of the Navajo type, with inflected

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heads appearing with full NPs, and languages of the Dogrib/Irish type in which inflected heads cannot cooccur with full NPs. There are other differences as well. For example, Welsh permits a special class of pronouns to cooccur with inflected heads, appearing to be a middle case between Navajo and Dogrib/Irish. Further, Hixkaryana patterned with Navajo for 3rd person and more like Irish/Dogrib for non-third person forms. In Hixkaryana we also saw a cooccurrence distinction between verbs (which always permit cooccurrence) and non-verbs (which showed cooccurrence only with 3rd person forms). This gives us some background for constructing a theory of inflection on heads which illuminates the differences we have observed.

Reviewing Hale's (1988) analysis, he assumes that complementary distribution of the Irish and Slave type derives from the fact that the agreement inflection and the overt NP occupy the same position at D-structure with incorporation of the inflection onto the lexical head; under this analysis, Irish prepositions would have the following structure.

(40)
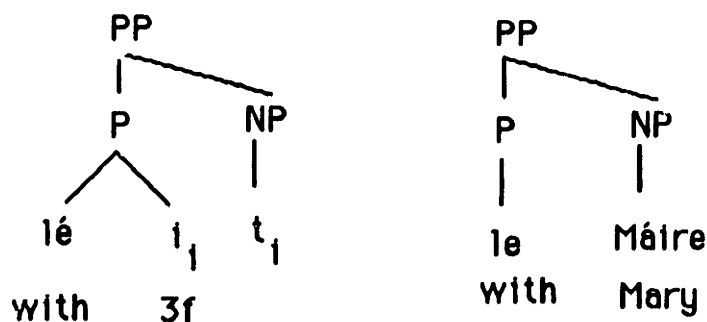
Complementary distribution is a function of incorporation and complementary distribution entails incorporation. What, however, if the complementary distribution is not absolute, but only relative? In the next section we will consider such a case.

4.4.1 Positional Complementary Distribution: Yagua

Thus far we have only discussed cases where the central issue was whether or not NPs could appear with agreement inflection in an absolute sense. These cases are not particularly difficult to analyze since we have one fact (complementary distribution) which is analyzed by one explanation (incorporation). Since incorporation is not independently verifiable as distinct from agreement (i.e., there is no way to show the source of the inflection as being agreement or incorporation) the analysis we have have is not particularly removed from the facts. The more we move from the standard Irish type cases the more opportunities we will have to find interesting test cases for Hale's analysis. In this section we will consider a less common case where the restriction on cooccurrence is position relative rather than absolute.

A rich example of this type of complementary distribution is the Amazonian VSO language Yagua (Peba-Yaguan) discussed in Payne (1985, and elsewhere) with similar analyses in Alexander (1989) and Everett (1988).[17] Consider first the nominal inflection paradigm:

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[17] Yagua is the only extant member of the Peba-Yaguan family. It is spoken by approximately 300 speakers in Northeastern Peru.

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(41) a. Pedro junoonú
Pedro mother
'Pedro's mother'

b. sa-junoonú
3-mother
'his/her/it's mother'

c. sa-junoonú Pedro
3-mother Pedro
'Pedro's mother'

d. *Pedro sa-junoonú
('Pedro's mother')

The pattern is that an N or NP may precede an uninflected head (*Pedro junoonú*) or an NP may follow an inflected head (*sa-junoonú Pedro*) but an NP cannot precede an inflected head (**Pedro sa-junoonú*). This pattern is represented across all categories in Yagua, for example with adpositions:

(42) a. jumuñu viimú
canoe inside
'inside the canoe'

b. sa-viimú
3-canoe
'inside him/her/it'

c. sa-viimú jumuñu
3-inside canoe
'inside the canoe'

d. *jumuñu sa-viimú
('inside the canoe')

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As with nominal inflection, an NP may precede an uninflected head (*jumuñu viimú*) or an NP may follow an inflected head (*sa-viimú jumuñu*) but an NP cannot precede an inflected head (**jumuñu sa-viimú*). Although complicated by the appearance of object agreement, we can see the same pattern for subjects and subject agreement:

(43) a. Pedro puuchu Anita
            Paul   carry   Anita
            'Paul carries Anita.'

      b. sa-puuchu Anita
            3- carry   Anita
            'He/she/it carries Anita.'

      c. sa_i-puuchu $Pauro_i$-nii_k $Anita_k$
            3S-carry   Paul-   3O   Anita
            'Paul carries Anita.'

      d. *$Pauro_i$ sa_i-puuchu(nii_k) $Anita_k$
            ('Paul carries Anita.')

Once again, an NP may precede an uninflected head (*Pauro puuchu...*) or an NP may follow an inflected head (*sa-puuchu Pauro...*) but an NP cannot precede an inflected head (**Pauro sa-puuchu..*). Finally, though still more complicated, the same basic pattern obtains for direct objects and direct object inflection:

(44) a. Pauro puuchu-nii
       Paul   carry- 3O
       'Paul carries him/her/it.'

  b.   sa-puuchu-nii

  c.   Pauro puuchu Anita

  d.   sa-puuchu Anita

  e.   sa-puuchu-<u>nii</u> <u>Anita</u>

  f.   <u>sa</u>-puuchu <u>Pauro</u>-<u>nii</u> <u>Anita</u>

  g.*<u>sa</u>-puuchu <u>Pauro</u> Anita

  h. *<u>sa</u>-puuchu-<u>nii</u> <u>Pauro</u> <u>Anita</u>

The status of the subject does not affect the availability of direct object agreement but we have used pairs (a-b) (c-d) (e-f) which show both subject forms. In the first pair we see the verb followed by an inflection marker with no overt direct object (*puuchu-nii*). In the second pair (c-d), the direct object inflection is not present and an overt NP follows the verb (*puuchu Anita*). In the third pair (e-f) the direct object marker appears preceding the direct object (*puuchu-nii Anita* and *puuchu Pauro-nii Anita*) though a postverbal subject may intervene between the verb and its direct object. The above fact suggests, somewhat surprisingly, that the constituent is *nii-Anita* rather than *puuchu-nii* since the sequence *puuchu-nii* can be interrupted by a subject while the sequence *nii-Anita* can not be interrupted. This fact will be suggestive when we
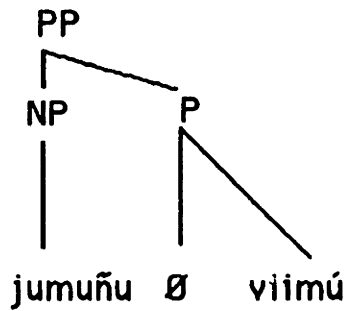
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analyze Yagua. In (g-h) we see that the inflection element, though optional when the verb precedes the direct object (*puuchu-nii Anita* vs. *puuchu Anita*), is obligatory when the subject intervenes between the direct object and the verb (**puuchu-nii Pauro Anita* and **puuchu Pauro Anita*).
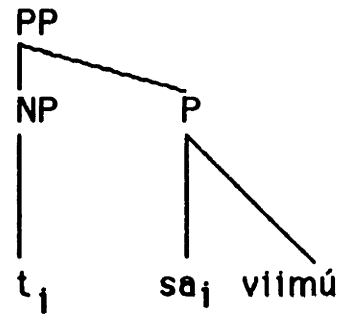
4.4.2 Implications of Yagua

The Yagua facts are very interesting test cases for any theory of inflection on heads. Though the facts are surprising and somewhat convoluted, they seem intuitively reasonable and we would not be surprised to find other languages which have elaborated a pattern similar to Yagua's. For the present discussion, of Hale's analysis of complementary distribution in Irish and Dogrib, the Yagua facts are telling. We have in Yagua a type of complementary distribution— relative complementary distribution—between inflection and NPs. The facts seem related to those of Irish and Dogrib and we would be pleased if our theory of inflection in Irish and Dogrib could extend to Yagua in a natural manner.

This is not possible because of the way that Hale's analysis is structured. Recall that Hale's analysis of complementary distribution relies on the inflection and NP appearing in the D-structure NP position. For adpositions, Hale's analysis can only generate two cases in Yagua:

(45) a.   b.

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        PP                        PP
       /\                        /\
     NP    P                   NP    P
      |    /\                   |    /\
      |   /  \                  |   /  \
   jumuñu Ø  viimú            t₁  saᵢ  viimú
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In Hale's analysis, the P-object position can support either an NP (such as *jumuñu*) or an incorporated pronoun (such as *sa-*) but not both, as in Irish. Yagua requires, however, that both appear, and in a particular configuration.

Yagua is not, strictly speaking, a counterexample to Hale's analysis since Hale's analysis covers complementary distribution cases and Yagua is not, again strictly speaking, a complementary distribution case. Intuitively, we may feel that Yagua should be analyzed by the same theory which analyzes Dogrib, Irish and Navajo but Hale's analysis is not falsified by a case such as Yagua. In fact, this suggests a problem with Hale's analysis since it is difficult or impossible to imagine a counterexample to Hale's analysis. Hale's analysis correlates two properties (i.) complementary distribution entails incorporation and lack of complementary distribution, or cooccurrence, entails agreement, or or non-incorporation. Crucially, there is no objective fact of the matter which allows one to decide whether a particular piece of inflection derives from incorporation or agreement, apart from the facts about complementary distribution

with which Hale correlates incorporation. Thus there is no independent evidence to verify whether incorporation or agreement has occurred. Hale's theory posits both (agreement for Navajo and incorporation for Dogrib). In principle a counterexample for Hale would be for Navajo to have agreement (instead of incorporation) and yet to show complementary distribution. But if Navajo did show complementary distribution, in Hale's system, perforce Navajo lacks agreement and, instead, has incorporation. Hence, Hale's analysis is unfalsifiable and untestable.

This is not to say Hale's view is wrong; it does have intuitive plausibility. What the above should suggest, however, is that if we find a theory of Irish/Navajo/Dogrib which is testable and which passes these tests, we should prefer this alternative to Hale's theory. Or, if we found a theory which was as weak as Hale's but which extended to Yagua as well as Irish/Navajo/Dogrib, then we should prefer *that* theory. If we found a testable alternative which also extended to Yagua (and, say, which resolved the conflicts between Hale's and Jelinek's theories) we would be better off still. In the next section we will attempt that.

4.5 A Revised Incorporation Analysis

With Yagua we have an interesting test case for the analysis of inflection appearing on lexical heads, but as mentioned Yagua also points up a conceptual difficulty with the analysis of Irish and Navajo. The central correlations of Hale's incorporation analysis are,

with respect to inflection on heads and full NPs (i.) complementary distribution entails incorporation and (ii.) cooccurrence entails agreement. As noted above, apart from these correlations, there is no objective fact of the matter to suggest that agreement or incorporation has occurred. In principle, however, there might be tests to distinguish incorporation from agreement.

Recall that in Hixkaryana, 3rd person NPs cooccur with inflection on a postposition but non-third person forms do not. As discussed in Alexander (1988) and §5.1, this entails in Hale's system that non-third person forms are incorporated while third person forms trigger agreement. This could be an instance where we might test whether incorporated forms could be distinguished from agreement forms. In the following chart, compare the pronoun form with the form of the inflection which appears on the postposition:[18]

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[18] Actually the forms may be a level more complicated than suggested below. The pronoun _kiwro_ (I+II) is made up of _ki_ (I+II) and -_ro_ (singular) but _ki_ is also the first person subject marker in intransitives with _w_- being the first person subject marker for copulas. Hence _kiwro_ could be _ki_+_w_+_ro_ (all three of which are one form of the first person, respectively, intransitive S + copular S + direct object). Moving to the other form, _omoro_, we argue below that _o_- is the objective II person, -_ro_ is singular, but _mo_ seems related to _mi_, and _o_- or _ow_-, the II person subject forms. Hence, _omoro_ might be analyzed as _o_+_mo_+_ro_ or 2object+2subject+singular (1 object).

(46)   Pronoun

Person		Individual	Collective	PP infl morpheme
I		uro		ro-
I+II		kɨwro	kɨwyamo	kɨ-
II		omoro	omnyamo	o-
III	nondeictic	noro	nyamoro	y-
III	near-deictic	mosonɨ	moxamo	y-
III	medial-deictic	mokro	mokyamo	y-
III	remote-deictic	mokɨ	mokyamo	y-[19]

In the data above, for non-third person forms, there is a clear relationship between the forms of the pronoun and the object agreement morphemes. This might suggest that the incorporation agreement split predicted by Hale's analysis is evident in Hixkaryana.

The problematic case is *uro* where the pronoun form is *ro-*, the second syllable instead of the first as in the other cases. Notice though that for the pronouns in the singular form, *-ro* appears as the final syllable in five of the seven forms, and that *-yamo* (plural suffix) appears with all plural forms. The form *-ro* appears in the

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[19] Actually the forms may be more complicated than suggested below. The pronoun *kɨwro* (I+II) might be analyzed as being made up of kɨ (I+II) and *-ro* (singular) but *kɨ* is also the first person subject marker in intransitives with w- being the first person subject marker for copular sentences and ro- the first person marker for objects and possessors. Hence *kɨwro* could be *kɨ+w+ro* (all three of which are one form of the first person, respectively, intransitive S + copular S + direct object). Moving to the other form *omoro, mo-* seems related to the set of II person subject forms (*mɨ-*, *o-*, and *ow-*) and *omoro* could be analyzed as *o+mo+ro* or 2object+2subject+singular/1object. I thank David Pesetsky for calling my attention to the morphological form of Hixkaryana pronouns.

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plural only with III nondeictic, with -*yamo*- appearing as an infix. We might interpret -*ro* as something like a singular marker for pronouns and the form *uro* might be a late alteration of the simple *ro*-. Thus perhaps *ro* was the original first person pronoun and the agreement marker derived from it. We cannot give a detailed analysis of these facts but they are at least suggestive. Hale's analysis assumes that in Hixkaryana third person forms trigger agreement while non-third person inflection is formed by incorporation. It is interesting then that the non-third person forms *look like* reduced forms of the corresponding pronouns while the third person form does not. Of course many languages have agreement markers which *look like* pronouns and there are often gaps in the paradigm where a particular agreement marker does not *look like* its corresponding pronoun. If the analysis could be augmented, the Hixkaryana pattern seems supportive of Hale's analysis (and the analysis of Hixkaryana agreement/incorporation in Alexander, 1988).

Thus, in principle there could be ways to distinguish inflection deriving from agreement from inflection deriving from incorporation. Hixkaryana suggests that such study might be rewarding but Hixkaryana is extremely rare in the combination of (i.) having a distinction in person on cooccurrence possibilities; and (ii.) showing a parallel difference in the relation between pronoun and inflection morpheme form. So, though one could imagine being able to directly test Hale's correlation of cooccurrence possibilities with the

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agreement/incorporation distinction, cases even as clear as Hixkaryana are not to be commonly expected.

This leaves us in the position, induced by practical concerns, of not being able to distinguish incorporation from agreement. Because of this, Hale's correlations listed above (complementary distribution with incorporation, cooccurrence with agreement) cannot be directly tested.

Earlier in this chapter we discussed the extension of the argument language/adargument language distinction to Navajo. We noted that the Navajo paradigm below could be explained by appeal to Jelinek's hypothesis that adargument languages assign thematic-roles to agreement morphemes rather than to NPs:

(47) a. tl'óół y-ee   (Navajo, Athapaskan)   (Hale, 1988; 4)
         rope   3-with
         'with a rope'

     b. y-ee   (ibid.)
        3-with
        'with him/her/it'

     c. *tl'óół   ee   (Ken Hale: pc)
         rope   with
         ('with a rope')

In Navajo, the agreement morpheme (y- in the examples above) is obligatory and the NP (tlóół above) is optional. We can account for the three examples in (47) through Jelinek's proposal but there is a case that Jelinek cannot account for.

(48)   *y- ee   tlǫǫɫ   (Ken Hale: P.C.)
       3-with rope
       ('with a rope')

In (48) we have an unacceptable case where the object of the
adposition follows the adposition.   Within Jelinek's analysis there is
no reason to expect this form to be unacceptable.   Recall that Jelinek
proposed thematic-role assignment to agreement clitics to account
for Warlpiri free word order.   As discussed in chapter 2, there are
fixed word order effects in hyper-rich agreement languages.   We
assume that agreement clitics are the obligatory arguments and are
assigned thematic-roles (and perhaps Case if Jelinek is correct) from
the lexical head, whereas NPs receive their thematic-roles by virtue
of being coindexed with theta-marked agreement clitics.   In Chapter
3 we briefly discussed the claim that the Path Containment Condition
might regulate the relationship between agreement clitics and NPs
but there is no PCC-theoretic explanation for the data in (48) either.

We know, however, that agreement clitics are prefixal in
Navajo.   If they receive thematic-roles, we know that thematic-role
assignment is right to left, as in a head-final language.   If we assume
that Navajo is head-final *and*   assigns thematic-roles to the left, we
can account for the data in (48).   We cannot fully analyze Navajo
with Jelinek's assumptions *unless* we add the condition that Navajo is
head final, which could in the unmarked case follow from the fact (or
determine the fact) that Navajo assigns its thematic-roles to the left.

This raises the question whether all languages which assign thematic-roles to the left are head final. In our brief discussion of Kpelle (following Travis, 1987) in Chapter 1, we required the assumption that that language assigned thematic-roles to the left but assigned Case to the right. This accounted for the fact that subjects and direct object appeared before the verb while the indirect object PP followed the verb. In principle, then, there could be a language just like Navajo, assigning thematic-roles to the left (like an OV type language) but having the lexical head preceding its NP object (i.e., being head-initial or VO type)..

VSO Yagua seems to fit this description. Reviewing the facts of Yagua, for the simple cases of subject, objects of postpositions and genitive possessors, an NP may precede an uninflected head or follow an inflected head but an NP may not precede an inflected head:

(49) a. sa-junoonú   a'. sa-viimú   sa-X
          3-mother   3-inside
          'his mother'   'inside it'

      b. sa-junoonú Pedro   b'. sa-viimú jumuñu sa-X NP
          3-mother Pedro   3-inside canoe
          'Pedro's mother   'inside the canoe'

      c. Pedro junoonú   c' jumuñu viimú   NP X

      d. *Pedro sa-junoonú d'. *jumuñu sa-viimú *NP sa-X
          ('Pedro's mother')   ('inside the canoe')

Concentrating on just the cases where an agreement clitic appears (forms a, c-d and a', c'-d'), the pattern is very similar to

Navajo. Yagua is VSO (and perhaps underlying SVO see below), and hence a VO type language, a head-initial language, which should assign thematic-roles to the right. Note however that clitics are prefixal in Yagua, which, if we are to analyze Yagua in Jelinek's terms, would entail that thematic-roles are assigned to the *left*. Making the assumption, then, that Yagua is head-initial—natural for a VO language—but that thematic-roles are assigned to the left—natural for an adargumental language with prefixal clitics—we can explain the data above. In (49a) the agreement clitic (*sa-*) receives a thematic-role from the head which selects it. In (49b) the thematic-role is assigned to the agreement clitic (as in 49a) but there is an optional adjunct NP as in Navajo. This adjunct NP must follow the lexical head since Yagua is head-initial. In (49d), we see that a non-theta-marked NP cannot precede the lexical head—we know that it is non-theta-marked because the inflection receives the θ-role. This example is parallel to the example from Navajo discused above (**y-ee tlóóʈ*, '3-with rope', where the optional NP appears on the 'wrong' side). Thus the stipulation that adargument languages have a headedness parameter separate from its θ-marking directionality parameter (suggested for Kpelle by Travis, 1987, and motivated above for Navajo) accounts for ungrammatical example in (49d) **Pedro sa-junoonú*. This leaves us the final case (49c) where there is no agreement clitic and where the NP precedes the head which selects it. Can we provide an analysis of these facts?

We may motivate the analysis of this case with reference to Dogrib. Recall that in Dogrib, unlike Navajo, there is the option of having an agreement clitic or an overt NP. Both the agreement clitic and the NP were on the same side of the lexical head:

(50) a. Johnny [ye-t'à pp]   det'o nà- i-   t'a
         Johnny 3-with   duck ADV-PERF-cut
         'Johnny cut up the duck with it.'

     b. Johnny [mbeh t'à pp]   det'o nà- i-   t'a
         Johnny knife with   duck ADV-PERF-cut
         'Johnny cut up the duck with the knife.'

     c. *Johnny [mbeh ye-t'à pp]   det'o nà-   i-   t'a
         Johnny knife 3-with   duck ADV-PERF-cut
         ('Johnny cut up the duck with the knife.')

Yagua seems to have the Dogrib option of satisfying the selectional properties of lexical heads with either agreement morphemes or full NPs. Like Dogrib, when thematic-roles are assigned to NPs, the NP appears on the side of the head to which thematic-roles are assigned. This is natural, of course, since the alternative would require that thematic-role assignment could be one direction for agreement morphemes and another for NPs. This is in principle possible but the most restrictive theory would reject this possibility until clear data forces the conclusion.

Reviewing the present analysis of Yagua XP structure. We have assumed that thematic-roles may be assigned to either agreement morphemes or NPs (as in Dogrib) but that when thematic-roles are

assigned to agreement morphemes and an NP appears, its position must be consistent with a separate head-parameter (as in Navajo) which may specify a direction different from the direction of thematic-role assignment, much like in Kpelle.

The assumption that thematic-roles are assigned to agreement morphemes in Yagua is very helpful in understanding how a child would come to learn Yagua. To see the problem, assume that thematic-roles are not assigned to agreement morphemes in Yagua. The child must deduce the direction of thematic-role assignment. What is the data which the child may use? A piece of data the child might consider is the fact that the language is VSO or SVO. This would suggest, without contradictory evidence, that θ-role assignment would be to the right. Direct evidence of θ-role assignment to NP is difficult for the child to find since NPs may appear before or after a lexical head (*sa-viimú jumuñu*, '3-inside canoe' or *jumuñu viimú*, 'canoe inside') or not at all (*sa-viimú*). There are thus two types of data which the child might use to determine thematic-role assignment to NP with one (the general pattern of the language as VO), suggesting rightward θ-role assignment and the other (the distribution of NPs) suggesting that θ-role assignment may be by turns leftward or rightward. This piece of data would also lead to the incorrect conclusion that NPs may be freely ordered in Yagua (cf. **jumuñu sa-viimú*, canoe 3-inside). The assumption that θ-roles are always assigned to NPs suggests problems for the child learning Yagua.

The analysis we are suggesting does not raise the acquisition problems discussed above. The child may learn the leftward direction of θ-role assignment from the fact that agreement morphemes are prefixal. The crucial piece of data would be a form like (*sa-viimú*, 3-inside, inside it) where the thematic-role is assigned to the prefixal agreement clitic to the left. Thus θ-role assignment is non-problematic for the child. Data for the fact that the language is head initial (VO-type) could come from a number of sources, as shown by Payne (1986), such as the fact that auxiliaries precede the main verb and that sentence particles like negation and question words are sentence initial (reasoning à la Greenberg, 1966). More direct evidence is the existence of forms such as *sa-viimú jumuñu* where a presumably non-θ-marked adjunct NP follows the lexical head.[20]

A very similar pattern of data can be seen in another (unrelated and geographically very separate) Amazonian VSO language, Guajajara (Harrison:1986). Harrison notes that Guajajara presents problems for simple theories of directionality (such as

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[20] We should note of course that the adjuncts discussed here are not adjuncts
in the familiar sense. If Jelinek is correct, the optional NPs in Navajo,
Warlpiri and the post-head Yagua NPs are adjuncts but they are part of a theta-
chain which is itself argumental (deriving from a subcategorized thematic-
role). This has the implication that we need not expect a Yagua adjunct which
inherits a subcategorized thematic-role to behave like an English adjunct
which does not receive a subcategorized thematic role. It seems to us that this
point has been often misunderstood. Jelinek-type adjuncts have a clear
argumental status, they are resumptive on familiar grammatical functions
such as subject and object, but they do not bear these grammatical functions
themselves. From the point of view of theta-theory, there is a large difference
between Jelinek-type adjuncts and adjuncts in the English sense—so much so
that using the same term for them is probably misleading.

Greenberg, 1966) since it is VSO but has postpositions (VO but OP) and genitives precede their nominals, an OV property rather than a VO property.[21] Examples follow with the postposition in (51) and the genitive-noun order in (52):

(51)   yŋu?a-pupc
        mortar-in
        'in the mortar'

(52)   i-kyhaw
        3-hammock
        'his/her hammock'

On the other hand, Guajajara has other properties of a VO language, for example inflected auxiliaries follow the main verb and in comparative constructions the order is the VO consistent adjective-marker-standard:

(53) a.   a-ha   putar   ihe nehe kury
           1sg-go   want:FUT I   FUT   now
           'I want to go now' (Harrison, 1986;   410)

     b.   Ø-uhua?u wera?u i-zuwi a?e
           3-big   more   3-than 3
           'He is bigger than him. (ibid., 412)

Like Yagua, however, Guajajara has prefixal agreement markers (which Harrison, 1986, 412, points out is a VO characteristic):

(54) a.   w-esak

---

21 There are also implications for X̄-theory and the category neutral base hypothesis, see Stowell, 1981, and Farmer, 1984.

3-see
'He saw it'

b. he-r-esak
1sg-3-see
'He saw me' (Harrison, 1986, 412)

In our analysis, we derive the interesting result that the prefixing character of the VSO languages (generally a VO pattern) is what causes the unexpected OV properties. The agreement morphemes are prefixal and thus θ-marking is leftward to the agreement morphemes. In the complementary distribution cases theta-marking (still leftward) is to the full NP in the absence of the agreement clitic. Thus, in an adargument language, having a VO property (prefixal inflectional and derivational affixes) leads directly to the OV properties of having postpositions and the order genitive-nominal. We find this a very encouraging result since it makes sense of two languages (Yagua and Guajajara) which as Harrison (1986) and Payne (1986) point out, are counterexamples to previous theories of typology.

Thus as we are claiming for Yagua, Guajajara has θ-role assignment to the left while being head initial. Categories with agreement clitics behave like OV language categories while categories without agreement act like VO language categories. Agreement clitics receive θ-roles and this provides evidence to the child that such categories are OV-like but the basic pattern of the language as VO is not changed for those categories without agreement morphemes. The underlying specification of the languages is head-

final and the child modifies this conclusion only for those categories which have prefixal agreement morphemes, the categories for which easily comprehended data are available; that data being the position of the agreement clitics themselves.

We thus have the beginnings of an analysis of Yagua within a modified Jelinek-style analysis which is independently motivated and predictable from Navajo, Dogrib and Guajajara.

Returning now to our alternative analysis of Yagua, in terms of leftward theta-role assignment and right-headedness. The facts we must explain are as follows: (1) some nominal must be in prehead position; (2) if that nominal is an agreement clitic, another nominal may appear, but only in posthead position. Assume that the complementary distribution is between the overt NP appearing in prehead and posthead position. The agreement marker may (as in Navajo) or may not be base generated inside the head X^0.[22]

(55)

```
              P
             / \
           /    \
        AGR      P        or          P
         |       |                    |
        sa-    viimú                viimú
```
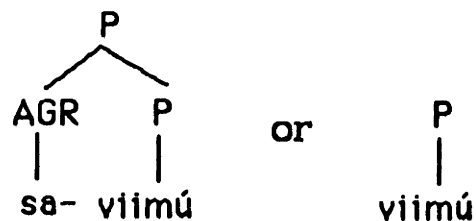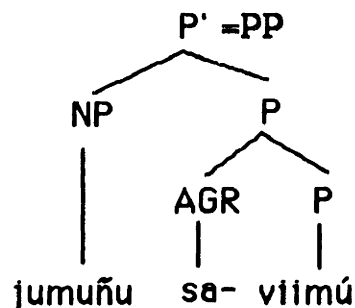
As we know, if the first option is chosen, an NP may only appear after the head where as if the second option is taken, the NP

---

[22] Not theoretical significance is attached to the category label AGR; that is we are not implying that it is a structural position.

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may only appear before the head.   Taking the first option, assume that we attempted to generate an NP in prehead position as follows:

(56)

```
          P' =PP
         /      \
       NP         P
        |        /  \
        |      AGR    P
        |       |     |
     jumuñu    sa-  viimú
```

The NP (*jumuñu*) must be licensed in some way.   If it is coindexed with *sa-* (parallel to Navajo), it is licensed but its position is fixed as postverbal.   Since the object is not licensed by the verb through theta-marking, it is an adjunct and since Yagua is head-initial, this adjunct must appear after the head in conformance with the licensing condition on adjuncts.[23]   Given this, and supposing that this is the D-structure, the NP must raise, yielding the structure below:

(57)

---

[23] Note that the NP *jumuñu* is coindexed with the X^0 *sa-* but its antecedent (*sa-*) does not c-command it—in fact, were *sa-* to c-command the NP, a Condition C violation would result.

$$
\begin{array}{c}
\text{PP} \\
\diagup \quad \diagdown \\
\text{P'} \qquad \text{NP}_i \\
\diagup \quad \diagdown \qquad | \\
\text{NP}_i \qquad \text{P} \qquad | \\
| \quad \diagup \diagdown \quad | \\
| \quad \text{AGR}_i \quad \text{P} \quad | \\
| \qquad | \qquad | \qquad | \\
t_i \quad \text{s\textschwa-} \; \text{viimú} \; \text{jumuñu}
\end{array}
$$
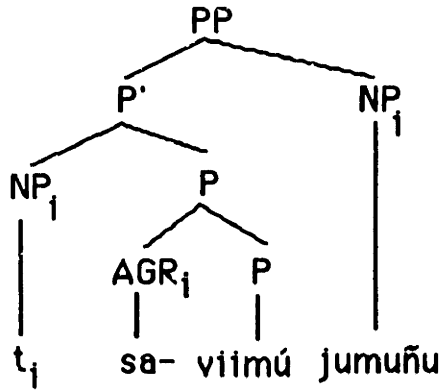
In this postverbal position, the adjunct NP is licensed. it receives its thematic-role from the clitic by virtue of coindexing (motivated for Navajo).

Another way for the NP to appear is if *sa-* is not present, beginning with the second option discussed above and reprinted below:

(58)

$$
\begin{array}{c}
\text{P} \\
| \\
\text{viimú}
\end{array}
$$

In this case, the head must have an argument and there is no clitic to discharge the thematic role. To save the structure, we again generate an NP, as below:

(59)

$$
\begin{array}{c}
\text{P' =PP} \\
\diagup \quad \diagdown \\
\text{NP} \qquad \text{P} \\
| \qquad | \\
\text{jumuñu} \quad \text{viimú}
\end{array}
$$

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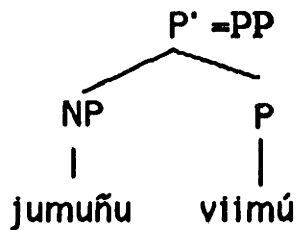
In this case, the head licenses the NP by theta-marking just as it would license *sa-*, to the left.
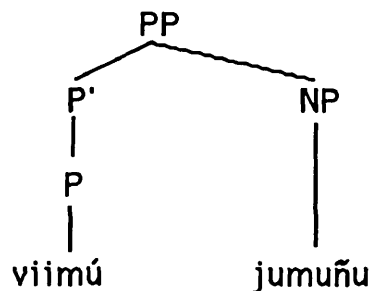
We could not start with (58) and place the NP in the adjunct position as immediately below because the head could not discharge its thematic-role:

(60)

```
              PP
          ___/  _____
         P'              NP
         |               |
         P               |
         |               |
       viimú          jumuñu
```

This accounts for the impossibility of *viimú jumuñu; we have also accounted for (i.) *jumuñu sa-viimú which fails because the adjunct NP is not licensed in its adjunct position; and (ii.) *viimú which is excluded because the head does not discharge its θ-role. We can correctly generate the 3 grammatical cases: (i.) sa-viimú, with sa- licensed by the head à la Jelinek; (ii.) jumuñu viimú with jumuñu being licensed by leftward theta-role assignment; and (iii.) sa-viimú jumuñu with leftward theta-assignment licensing sa- and jumuñu being licensed to the right as an adjunct.

Turning now to the direct object cases, consider the ₒₗₗₒ.ing data (Data from Everett, 1988; 1, and Payne, 1985):

(61) a. Pauro puuchu-nii   V-nii
         Paul carry- 3O
         'Paul carries him/her'

     b. Pauro puuchu Anita   V   NP
         Paul carry Anita
         'Paul carries Anita'

     c. sa-puuchu-nii Anita   V-nii NP
         3S-carry- 3O Anita
         'he/she carries Anita'

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e. sa-puuchu Pauro-nii Anita   V NP$_{subj}$-nii NP$_{obj}$
   3S-carry   Paul-   3O   Anita
   'Paul carries Anita'

f. *sa-puuchu Pauro Anita   *V NP$_{subj}$ NP$_{obj}$

g. *sa-puuchu-nii Pauro Anita   *V-nii NP$_{subj}$ NP$_{obj}$
   3S-carry-   3O   Paul-   3O   Anita
   ('Paul carries Anita')

Taking the facts separately, in general the agreement clitic and the NP are optional, though at least one may appear. The clitic is obligatory if the verb is separated from the direct object by intervening material, such as the subject. Finally, the agreement clitics show two properties unlike the other pieces of inflection we have seen in Yagua: (i.) they are suffixal; and (ii.) they need not attach to the lexical head (i.e. they may appear on any category preceding the direct object).

Taking these last two facts, might it be possible to reduce them to one fact consistent with the other examples we have discussed in Yagua? Consider the two possible structures of (61c) *sa-puuchu-nii Anita*:.

(62)

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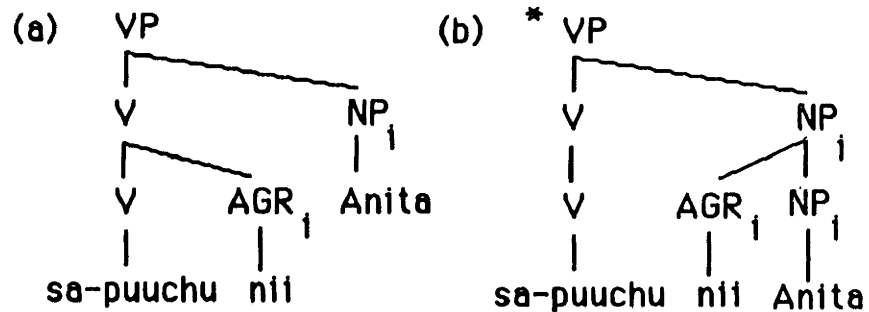
Given that the direct object clitic precedes the direct object, it could in principle attach to either the constituent immediately preceding the direct object or to the direct object itself. This later option (62b) is presumably blocked for several reasons, first by the binding theory since the object clitic adjoined to the object NP would bind the direct object R-expression (a Condition-C violation); second, because adjoining an X^0 clitic to an NP would violate the condition on structure preservation (see Chomsky, 1985a); and, finally by the i-within-i condition since the two elements are coindexed as the representation in (62b) shows,. Assuming then any of these accounts explain why the direct object clitic cannot attach to the direct object itself, it follows that the direct object clitic must attach to the category immediately preceding the direct object, including the verb, the subject or some other category.

The two unique facts about the direct object clitic listed above (that it is suffixal and attaches to any category) can be reduced to the claim that the direct object clitic must precede the direct object. We can reduce this further by asking why the direct object can appear on the same side of the verb as the direct object clitic, separating the direct object cases from the other cases already discussed where the clitic was on the opposite side of the head than the adjunct.

We can provide a satisfactory answer to why (i.) direct object clitics are suffixal; and (ii.) direct objects can appear on the same side of the head as their associated agreement markers by consideration of the facts of Yagua subjects:

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(63) a. Pauro puuchu Anita
Paul carry Anita
'Paul carries Anita.'

b. sa-puuchu(-nii) Anita
3S-carry 3O Anita
'He/she carries Anita.'

c. sa-puuchu Pauro-nii Anita
'Paul carries Anita.'

d. *Pauro sa-puuchu(-nii) Anita
('Paul carries Anita.')

e. *puuchu(-nii) Anita
(' e carries Anita.')

Like the postpositional cases, exactly one nominal must precede the verb. This nominal may be either the agreement marker (*sa-*) above or an overt NP. If an agreement marker appears, then the NP may follow the verb, and support the direct object clitic.

Recall the structure we assumed for adpositional phrases in Yagua, reprinted below:

(64)

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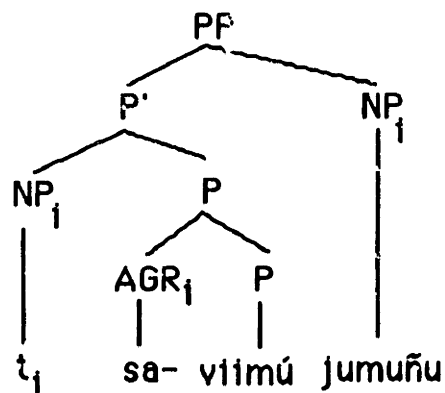
We required two NP positions because of the possibility of a prehead or posthead NP appearing. With direct objects, we also get two nominal elements. If we assumed the subject cases were parallel to the adposition cases we would have to generate the following farfetched structure:

(65)
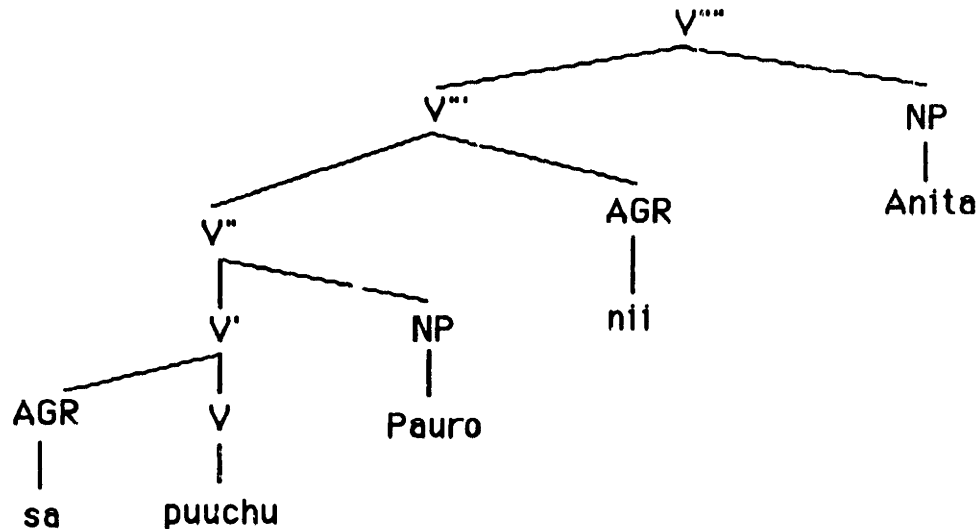
It seems rather unlikely that such a VP should be permitted in the grammar. An alternative is to assume, as has been argued for many VSO languages (e.g., Sproat, 1983), that verb movement occurs to derive the VSO word order. This leads to a much simplified structure which solves the problems with the subject and direct object cases. Assume the following structure:

(66)

```
                          C'
                   ┌──────┴──────┐
                   C             IP
                   │         ┌────┴────┐
                  V+I    Spec, IP      I'
               ┌───┴──┐    │        ┌──┴──┐
              AGR    V+I   NP_j    Infl    VP
               │      │    │        │   ┌───┴───┐
               │      │    │        t   V      NP
               │      │    │         ┌──┴──┐    │
               │      │    │        AGR    V    │
               │      │    │         │     t    │
               │      │    │         │          │
              sa-  puuchu Pauro    -nii       Anita
               └──────────────┘     └──────────┘
```
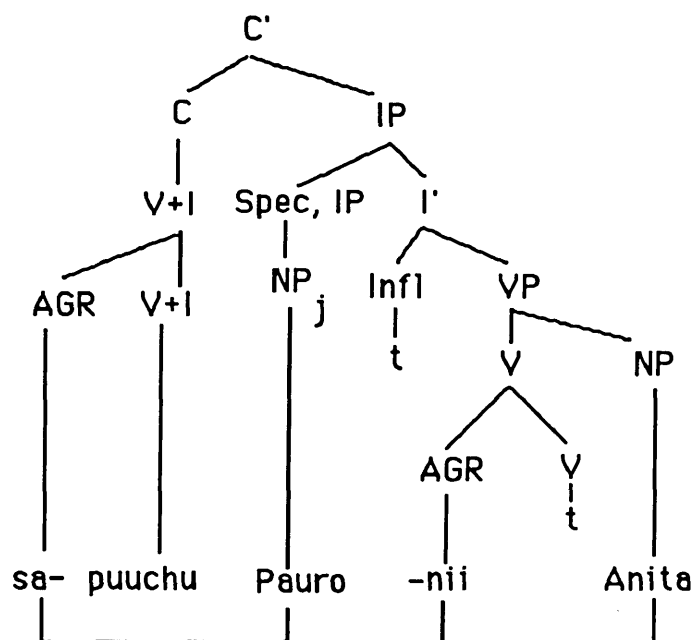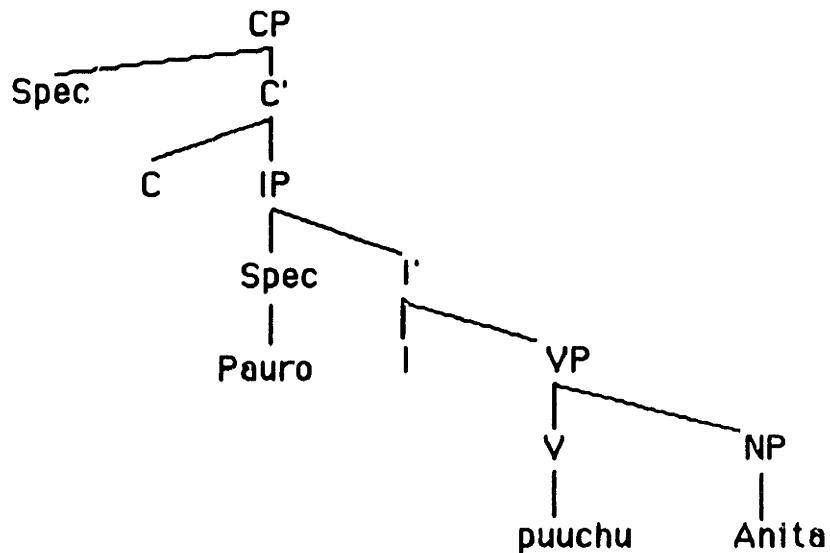
We assume verb raising to C (from V to I to C) to generate the VSO order and to get the subject in the government domain of the verb (see, for example, Sproat, 1983). We want the postverbal subject to be licensed in the same way as the postadpositional NP. If we assume movement, we do not have to assume that the direct object clitic is a suffix since whether it is a prefix or a suffix, verb raising does not (appear to be able to) take the direct object agreement marker along. We have independently motivated the fact that the direct object clitic appears on the constituent preceding the direct object (since it cannot attach to the direct object itself). So, we can then assume that the direct object clitic begins as a prefix like the other agreement markers in Yagua. Under the analysis the direct

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object cases are totally regular in their behavior as compared to the inflection which appears on the other heads in the language.

Going over this again. The underlying structure is SVO, as follows:

(67)

```
                    CP
          _____|
      Spec         C'
                 __|
               C    IP
                   _|____
                Spec      I'
                 |       _|_____
               Pauro    I        VP
                                 _|_____
                                V        NP
                                |        |
                              puuchu   Anita
```
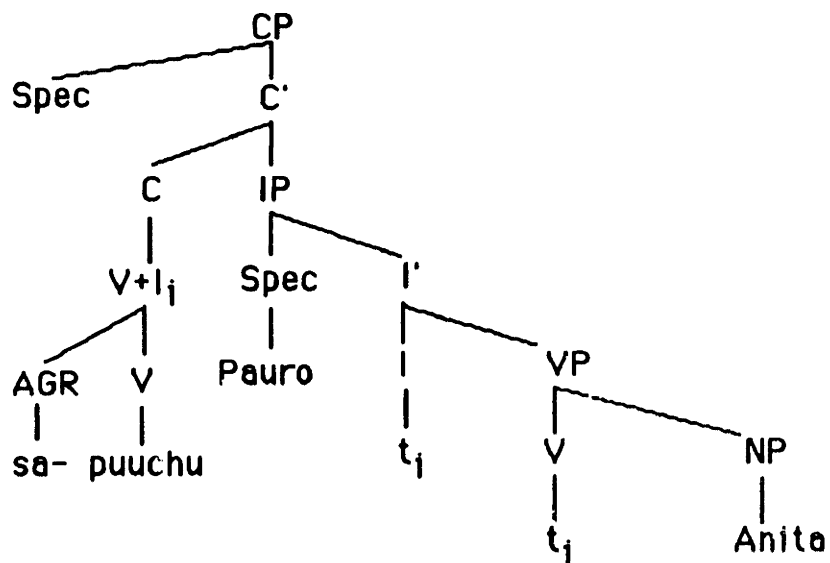
The verb will raise to I (INFL) to get tense. The V+I complex may remain in I and license the subject by leftward theta-marking as in any other constituent, or else they may license an agreement marker (sa-). If the thematic-role is assigned to sa-, then the subject may not be licensed from the right, as we expect. This forces raising of the V+I complex to C, where it can license the subject to the right.[24] The only complication being that the subject does not appear as a right constituent in VP, presumably because V has merged with
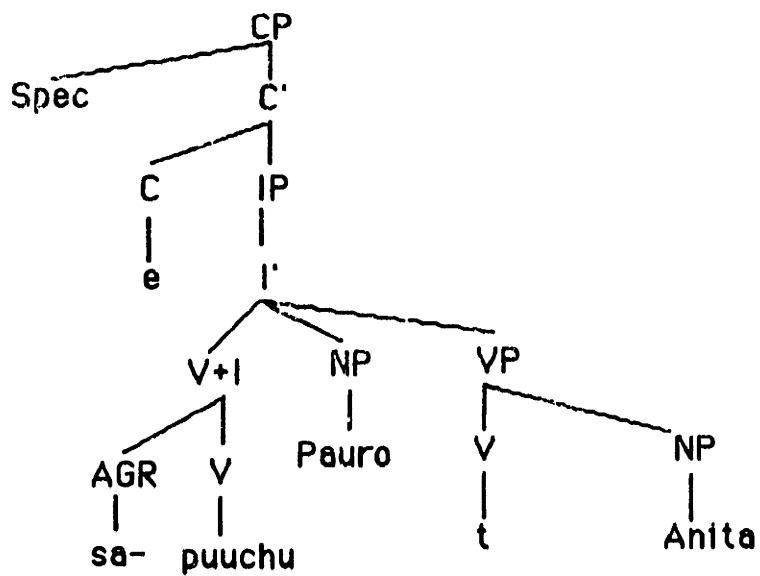
---

[24] We have been unspecific in specifying the internal structure of the V+I complex. It is unlikely that anything will hinge on this.

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Infl. Thus, the subject occupies a position in IP, which is natural since its licensing category is V+I. There are two possible structures:

(68a)

```
                        CP
              _____/  |
          Spec           C'
                      __/  \__
                    C         IP
                    |       _/  \__
                  V+I_i   Spec      I'
                 _/  |     |      _/  \__
               AGR   V   Pauro   I       VP
                |    |           |     _/  \_
               sa- puuchu        |    V      NP
                               t_i   |       |
                                    t_i     Anita
```

(68b)

```
                        CP
              _____/  |
          Spec           C'
                      __/  \__
                    C         IP
                    |         |
                    e         I'
                         ___/ | \____
                       V+I   NP       VP
                     _/  |    |     _/  \_
                   AGR   V  Pauro  V      NP
                    |    |         |       |
                   sa- puuchu      t      Anita
```

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The form in (68b), perhaps surprisingly, is the structure that makes the subject cases seem more like the postposition cases since the NP adjunct subject shares a maximal projection with the licensing head. Alternately one could assume the structure in (68a) which has the V+I raising to C. Adopting this analysis would force us to assume that the licensing relation between the head and the adjunct is not headedness but another relation, perhaps Case. Structure (68b) requires no added assumptions and it is the form we will assume to be correct.

4.6 A Hale-type Analysis of Yagua

How might Hale analyze Yagua. We will focus just on the postpositional phrase cases, which should give us an indication of how a Hale-style analysis might work.Unlike the cases Hale considers in Yagua both an agreement morpheme and an overt NP may appear in Yagua but the appearance of the agreement marker limits the positional possibilities of the NP. It would be insufficient to adopt an analysis which places the agreement marker (sa-) in the same position as the overt NP at D-structure, such as the position preceding the lexical head:

(69)

PP
├── NP
│   │
│   (jumuñu)
│   (sa-)
└── P
     │
    viimú
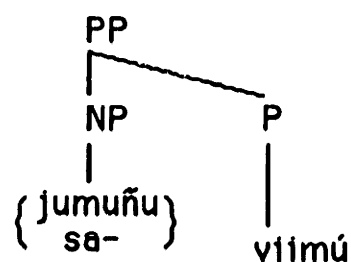
This structure would allow us to generate either *jumuñu viimú* or *sa-viimú* and would avoid the ungrammatical **jumuñu sa-viimú* but could not generate the acceptable *sa-viimú jumuñu*. Given that there are two nominals in Yagua, Hale must assume two nominal position which are coindexed. Coindexing is required to rule out a form such as that in (70):
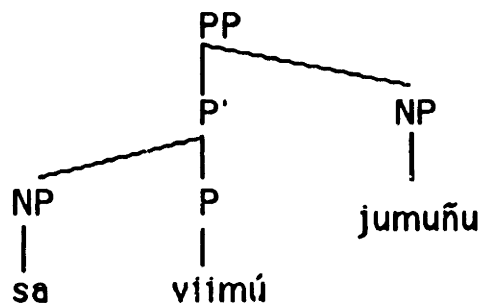
(70) *sa_i-viimú jumuñu$_k$
3- inside canoe
('inside it, inside the canoe')

In our analysis, we can rule out (70) by the claim that the adjunct is theta-dependent on the clitic (a claim built into our Jelinek-style way of thinking about non-configurational languages). For Hale, however, generating two nominal positions which are coindexed is simply *ad hoc* it seems to us since his analysis provides no explanation of why these positions should be linked. Conceding then that Hale can generate these two coindexed positions, how would he handle the postpositional phrase examples?

We know the second position can contain an NP which is coindexed with an agreement clitic and that the reverse is not true. Thus in a structure like *sa-viimú jumuñu, sa-* and *jumuñu* are coindexed. The NP *jumuñu* is an R-expression and so cannot be bound. The agreement marker is pronominal (whether a pronoun or an anaphor we cannot say) and can be bound. The grammaticality of *sa-viimú jumuñu* shows that it is not a violation of Condition C of the
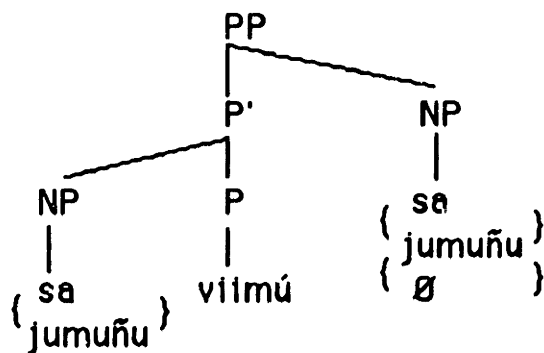
Binding Theory and thus *jumuñu* is not c-commanded by *sa-*. This fact determines the following D-structure configuration:

(71)

```
                PP
                |‾‾‾‾‾‾‾‾‾‾‾‾‾
                P'            NP
          |‾‾‾‾‾‾            |
        NP      P         jumuñu
         |      |
        sa    viimú
```

If we assume that such a structure is accurate, we can develop an analysis along the lines of Hale's analysis by assuming that these two positions can contain the full range of nominals complements, Ø, agreement markers or NPs, as follows:

(72)

```
                PP
                |‾‾‾‾‾‾‾‾‾‾‾‾‾
                P'            NP
          |‾‾‾‾‾‾            |
        NP      P          { sa     }
         |      |          { jumuñu }
       { sa     } viimú    { ø      }
       { jumuñu }
```

This theory seems to overgenerate a great deal but Binding Theory will filter out all but one ungrammatical cases. Case by case:

(73) sa-viimú   jumuñu
     3-inside   canoe

This case is acceptable and the theory generates it since it is possible to generate any two NPs and there is no Binding theory effect.

(74) *jumuñu viimú sa
     canoe   inside 3

This case is unacceptable but may be excluded as a Condition C violation since *sa-* would c-command and bind *jumuñu*.

(75) *jumuñu viimú jumuñu
     canoe   inside canoe

This unacceptable case is also a Condition C violation since the second NP binds the first.

A case which cannot be excluded by Binding theory follows:

(76) *sa-viimú sa   or sa-viimú-sa
      3-inside 3

Our only recourse here is to say that *sa* is inherently a prefixal clitic and cannot survive as a single word. This would extend to *jumuñu viimú sa* or *jumuñu viimú-sa* discussed above as a Condition C violation.

Is this theory acceptable? This proposal is not out of the question but it does tend to take much of the interest out of Hale's proposal. If we can only save Hale's theory for Yagua by Condition C we may wonder what it is about Yagua that Hale's analysis can explain. The only way to get complementary distribution for the

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prehead position and appearance of a posthead NP is to freely generate NPs in both positions, relying on Binding Theory to sort out the incorrect cases. Though this analysis generates the correct cases, it does it in an almost underhanded way since it does not address the central question it raises: is it really possible to freely generate multiple NPs which are associated with only one position in the theta-grid of a head, leaving Binding Theory to exclude the unacceptable cases? The answer to this question must be 'no'—for a reason familiar from theta-theory: there is no reason to generate more NPs than can be accommodated by the argument structure. Of course, apart from elegance and intuition, there is no reason *not* to freely generate multiple NPs, letting the Binding Theory sort out the ungrammatical cases. What then is at issue between our analysis and Hale's?

4.7   Two Alternative Views

We must make two assumptions in our analysis. First, we must assume that NPs which are not directly licensed by the head (by, say, θ-marking) must be licensed as adjuncts by that head. This is not surprising. Even if the agreement morpheme can provide Case and thematic-roles to the NP by transference, the head still controls the elements which enter into its maximal projection XP and the NP not directly licensed by the head must still have its appearance registered by the head. This condition might be true of all languages permitting NPs and agreement morphemes (including Navajo and

Warlpiri, for example) or it may be language specific (including, for example, Yagua and perhaps Hixkaryana). In any event it is reasonable to expect that at least some languages have such a requirement. We assume Yagua is one such language.

The second assumption we have made in our analysis is that a single language may assign thematic-roles to NPs or to agreement clitics. Though perhaps less parsimonious than the conclusion that a language could assign to NPs or agreement clitics but not both, we should not be surprised if this assumption is correct. This assumption is quite natural if we believe the following: (1) Jelinek is correct in assuming thematic-role assignment to agreement morphemes and NPs as adjuncts in some languages (which seems strongly supported by Navajo); (2) Hale's superficial characteristics of non-configurationality are the major data of non-configurationality; (3) Navajo and Dogrib do not differ with respect to the superficial characteristics; (4) Dogrib cannot be analyzed as always assigning thematic-roles to agreement clitics. Believing the four claims above leads us to propose an analysis which maximizes the similarities between Navajo and Dogrib. Since we cannot claim that Dogrib always assigns thematic-roles to agreement clitics, we assume that the complementary distribution facts suggest that Dogrib has the option of thematic role assignment to clitics, perhaps even that it is the favored strategy.

We may contrast our system with Hale's directly. We believe that Jelinek is essentially correct in the claim that agreement

elements receive thematic-roles and that this explains the relevant superficial characteristics of non-configurationality. We believe, as in Alexander (1986), that languages with agreement for subject and direct object are almost always non-configurational in the sense of Navajo {having extensive null anaphora, lacking pleonastics and lacking NP movement transformations}. We believe Irish to be configurational on the basis of its being [-Agreement, -Case] in the sense of the case/agreement distinction in chapter 3. We consequently believe that Irish cannot assign thematic-roles to NP (or, at least, that is a marked strategy for Irish) and hence that the similarities between Irish and Dogrib claimed by Hale are merely accidental. As for the advantages of our proposal, we believe first that it makes sense of the typological curiosities of Yagua and Guajajara discussed in Payne (1986) and Harrison (1986) by explaining why agreement marked categories behave like OV language categories while non-agreement marked categories behave like VO language categories. We believe our analysis is independently motivated by Dogrib, Navajo and Kpelle and we believe that we can account easily for how a child might come to learn the originally surprising agreement facts of Yagua: from prefixal agreement clitics, they learn leftward theta-marking and from the VO character of the language as VSO, they learn that the language is head-initial and hence that it licenses adjunct NPs to the right. Finally, we believe that our general approach (case/agreement) strongly predicts languages of the Yagua type,

since adjunct NPs are predicted by our theory in general (following Jelinek) and Travis' (1987) independently motivated claim that the direction of theta-marking may be different from the direction of licensing of adjuncts [that is that there are separate headedness and theta-marking directional parameters].

Hale analysis by contrast has two apparent strengths. First, it is able to capture the similarities between Irish and Dogrib. As we have shown, researchers committed to Jelinek's theory of non-configurationality cannot find this attractive, except at the cost of classifying Dogrib and Irish as equally (non-)configurational, a move with unattractive consequences. Secondly, Hale's analysis appears able to explain why VSO languages can have complementary distribution between subject inflection and overt subjects while non-VSO cannot. From the point of view of a Jelinek or case/agreement analysis of non-configurationality which treats NPs as adjuncts, it would be surprising if the same government relations for NPs obtained in both configurational languages such as Irish and in non-configurational languages such as Yagua. In §5.2, however, we show that this apparent advantage of Hale's analysis is illusory. We show a language which is not VSO but which has complementary distribution between subjects and subject inflection, and we show for this language that it cannot have the same locality condition on subject incorporation as Irish.

Reviewing the weaknesses of Hale's system; first Hale's theory is essentially circular in that it correlates complementary distribution

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with incorporation but the only evidence for incorporation is the complementary distribution itself. The same argument goes through with respect to agreement. Secondly, Hale's analysis does not predict the existence of languages like Yagua since the complementary distribution of an NP and an agreement morpheme does not suggest that the NP is free to surface elsewhere. Third, Hale's analysis excludes an analysis of non-configurationality which treats agreement markers as argumental and NPs, when they appear, as adjuncts. This is not to say that this analysis is necessarily true (we have shown arguments against such a view in this work) but proponents of Hale's analysis must provide an alternative view of non-configurationality which can explain the superficial characteristics of Hale (1982).

4.8 Multiple Nominals in Italian and Hopi

Having proposed a theory of multiple nominals in Yagua, we now consider two other languages which also permit multiple generation of nominals and, in particular, we consider whether the analyses of these languages can be extended to Yagua in place of our analysis.

A analysis along the lines we suggested as a Hale-type analysis of Yagua may be motivated by consideration of the structure of Hopi (Uto-Aztecan) as analyzed by LaVerne Jeanne (1978).

First, Hopi shows the NP/inflection cooccurrence pattern previously demonstrated for Hixkaryana, with cooccurrence with

third person forms and complementary distribution with non-third person forms:

(77) a.   taaqa-t poʔko-ʔat mooki
            man-OBL dog-3   die
            'The man's dog died.'   (Jeanne, 1978; 105)

      b.   *taaqa-t poʔko mooki
            man-OBL dog   die
            ('The man's dog died.')   (Ken Hale: p.c.)

      c.   poʔko-ʔat mooki
            dog- 3 die
            'His dog died.'   (Ken Hale: p.c.)

(78) a.   wiʔti   taaqa-t   ʔa-mim timalaʔyta
            woman man-OBL   3-with work
            'The woman is working with him.' (Jeanne, 1978; 104)

      b.   *wiʔti   ni-y   ʔini-mim timalaʔyta
            woman me-OBL 1-   with work
            ('The woman is working with me.') (Ken Hale: p.c.)

      c.   wiʔti   ʔini-mim timalaʔyta
            woman 1- with   work
   'The woman is working with me.'   (Ken Hale: p.c.)

In (77), all third person examples, the inflection on the adposition is obligatory (*ʔa-mim* vs. **mim*) and the NP is optional, as in Navajo. In (78), however, we see that, again, the inflection on the adposition is obligatory (*ʔini-mim* vs. **m im*) but the NP is obligatorily absent (**ni-y ʔini-mim* vs. *ʔini-mim*). Thus, Hopi inflection shows the same sensitivity to person found in the Hixkaryana cases and, in fact, these cases like exactly like Warlpiri's

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with an inflected adposition (*?a-mim*) appearing with a third person nominal (*taaqa-t*, man).

Across categories, Hopi has a different construction more similar to a topic-comment structure which initially seems reminiscent of the Yagua *sa-viimú jumuñu* type construction, for example, in (79), the overt direct object NP appears in a sort of topic position:
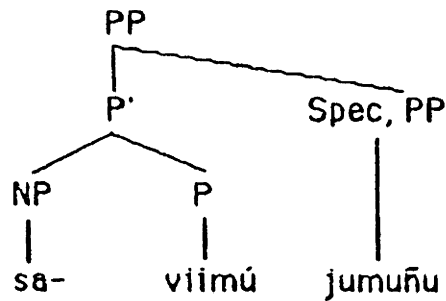
(79)   <u>mi? tiyo?ya</u>ᵢ, ni? <u>pi</u>ᵢ- t   tiwi?y<u>ta</u>

        that boy,   I   him-OBL know:sg
        'That boy, I know him.'   (Jeanne, 1978; 319)

In (64), there is object number agreement between the verb *(tiwi?yta*, singular, vs. *tiwimi?yta*, non-singular) and the direct object position is filled with a case marked pronoun, while the case-less "overt NP" appears in what Jeanne assumes to be a Spec or Topic position, with a structure as follows:

(65)

```
                    S"
               _____/\_____
          Specₛ            S'
            |           ___/\___
            |         Comp       S
            |                 ___/\___
            |               NP        VP
            |               |       _/\___
            |               |      KP     V
            |               |      |      |
        mi? tiyo?ya        ni?    pi-t   tiwi?yta
        that boy            I    him-OBL know
```

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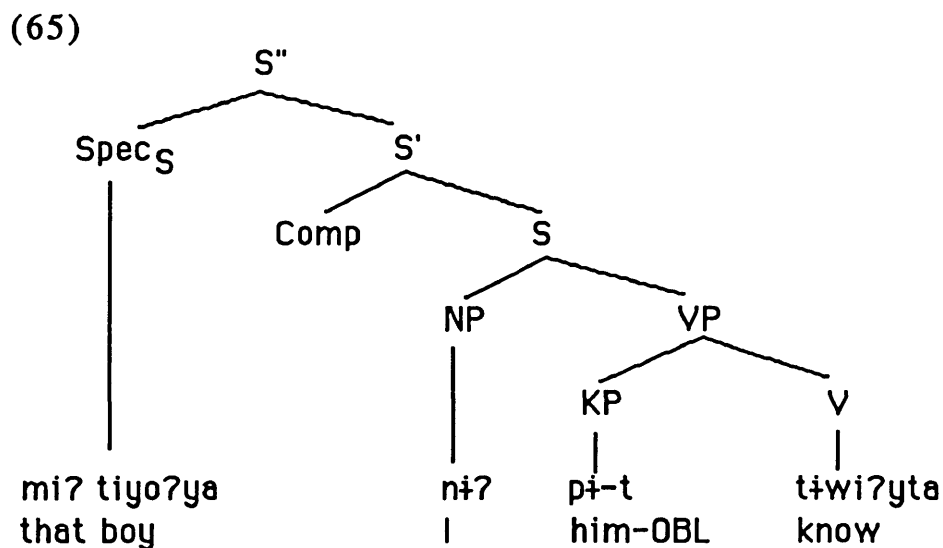
In this case, we have to have the option of generating a pronoun in the subcategorized direct object position and a full NP in a Spec position. We might wonder why this is not possible in Yagua, with the following structure for a sentence.

(80)

```
            PP
          ┌──────────────────
          P·              Spec, PP
        ╱    ╲              │
      NP       P            │
      │        │            │
     sa-     viimú       jumuñu
```

The post-head NP (*jumuñu*) would behave like the topic NP in (80) in Hopi. In Hopi, the direct object pronoun acts like a real argument, it receives case, and the NP in SPEC is not case marked. As in Yagua, it is not possible to generate an overt NP in the direct object position and in the SPEC position, hence (*mi? tiyo?ya, ní? mi? tiyo?ya-t tíwi?yta*, that boy, I know that boy) just as *jumuñu viimú jumuñu* is unacceptable in Yagua—and this does suggest that reference to Condition C of the Binding Theory might not be unnatural for Yagua. Can we show that Jeanne's analysis of Hopi does not extend to Yagua?

First, the details of Jeanne's case is not particularly clear. For example the two types of constructions we have considered, the case with a left-dislocated direct object and the postposition construction, are different from one another. In the left-dislocated example, the

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overt full NP (the boy) is not case marked and the oblique case marker appears on a pronoun. In the postposition example, the overt NP is case marked and the "pronoun" appears, non-case marked, as a clitic on the postposition itself. This construction is parallel to the corresponding case in Navajo and Hixkaryana, which we analyzed with the assumption of thematic-role assignment to the agreement clitic. The left dislocated example is presumably parallel to the English construction of the same form "That boy, I like him" or, to take Jelinek's example "He, the doctor, tells me, the patient, what to do." In this example, we assume that the pronouns are the overt arguments and the full NPs are adjuncts. The Yagua cases do not have the force of left dislocation examples (see Payne, 1986, and Everett, 1988) and thus seem distinct from the Hopi cases.

The underlying issue is still salient, is there a reason why we can't assume multiple generation of NPs to account for Yagua—abstracting over the difference between the left-dislocation interpretations in Hopi which do not appear in Yagua. We may still rely on the arguments given against Hale's analysis above, and point to the strength of our analysis, but there is an analysis of Italian which raises the multiple nominal point in a stronger form than Hopi does.

The analysis, due to Brandi and Cordin (1988), discusses two Northern Italian dialects and shows how these dialects differ from standard Italian. In these dialects, spoken in Trentino and

Fiorentino, the standard null subject effects of Italian seem to be missing. Hence: Brandi and Cordin (1988, 111-112)

(81) a. Parli   Standard Italian (SI)
         '(You) speak'

     b. *Parli   Trentino (T), Fiorentino (F)

     c. Tu parli   (F)
         'You speak.'

     d. Te parli   (T)
         'You speak.'

     cf. Tu parles   (French)   *Parles
         'You speak.'   '(You) speak.'

The pronouns in (c-d) above have the characteristics of clitic pronouns, being unaccented and required to appear adjacent to the verb. The clitics have the property of appearing with regular pronouns and overt NPs.   (*ibid.*, 113)

(82) a. Te tu parli   (F)
         You you speak
         'You speak.'

     b. Ti te parli   (T)
         You you speak
         'You speak'

     c. Mario e parla   (F)
         Mario he speaks
         'Mario speaks.'

     d. El Mario el parla   (T)
         the Mario he speaks
         'Mario speaks.'

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cf. *Jean il parles   (French)
     John he speaks
     ('John speaks')

In this case, the two dialects do not behave like French, where
an NP cannot cooccur with a subject clitic pronoun without a left
dislocation intonation contour. It is possible to show, very clearly for
Fiorentino, that the sentences above are not left-dislocation
examples, which have a very different form in Fiorentino: (*ibid.*,
114)

(83) a. Te,   e   tu   parli   troppo
          You, TOPIC you speak too much
          'As for you, you speak too much.'

      b. La Maria, e   la   parla   troppo
          The Mary, TOPIC she speaks too much
          'As for Mary, she speaks too much.'

Another distinction between French and the two Italian
dialects is in the possibility of free subject inversion. As noted in
Chomsky (1981), Burzio (1986), and Rizzi (1982), non-null subject
languages only permit subject inversion with ergative verbs and
indefinite NPs, while null subject languages do not show these
restrictions. As noted by Brandi and Cordin, the facts for English,
French and standard Italian follow:

(84) a. Sono venute delle ragazze.
      b. There arrived some girls.
      c. Il est venu des filles.

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(85) a. É ventua Maria.
b. *There arrived Mary.
c. *Il est venu Maria.

(86) a. Hanno telefonato delle ragazze.
b. *There telephoned some girls.
c. *Il a telephoné des filles.

The two Italian dialects do permit free subject inversion.

(87) a. Gl'è venuto delle ragazze. (F)
b. É vegnú qualche putela.   (T)

(88) a. Gl'è venuto la Maria.   (F)
b. É vegnú la Maria.   (T)

(89) a. Gi'ha telefonato delle ragazze. (F)
b. Ha telefoná qualche putela.   (T)

Brandi and Cordin propose the following structure for sentences of Trentino and Fiorentino:

(90)
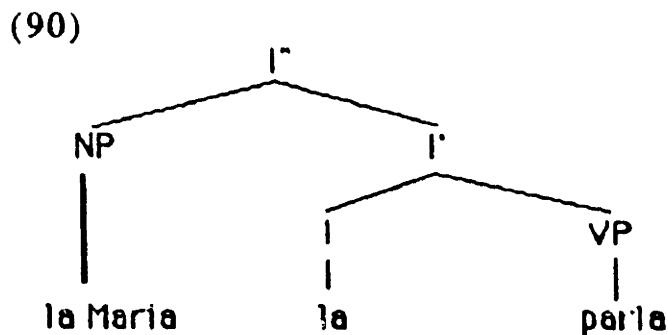
The clitic pronoun la is a "spelling out of AGR". As with other Italian dialects, the subject NP can be pro, generating the grammatical "pro la parla". Might we be able to extend this analysis to Yagua?

Again, it appears that the answer is 'no'. If we assume that a clitic such *sa-* ('third person') is a spelling out of the features of Yagua AGR, we would be led to expect that it would be obligatory, like its Trentino and Fiorentino counterparts. In fact, we can show (1) that *sa-* is not obligatory and that (2) Yagua does not seem to have *pro* with the following familiar data.

(91) a. jumuñu viimú
         canoe   inside
         'inside the canoe.'

     b. *pro   viimú
                inside
        ('inside it.')

We know that it is possible to generate the sequence NP P in Yagua without *sa-*, or a spelling out of AGR—in fact, such a spelling out would lead to an ungrammatical string (*jumuñu sa-viimú). Further, we know that it is not possible to substitute *pro* for the lexical subject in (91a). If there were a *pro* in Yagua, if Yagua were a null-subject language in the Italian sense, we would expect (91b) to be grammatical, paralleling *Parli* in Standard Italian. An alternative would be to assume that *pro* is limited to cases where a clitic appears but this is not true of standard Italian and could only be stipulated for Yagua. Such a condition is also only trivially true of *pro* in the two Italian dialects since the clitics are obligatory. It does not seem possible to extend the analysis of the Northern Italian dialects to Yagua in any straightforward manner.

It might be possible, however, to extend the analysis of these dialects to Navajo type languages where the agreement clitic is obligatory but this would only add the unwarranted positing of *pro* in Navajo which seems not particularly helpful as discussed in Chapter 1. We have accounted for the Navajo facts already with the stipulation of theta-assignment to agreement clitics. The Brandi-Cordin data essentially state this as "a spelling out of AGR". In a language with *pro*, it is appropriate to think of agreement clitics as AGR, but for languages without *pro*, from a theta-theoretic point of view, it seems to make more sense to assume thematic-role assignment to the agreement clitics. Though this may seem to miss possible generalizations between Navajo and the Northern Italian dialects, it does make sense of the typological data from non-configurationality.

4.9 Conclusions

We began this study with an exploration of word order. We suggested there that two of the largest contributing factors to word order were case marking and theta-assignment. With the issue of configurationality, however, we faced a challenge to the theory of word order which we were developing because of the existence of non-configurational languages. Jelinek suggested there were two types of languages: those which assigned theta-roles to agreement markers and those which did not but this claim faced two difficult problems related to the work of Ken Hale (1989). Hale called

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attention to mixed cases, like Dogrib and Irish, which did not show the two way distinction predicted by Jelinek. Further, Hale's analysis of these languages led to the result that all such middle cases were configurational since his system based generated agreement morphemes and full NPs in the same positions to which they were presumably assigned their theta-roles. Hence, Jelinek's analysis could not be true if Hale's was correct.

In this chapter, we have argued against Hale's analysis and proposed that some of Jelinek's distinction can be kept: we argue that there are languages which assign thematic-roles to clitics and that this was essentially the defining characteristic of a type of grammatical system called non-configurational—a system largely defined by Hale's (1982) superficial characteristics of configurationality.

In the next chapter we attempt to do three things. First we will consider the apparently quite complicated facts of Hixkaryana 'portmanteau' agreement which was analyzed in Alexander (1988) as supporting Hale's incorporation/agreement distinction. We now argue that Hale's analysis cannot account for the facts of Hixkaryana. Secondly we will consider Canela-Krahô, an Amazonian SOV language with complementary distribution of subject NPs and subject inflection (a property which Hale's assumed to be limited to VSO). We will argue that Canela-Krahô undermines perhaps the most attractive aspect of Hale's theory, the claim that such complementary distribution is limited to VSO because of the special relation between

verbs and subjects in VSO. Finally, we will review the material here, focusing on the questions 'what if anything is non-configurationality' and 'what is the relation between Irish agreement and Dogrib agreement'.

Chapter 5

Incorporation and Locality

5.1 Path Containment in Hixkaryana

In this section, we discuss an analysis of apparent 'portmanteau' agreement in Hixkaryana (Carib) derived from our own Alexander (1988) and based on Hale's analysis of incorporation and agreement. We will argue that the original Alexander (1988) arguments mistakenly claimed that these facts supported Hale's analysis.

Portmanteau agreement is agreement which uses a single morpheme to simultaneously reference the person of the subject and of the direct object. Portmanteau agreement is to be contrasted with simple subject agreement, as in Spanish (1a), or subject and object agreement as in Warlpiri (1b):

(1) a. Yo habl-o   Spanish (Indo-European, Romance)
'I speak-1s'
'I speak'

     b. ka- rna-ngku nya-nyi   Warlpiri (Pama-Nyungan)
'PRES-2S- IO   see-NONPAST'
'I see you'

     c. w- enyhoretxehkan   Hixkaryana (Carib)
'1S3O- finished making
'I finished making it'

Portmanteau agreement presents problems for analyses such as that in Chomsky (1989) in which agreement is a structural relation between syntactic positions (between subject and AGR and between object and AGR-O). We will argue that a maximally simple account of

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Hixkaryana agreement assumes that Hixkaryana verbs agree with a single nominal (i.e., does not manifest portmanteau agreement) and that the Path Containment Condition of Pesetsky (1982) discussed in Chapter 3 accounts for which nominal argument triggers agreement.

Consider the agreement morpheme mi- which Derbyshire (1979, 1985) assumes to be IISIO, IISIIIO in transitive clauses and IIS in intransitives and copular clauses. We would claim that mi- is IIS and that IIS triggers agreement when acting on IO or IIIO: Derbyshire's portmanteau paradigm follows in (2) while our proposed paradigm follows in (3):[1]

(2)   Portmanteau Person Marking Prefixes (Derbyshire:1985)

Obj Subj	I+II	II	I	III	Intrans Subj	Copula Subj
I+II				ti-	ti-	ti-
I		ki-		i- w-	ki-	w-, i-
II			mi-	mi-	mi-, o-, ow-	man-, m-
III	ki-	o-	ro-	ni- y-	ni-	ni-

▓▓ requires reflexive form

(3)   Subject and Object Agreement Clitics

Subject forms	Object forms
1s: ki-	1o: ro-
2s: mi-	2o: o-
3s: ni-	3o: y-
1+2s: ti-	1+2o: ki-

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[1] See note 3 for a discussion of the I+III subject agreement which is omitted here.

Support for our claim that there are distinct subject and object sets of agreement prefixes comes from the fact that the proposed object set in (3) is identical to the agreement prefixes used to mark nominals:

(4)   Person marking of nominals
       rowani (my chest) ro-owa-ni
       oyowani (your chest) o-owa-ni
       Waraka yowani (Waraka's chest) y-owa-ni
       kowani (our [Incl] chests-) ki-owa-ni

This correlation would be surprising if Hixkaryana had true portmanteau agreement and we will assume that Hixkaryana agreement is always with a particular nominal. Consequently, we will need to posit some method of selecting which argument will be the trigger of agreement. We will assume the following as an accurate statement of the facts any analysis of agreement must explain, derived essentially from Derbyshire's paradigm in (5):

(5)   Hixkaryana Agreement (Initial Formulation)
       a. Where subject is I, II, or I+II assign subject agreement
              else if object is I, II, or I+II assign object agreement
       b. else (3-3 Agreement)
              Assign y- if direct object precedes verb.
              or   Assign n- if subject precedes verb.
                 else Assign ni- elsewhere.[2]

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[2] The two rules for allomorphs of n(i) are needed because of a class of cases where deletion of both 3Subject and 3Object agreement markers occurs before a verb-stem-initial consonant. In such cases, there is an apparent epenthesis (or reinsertion) of n- if the subject is the NP immediately preceding the verb (to avoid ambiguity since such a preceding NP could be the object and verbal agreement cannot distinguish in this case); see Derbyshire, 1985, and Alexander, 1985a.

A rule which simply stated the facts above would presumably be far too difficult for the child to learn. We will attempt to reduce (5) to (6):

(6)   Hixkaryana Agreement (Second Version)
   A verb agrees with the closest subject or object.

Notice that though (5) is particularly complicated, a great deal of the complexity comes from the fact that 3rd person is deficient in its agreement. Subject agreement is clearly dominant over object agreement when both of the arguments is I, II or I+II. If III subject were dominant over non-III objects, the rule would be much more simple. Certainly 3rd person is often deficient in its expression in the agreement paradigm in the world's language but these deficiencies rarely lead to complexity in the agreement paradigm of the Hixkaryana type. Might be there be a difference between III and non-III arguments from which the agreement complexities follow? We believe that independently motivated differences in incorporatability of III and non-III arguments is the basis of the agreement pattern. In Hale's analysis coocurrence of inflection with an NP will be evidence that incorporation of the inflection did not occur. Recall the facts of inflected postpositions in Hixkaryana?

(7)   a. n-oseryehyaha biryekomo (*uro) ro-hana
         3s-is afraid   boy   I   1-   to
         The boy is afraid of me'

      b. [(*omoro) o-min] y-awo-hra   w-ahko
            you   2-house 3- in- neg   1s- was
         'I was not in your house'

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In (7a), we see that a first person pronoun cannot cooccur with inflection on the verb (this true for I, II, and I+II) but in (7b) the third person 'your house' can cooccur with inflection on the postposition 'not-in'. Thus, following Hale we assume that syntactic incorporation occurs for non-3rd person and agreement occurs for third person.

Tentatively assume that this incorporation is constant across categories, N, P and V for example (see, on this point, McCloskey and Hale, 1984). Thus, when a IO occurs with a IIIS, the IO will incorporate while the IIIS will remain in situ, as in structure below. [Note the adargument language structure we are assuming for now]:[3]

(8)
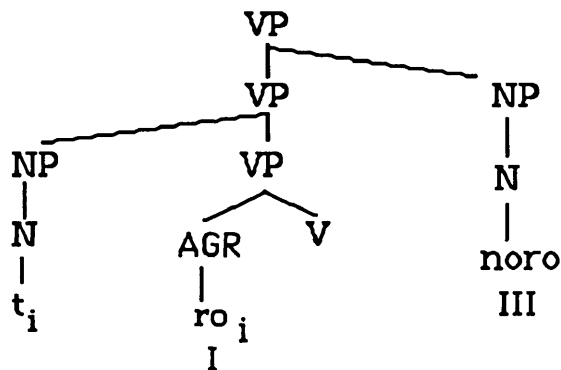
In a case where one pronoun incorporates and another does not (i.e. is third person) as above, we predict correctly that the incorporating pronoun will be closer to the verb and hence trigger

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[3] Hixkaryana has a I+III form which I have suppressed to this point. In this case there is a III subject clitic (ni) and the 1st person pronoun amna appears immediately preceding the verb. even when there is an overt direct object. It seems reasonable to assume that incorporation occurs here since the subejct pronoun amna appears in a position where a normal subject pronoun or full NP is impossible, between the direct object and the verb. One might have proposed that only one element was allowed to incorporate into but I+III shows the overt appearance of two pronominal elements in V. We will discuss this in more detail with reference to Panare.

agreement. This accounts for the apparent dominance of I, II and I+II (the incorporating pronouns) over III (the non-incorporating pronouns).

Consider now the case where both object and subject are incorporating (are I, II, I+II). As we have seen, in this case, agreement is always with the subject. Do we need to state subject dominance over object as a primitive fact about Hixkaryana or are we able to explain this? Consider the possible structures:

(9) (a)
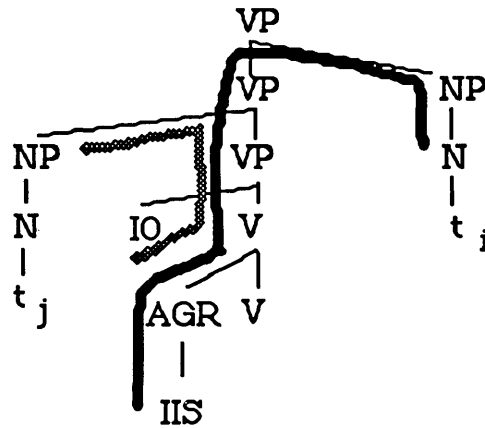
(b)
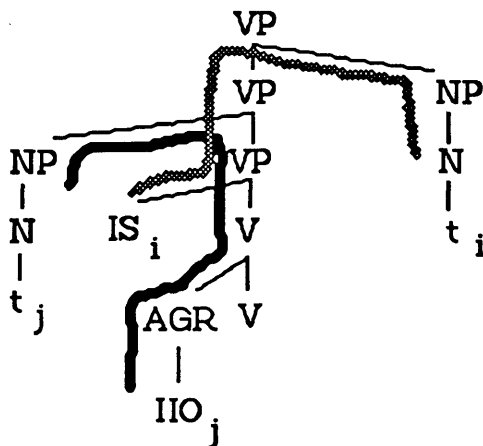
In (9a) the subject pronoun incorporates first, followed by the direct object clitic. The subject pronoun would be closer therefore, and trigger agreement. The reverse order of adjunction (9b) would result in object agreement. The structure in (9a) is to be preferred since incorporated subjects always trigger agreement even in the presence of an incorporated object. Is there are principled way to accept (9a) but exclude (9b)? In fact, Pesetsky's (1982) Path Containment Condition derives this result.
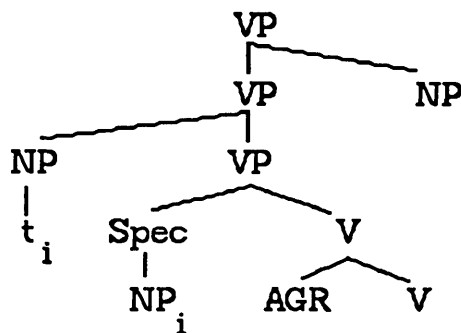
(10) Path Containment Condition
If two paths overlap, one must contain the other.

In (9a) the path from the incorporated direct object pronoun to the direct object position (containing a trace) lies along the path from the incorporated subject pronoun to the subject position. The subject and object paths overlap, but the subject path contains all of the object path, consistent with PCC. This is not the case in (9b) where the object path and the subject paths overlap but neither path contains the other. The subject path, for example, only contains one link of the object path. Thus, the PCC properly distinguishes cases (9a-b). In cases where both subject and object are incorporating pronouns, PCC correctly predicts subject agreement. Thus, subject dominance over object need not be independently specified.

Finally, consider the cases of agreement where neither argument has an incorporated pronoun (the 3-3 agreement cases). We assume that the position immediately preceding the verb is somehow special, and closer to the verb than other NPs, perhaps as a function of

this position being the Specifier of the category VP. Thus, objects in Spec of VP will be closer than subjects adjoined to VP (as below):[4]

(11)

```
                    VP
                    ┌─────────────
                    VP           NP
        ┌───────────┘
       NP           VP
        │         ┌──────────
        t        Spec        V
         i        │         ╱──────
                 NP       AGR     V
                  i
```

The direct object moves into Spec of VP and triggers agreement. When there is no direct object, the subject may occupy Spec of VP and trigger agreement. The only remaining case is where there is no NP is Spec of VP and no pronoun adjoined to V, hence no trigger of agreement. Here AGR lacks an index and agreement surfaces as third person subject agreement which is presumably the default case universally.

To summarize, inflected adpositions and nominals in Hixkaryana suggest an asymmetry whereby non-III pronouns incorporate into heads while III pronouns do not. If we generalize this to verbs, we predict that incorporated pronouns when they surface with non-incorporated arguments will be nearer to the verb (or AGR) and,

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[4] Once again I+III subject is suggestive. The order OSV is blocked unless the S is the incorporated pronominal **amna**. Thus, no NP may occupy a 'real position' between direct object and verb, suggesting that both direct object and subject 'compete' for the verb preceding position which we have assumed to be Spec. It might be more reasonable to start the direct object in Spec of VP. I have not done this because I am assuming Jelinek's analysis of rich agreement languages and because when the direct object is null, I do not want an empty category associated with the null direct object to block the subject's appearance in Spec.

hence, trigger agreement. In cases where both subject and object incorporate to the verb, the Path Containment Condition will correctly predict that the subject must incorporate first and hence be nearer to V (or AGR) and trigger agreement. Where neither subject nor object has an incorporated pronoun (3-3 agreement), agreement is with the element in Spec, which will be the direct object if it is non-null or in the absence of a direct object, the subject. When neither element is in Spec of VP, AGR fails to receive an index and predictably surfaces as third person subject agreement, the universal default.

Naturally the claim that Path Containment applies to clitics and their binders has many predictions for movement. Movement does provide support for the claim that PCC applies as we have suggested as discussed in Chapter 3. A case which does not rely on PCC suggests that the rule in (12) might be overly broad and may reduce to (12'):

(12) <u>Hixkaryana Agreement</u> (Second Version)
A verb agrees with the closest subject or object.

(12') <u>Hixkaryana Agreement</u> (Final Version)
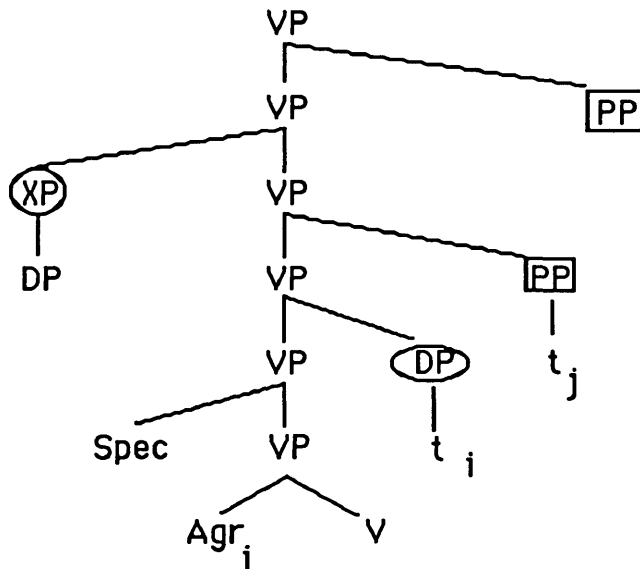A verb agrees with the closet nominal

The data come from copular clauses where the adjuncts must postpose if the subject fronts.

(13) a. n-ehxakoni toto   y-amotho   arkaxah   Ø-wawo
3subj-was man   3-hand of thing-vomited 3-in
'The man's hand was in the vomit'

b. toto   y-amotho n-ehxakoni, arkaxah   Ø-wawo
man 3-hand of 3subj-was   thing-vomited 3-in
'The man's hand was in the vomit'

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In (13a) arguments are in their usual position. In (13b) the subject has been fronted and postpositional phrase has been dislocated. For the sake of the argument, make the assumption that the subject cannot move to Spec of VP in copular constructions and, thus, moves to a position higher in the tree than its normal position.[5]

(14)

```
          VP
          |‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾
          VP                  [PP]
       ‾‾‾|
  (XP)     VP
   |      ‾|‾‾‾‾‾‾‾‾‾‾‾‾
   DP      VP          [PP]
        ‾‾‾|‾‾‾‾          |
        VP    (DP)      t_j
     ‾‾‾|‾        |
   Spec  VP      t_i
        ‾/\‾
     Agr_i   V
```

In its normal position the subject appears closer to the verb than an adjunct (such as an indirect object) but if the subject fronts to a higher position in the structure the adjunct will be closer to the verb than the subject which if (12') is correct will lead to agreement with the adjunct. Instead the adjunct dislocates to a position higher than the subject, in which case the subject is closer to the verb and triggers

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[5] A point we have assumed throughout becomes salient at this point. We must assume deletion if adjunct traces is possible following Lasnik and Saito (1984). In (13) the only indices remaining after deletion are those of the agreement clitic, the subject and the adjunct. None of the traces survive deletion, which would lead to a PCC violation.

agreement. If this analysis is correct, (12) would be redundant and we could reduce it to (12').

In conclusion, in Alexander (1988) we believed that Hale's analysis of incorporation of inflection and our extension of the Path Containment Condition to agreement prefixes provided a superior analysis of Hixkaryana 'portmanteau' agreement but there is an assumption in the above analysis which is untenable. In Hixkaryana 1st and 2nd person pronouns can not cooccur with coreferential agreement inflection, suggesting incorporation in Hale's system. But Derbyshire (1985, p. 8) reports that 1st and 2nd person pronouns can cooccur with subject (as in 15 below) and direct object inflection:

(15)   uro hakarha w-amaxe. Mawarye hakarha n-amekoni.
         I   in-turn 1S-fell.   Mawarye in-turn 3S-felled
         'Let me now take me turn at felling (trees). Manwarye
         in turn was felling trees. (Derbyshire, 1985; 253)

We were aware of this fact in Alexander (1988) but made the assumption that the evidence of incorporation in PPs and NPs should give rise to the assumption that incorporation occurred across categories. We did not appreciate that this assumption led to a totally ad hoc analysis. Hale's system correlates complementary distribution with incorporation and cooccurrence with agreement and Hixkaryana NP arguments (of all persons) can cooccur with inflection on the verb, hence Hixkaryana verbs show agreement with their NP arguments. But the analysis of Alexander (1988) which supports Hale's analysis can only derive the result by assuming incorporation onto V; hence that incorporation would have to be abstract. Positing such abstract

incorporation means that Hale cannot even maintain the correlation between cooccurence and agreement since coocurrence could arise by this abstract incorporation. Hence we reject the analysis is Alexander (1988) though the relative success of the analysis is suggestive.[6]

5.2 Subject Complementary Distribution in Canela-Krahô[7]

Thus far we have discussed complementary distribution in two types of XPs: (1)   categories where the head selected the argument inflected for; i.e., where simple head-complement relations obtained such as prepositions and their objects; and (2) between subject and subject agreement inflection in VSO languages where by hypothesis the verb properly governs the subject. This seemed natural since we were assuming that complementary distribution arises from head movement and we would expect that the movement would have to be subject to the Empty Category Principle.   In this section we will discuss a different type of subject/subject agreement complementary distribution in which, arguably, the subject is governed.

The language we will discuss is Canela-Krahô (an SOV Jê language of Amazonia) discussed in Popjes and Popjes (1986).[8]   In

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[6] It is possible that Hixkaryana permits cooccurrence in rare marked circumstances. Examples of cooccurence are extremely rare. We are not yet acquainted with the facts. If cooccurence can be shown to be limited to a marked set of circumstances, it may be possible to save the Alexander (1988) analysis. Even so we are left with the fact that in Hale's system the only evidence for incorporation is the complementary distribution with which is correlated and we really have no objective basis for claiming that incorporation has occurred in Hixkaryana.

[7] The discussion of Canela-Krahô has benefitted considerably by discussions with Moni Dressler and Brian Sietsema. I must acknowledge particular thanks to Neal Blatt who, perhaps unfortunately, has been tireless in his discussions of it.

[8] Canela-Krahô is a Jê language of Brazil.   Other Jê languages are Timbira, Apinaje, Xerente, Xavante and Kajapo.   There are approximately 2000 speakers of Canela-Krahô

Canela-Krahô transitive clauses, if there is a subject NP it appears in first position and is followed by a uninflected tense morpheme. If there is no NP, the tense morpheme appears in first position with a prefixal subject agreement proclitic.

(16) a. <u>wapo</u> te   i-xec
knife PAST 1-cut
'The knife cut me'

b. <u>it</u>-te   hũhkàr
1-PAST 3+buy
'I bought it'

The same complementary distribution between agreement and NPs appears with direct objects which may be represented as a verbal prefix (as in 17a) or as an NP:

(17) a. hũmre apu   a-cakwĩ
man CONT 2-beat
'The man is beating you'

b. hũmre te   rop cakwĩn
man   PAST dog beat
'The man beat the dog.'9

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in three separate groups separated by, at most, 200 miles with minimal social contact between the Canela villages (separated from each other by 30 miles) and the Krahô village, 200 miles southwest of the Canela villages. The phylum-level classifications of South-American languages are not clear (see Derbyshire and Pull:1986). Greenberg (1960) assumes a Ge-Pano-Carib family which would include Canela-Krahô with the Carib languages which include Hixkaryana, Apuriña, Apalai and other commonly mentioned Amazonian languages as well as the Panoan languages which includes Pirahã, a fairly well known Amazonian languages. Greenberg's classification is, however, probably overly optimistic.

9 Note the difference between **cakwïn** and **cakwï**. Verbs in Canela-Krahô have long forms and short forms with the long form(**cakwïn**) appearing, generally, with the (recent) past tense (as above) or when the verb stem is non-final in the verb phrase. See Popjes and Popjes (1986, §23) for details.

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The tense morpheme need not appear in literal 2nd position since, for example, a multi-part NP (as well as wh-words followed by subjects) can precede the tense morpheme:

(18) hũmre ata te   rop cakwĩn
      man   that PAST dog beat
      'That man beat the dog.'

In intransitives the subject clitic is still in complementary distribution with a subject NP but the subject clitic attaches to the verb and not to the tense morpheme, which must appear in first position:

(19) a. i-crer   (long form--see note below)
          1-sing
          'I sang'   (long form determines past)

      b. pê   ca cre   (short form)
          DISTANT PAST   2 sing   (ca= ind. pron.)
          'You sang (long ago)'

Another type of construction (or voice), called the pseudo-transitive by Popjes and Popjes (1986), involves merger of the transitive and intransitive forms we have previously discussed. The person prefix of the subject still may appear on the tense morpheme but the agreement prefix on the verb also refers to the person of the subject and the semantic direct object is demoted to an oblique argument:

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(20) a. a-te   po kam   a-catõc   (a = clitic pron)
        2-PAST deer at   2-shoot
        'You shot (at) the deer.'

    b. ca ha   po kam a-catõc   (ca = ind. pron).
        2 FUT   deer at 2-shoot
        'You will shoot (at) the deer.'

    c. i-te   a-mã i-cator
        1-PAST 2-to 1-arrive
        'I found you (arrived to you)'

Note that in (20b) the independent pronoun *ca-* is in complementary distribution with the subject clitic on the tense morpheme but a subject clitic (*a-*) coreferential with *ca-* can appear on the verb. The fact that the direct object must be demoted to oblique suggests (as was suggested in Chapters 1-2) that in adargument languages government by a lexical head is insufficient to license nuclear terms. If government were sufficient to license a direct object, we might expect a language with forms as follows:

(21) a. * a-te   po a-catõc
         2-PAST deer 2-shoot
         'You shot the deer.'

    b. * ca ha   po a-catõc
         2 FUT   deer 2-shoot
         'You will shoot the deer'

This is not to say that such languages cannot exist but rather that sentences of the form above would constitute evidence that government was a licensing relationship in that language.

The facts of Canela-Krahô seem initially to be very supportive of Hale's analysis in particular and Principles and Parameters in general.

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In Principles and Parameters, it is assumed that tense has a part in licensing subjects, by Case assignment. Of course, tense is not a lexical category in English and is considered deficient in many respects, one of which is that it cannot property govern subject position (see for example, Chomsky, 1981; 1985a, and others). This fact about tense will become significant in our discussion of Canela-Krahô and we will briefly focus on it. Such a lack of proper government by tense was the basis for generalization of the that-trace effect (Chomsky and Lasnik, 1977) to the Empty Category Principle. Consider the following classic contrast in G.B.:

(22) a. Who$_i$ do you think [S' t_i that [S Mark TENSE likes t_i?

b. *Who$_i$ do you think [S' t_i that [S t_i TENSE likes Mark t_i?

The simple fact is that extraction from a subordinate clause headed by a that is possible from direct object position but not from subject position. The explanation centers on one claim (that the *that* blocks antecedent government of a trace in the subordinate clause by the trace in Comp) and two asymmetries: the first being that NPs must be governed but empty categories must be properly governed; and the second that verbs properly govern (their direct objects) while tense does not properly govern (the subject). Hence, in (22a) the trace in object position is properly governed by the verb and the subject is governed by tense, predicting the sentence would be grammatical. In (22b), however, the direct object is governed by the verb (and

properly governed) but the trace in subject position is governed but not properly governed, as is required by the Empty Category Principle. and consequently (1b) is ungrammatical.

Interestingly, it was observed by Pearlmutter (1971) that null-subject languages such as Italian systematically lacked the that-trace effect:

(23) Chi$_i$ credi   [S' t$_i$ che [S t$_i$ verrà
      Who you-believe   that   will-come

Luigi Rizzi (1986) made an interesting claim that since null subject languages also generally had the property of permitting postverbal subjects (as in 3) that we could not distinguish the representation in (2) from the representation in (2'):[10]

(24) a le   brigate rosse hanno telefonato
         the brigade red   have phoned

      b. e$_i$ hanno telefonato [NP le   brigate rosse]$_i$
         ec have   phoned   the brigade red

(23') Chi$_i$ credi   [S' t$_i$ che [S [VP verrà t$_i$
       Who you-believe   that   will-come

If the representation of (23') was the correct structure, as Rizzi claimed, we could assume that the postverbal subject trace is properly governed by the verb. Rizzi went on to claim that all wh-movement in Italian originated in postverbal position and that, in fact, structures like (23=22b) are as ungrammatical in Italian as they are in English.

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[10] Note that a strong argument for non-configurationality is provided by non-configurational languages which lack free inversion such as, presumably, Navajo. It is unlikely that such a process could be motivated for Canela-Krahô.

This interesting proposal was convincingly supported by Brandi and Cordin (1989) who show that in the Trentino and Florentino dialects of Italian, unlike Standard Italian, preverbal subjects trigger agreement while postverbal subjects do not and further that moved wh-words do not trigger agreement in Trentino and Florentino as they do in standard Italian. This supports the claim that only wh-extraction from postverbal position is possible in these Italian dialects and by extension in standard Italian.

Given this background, we now return to Canela-Krahô. All of the assumptions made about Italian and English were predicated on the assumption that tense is not a proper governor. One might wonder however whether a lexical tense marker such as appears in Canela-Krahô might be a proper governor. The Hale would be able to make the claim that subject incorporation (complementary distribution) is possible in two types of circumstances: VSO because the verb properly governs the subject and languages like Canela-Krahô in which a lexical tense is a proper governor. Such an analysis would be very appealing and perhaps be strong enough to override the objections to Hale's analysis suggested in Chapter 4. Is tense a proper governor in Canela-Krahô?

The crucial facts, as the discussion of English and Italian might have suggested, will concern wh-movement. We have briefly seen two facts about Canela-Krahô. The first is that there is complementary distribution between NPs and agreement on lexical heads and, less obviously, every NP must be immediately followed by a lexical head—an

adjacency requirement that might suggest Case assignment for reasons familiar from §1.1. In intransitive sentences we have seen the order subject-tense-direct object-verb, as below:

(24) a. hũmre apu   a-cakwĩ
        man CONT 2-beat
        'The man is beating you' (Popjes and Popjes, 1986; 10)

     b. hũmre te   rop cakwĩn
        man   PAST dog beat
        'The man beat the dog.'   (ibid.; 11)

Consider a hypothetical case such as the following:

(25) Capi rop te   a-xar
     Capi dog PAST 2-bite
     'Capi's dog bit you.' (ibid.; 169,156)

If we were to form a subject wh-question such as 'whose dog bit you', we expect to derive the following form:

(26)   *[jũm jõ   rop] t_i te   a-xar
        who POSSN dog   PAST 2-bite
        'Whose dog bit you?' (ibid.; 156)

In fact the wh-extractions always appear with an extra element:

(27) a. jũm jõ   rop te   **mã** a-xar
        who POSSN dog PAST mã 2-bite
        'Whose dog bit you?' (ibid.)

     b. jũm$_i$ t_i te   **mã** ita   ton
        who   PAST mã DEM do/make
        'Who made/did this?' (ibid., 158)

This unexpected element *mã* has many uses in Canela-Krahô, notably as the indirect object marker and as a general postposition. Note that in (27a-b) *mã* does not appear in subject position (before tense) but, in fact, appears to be in indirect object position (after tense).

Another interesting use of *mã* is as a tense marker with stative predicates. The past tense marker (*te*) which we have seen several times marks habitual state while *mã* marks temporary state.

(28) a. i-te hĩpa
       1-HAB 3+fear
       'I live afraid of it.'

   b. i-mã a-kin
       1-TEMP 2-like
       'I like you (for now).'

Note crucially that object-wh extraction does not result in *mã* at all:[11]

(29)   jĩm₁ ca ha t₁ krẽ
       what 2 FUT eat
       'What will you eat?'   (Popjes and Popjes, 1986; 154)

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[11] Obviously one would like to know whether *mã* appears in adjunct extractions. A partial answer is given in the text though it may be too optimistic. Briefly Canela-Krahô uses two postpositions *rĩ* and *mã* which have broad and contrastive uses. Adjuncts such as directionals often have a surprising form such as *jũ rĩ rĩ* 'where to, specific' and *jũ kam mã* 'where to, general' and the contrasting *ampo na* 'why', *ampo na mã* 'emphatic why' and *ampo na rĩ* 'emphatic why'. There are several such contrasting cases (see Popjes and Popjes, 1986, 155-157) which we are not yet able to analyze. Popjes and Popjes do not discuss these issues in any detail; for example, the simply assume that a subject wh-word and *mã* form a discontinuous constituent, a position we believe misses an interesting insight.

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Mã also appears with adjunct wh-word words (marking objects which already bear a postposition identifying the NP as oblique) but it does not remain in situ. For example:

(30)   [jũ   kam mã]$_i$ Capi t_i mo
       where to   mã   Capi   go
       'Where is Capi going'

In (30a-b) the wh-phrase is completely fronted over the subject (i.e. mã does not remain in "indirect object position" after Capi in 30a).

We have seen three types of wh-extractions: of subjects where mã appears in a position that is demonstrably not subject position (subjects appear before tense but *mã* appears after tense); of objects where *mã* never appears; and of obliques where *mã* moves to Comp with the oblique which already contains a postposition. This constellation of facts might suggest a subject/object asymmetry and that is the approach that we will take.

First we will assume that subjects actually start a D-structure to the right of tense, probably inside the VP as below:

(31)   a. wapo te i-xec
           knife PAST 1-cut
           'The knife cut me'

       b. [IP e   [I' te   wapo i-xec]]
       c. [IP wapo$_i$ [I' te t$_i$ i-xec]]

There is an argument for this structure. The first is that it is the position of subjects in transitive clauses and we have already noted

that every nominal in Canela-Krahô must be adjacent to a lexical head. In intransitive clauses, the direct object appears adjacent to the verb and the subject must therefore relocate.

In transitive clauses it appears that the subject can be licensed by the verb and when the verb licenses the subject, the subject does not appear preceding tense. We also saw in the psuedo-transitive that a "demoted" direct object could not be licensed by a verb:

(32) a. a-te   po   kam a-catõc
        2-PAST deer at   2-shoot
        'You shot (at) the deer.'

     b. *a-te   po   a-catõc
        2-PAST deer 2-shoot
        ('You shot the deer.')

We argued earlier that this showed that if the verb did not license the demoted direct object it must be licensed by an oblique maker (such as kam.) Assume that the same is the case for an intransitive subject which is not licensed by the verb, as in a transitive clause:

(33) a. hũmre te   rop cakwĩn
        man   PAST dog beat
        'The man beat the dog.'

     b. *te hũmre rop cakwĩn
        ('The man beat the dog.')

In transitive clauses such as (32) will have the structure below:

(32') b. [IP e [I' te hũmre rop cakwĩn

c. [IP hũmre_i [I' te t_i rop cakwĩn]]

Consider a wh-extraction case from subject position; the obvious derivation follows:

(34) a. jũm jõ   rop te   mã a-xar
          who POSSN dog PAST mã 2-bite
          'Whose dog bit you?'

b. [CP e [C' [ ] [IP   [I' te wh a-xar]]
c. [CP e [C' [ ] [IP wh [I' te t_i a-xar]]
d. [CP wh_i [C' [ ] [IP t_i [I' te t_i mã ita ton]]

Even with the assumption that the verb cannot license the preverbal trace, for the familiar reason that heads seem to be able to only license one nominal in Canela-Krahô, this derivation does not provide an account of the appearance of mã however since the trace in preverbal position must be able to be licensed by its antecedent in subject position since this is the structure for all intransitive clauses. We might focus on the extraction of the wh-word from subject position to the adjacent Comp but it seems unlikely that antecedent government would fail to license the subject trace. We may, however, analyze these facts if we assume, following Rizzi (1986) and Brandi and Cordin (1989) that movement from subject position to Comp is not

possible in Canela-Krahô for the same reason that it is excluded in Italian.[12] We will make that assumption and exclude the derivation above.

Given the assumption that there is no short-extraction from Canela-Krahô S-Structure subject position, the appropriate derivation would be as follows:

(97) a. jũm jõ   rop te   mã a-xar
     who POSSN dog PAST mã 2-bite
     'Whose dog bit you?'

    b. [CP   e [C' [ ] [IP [I' te *wh* a-xar]]

    c. [CP *wh$_i$* [C' [ ] [IP *e* [I' te t_i mã ita ton]]][13]

The *wh*-word begins in D-structure subject position, where it is presumably assigned a thematic-role, and moves directly to Comp leaving a trace which cannot be properly governed. or, presumably, licensed in any way. A dummy postposition (*mã*) is then inserted to properly govern the trace. Alternately the wh word antecedent governs its trace and the postposition simply licenses the trace, perhaps by Case assignment or just to meet the Canela-Krahô requirement that nominals be followed by lexical heads.

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[12] Having said this, it is not entirely clear why short-extraction is excluded in Italian. We prefer not to appeal to Jaeggli's (1984) analysis favored by Brandi and Cordin since this would force positing a *pro* in Canela-Krahô; Luigi Rizzi 's suggests that rich AGR triggers a minimality effect on antecedent government (MIT lectures, 1986). Following this it might be that the lexical tense is sufficient to trigger a minimality effect without being sufficient to license the trace—analogously to rich AGR in Rizzi's view.

[13] Note that we assume that the Extended Projection Principle (Chomsky, 1982) is satisfied in this structure since the clause does have a subject and our analysis of Navajo suggests that a subject may appear only as a constituent of V—as an agreement clitic.

We find this a very natural analysis of Canela-Krahô subject extraction. There could be alternatives, of course, but we believe that this is a promising account of the facts. Our analysis has one crucial feature: it requires the assumption that tense is not a proper governor. Returning then to Hale's analysis, what is the nature of the relationship between an incorporated subject and the head which is its host. The relationship cannot be proper government because that relation is not necessary in Canela-Krahô and it cannot be government since in English (and, by hypothesis, in all languages) tense is a governor of the subject. Case-marking too can presumably be excluded as not sufficient and not necessary (unless we want to assume that subjects in VSO are case marked by the verb, which makes some odd predictions for tenseless clauses). Another possibility is that subject incorporation can be licensed if the host is in a position (say C^0) from which it can c-command the trace of the incorporation but presumably Verb-Second languages such as German produce the correct configuration without getting the incorporation. If this analysis of Canela-Krahô is correct then Hale's analysis cannot adequately characterize the conditions under which subject incorporation occurs.

5.3 Conclusions: On Non-Configurationality

Why do languages put words in a particular order and what is grammatical agreement? The answers are perhaps related. Agreement has at least two crucial manifestations which though separable are related. Agreement is a licensing relation both in the broad sense that in languages like Italian it licenses pro because pro is recoverable and identified by agreement and in the narrower sense that it is able to discharge thematic-roles in particular types of languages. Agreement has a profound effect, we believe, in languages where it is particularly rich, where agreement represents both subjects and direct objects. In those languages, the answer where does word order come from has several intertwined answers. One answer might be that overt NPs when they appear must be in particular configurations with respect to other NP/clitic chains. This is a proposal from Alexander (1986) which purports to explain why languages with unusual word orders (OVS, OSV, VOS) overwhelmingly tend to have subject and direct object agreement and why languages with subject and object agreement seem to have the broadest mix of types of word order (i.e., why [+Agreement, -Case] has OVS, OSV, VOS, VSO, SOV and SVO exemplars). Another answer, suggested by Navajo and Yagua, is that word order is derivative of headedness. NPs when they appear in [+Agreement, -Case] languages are adjuncts (of a sort) and consequently their relative position in the phrase must be specified by the headedness parameter which obtains in the language.

Another possibility is that word order in these languages comes from the fact NPs are theta-dependent on their coreferential agreement morphemes and that theta-transfer is a local relation. There may be other answers and it may be that none of the suggestions are accurate.

An obvious question concerns how these two senses of the licensing relation of agreement relate. Why is Italian or Irish not Hixkaryana or Navajo. To paraphrase Hale's discussion of Warlpiri, the question is important and vexed. The answer we are forced to is that subject agreement licenses null anaphora but the addition of object agreement does more than double the available empty categories. It seems rather to dramatically effect the grammatical system of the language, what might once have been termed the "grammatical method". A language with subject agreement and rich case seems to us to behave very much like a language without subject agreement that has rich case apart from null anaphora while a language with subject agreement and no case seems to us to behave like a language with no subject agreement and no case, again except with respect to null anaphora. A language with subject and object agreement, we claim, is a different type of language altogether, showing null anaphora of course but lacking also NP movement transformations and having a much rich morphological structure. This is presumably the intuition behind Saxon's and Speas' claims that our [+Agreement] languages were morphologically projected while our [-Agreement] (including Italian and English) were syntactically projected. We share the intuition but we cannot answer the question 'why does direct object

agreement have such an effect on the entire grammatical system'
(presuming, of course, that it does). Obviously one could speculate
that there are types of languages where morphology is the locus of
grammatical relations and that there are languages where syntax is the
locus and one could claim that these two systems overlap or imitate
one another but we believe that this is no more appealing (at the
present state of knowledge) than the *deus ex machina* of grammatical
method or the genius of the language.

In this work we have attempted, essentially at every turn, to
suggest that there is a difference between Irish and Dogrib *and* that
this is a consequence of the cumulative effect of agreement. The
Dogrib/Irish difference, we believe, is not as dramatic as classical non-
configurationality. That notion we reject first because it erases the
quite striking differences between Warlpiri and Navajo and second
because we have argued that case is case, and, essentially, agreement
is agreement and government is government—all familiar relations.
Languages select from these relations and the results are largely
predictable, except again from the emergent property of
accumulation, of specialization in one of these relations to the
exclusion of the others.

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