

“Pronouns, Presuppositions and Hierarchies: Papers by Eloise Jelinek”

edited by Andrew Carnie and Heidi Harley

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The papers in this section draw together a rich body of work with data from Warlpiri, Navajo, Apache, Lummi, Yaqui and others, arguing that languages which are non-configurational (in the sense described by Hale 1983), are best explained by the view that they, to one degree or another, parametrically lack full DP arguments. Argument positions in these languages are occupied by pronouns, pronominal clitics, or rich agreement that indexes the pronominal arguments. Full DPs are adjuncts and don't participate in traditional argument relations.

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II. PART II: Hierarchies, information structure and semantic mapping

While many of the papers in this section also deal with PA languages, the focus in this section is on the relationship between hierarchical syntactic structure and semantics. In particular, it builds upon Jelinek's claim that semantic hierarchies (including those dealing with information structure) correlate systematically to the hierarchical structure of the clause. Person Hierarchies, Animacy Hierarchies, Specificity Hierarchies, Voice Hierarchies and Topic/Focus splits all correlate directly to the architecture of the clause, where hierarchy-prominent relations are also structurally more prominent.

- II.1 **Jelinek, Eloise** (1987) Auxiliaries and Ergative Splits: A Typological Parameter. in Harris, Martin and Ramat, Paolo (eds.). *Historical Development of Auxiliaries*. Berlin: Mouton de Gruyter. pp. 85-108.
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Jelinek, Eloise (1989). "The Case Split and Argument Type in Choctaw." In Maracz, Lazlo K. and Pieter Muysken (eds.), *Configurationality: The Typology of Asymmetries*. Dordrecht: Foris. pp 117-141
- II.2 **Jelinek, Eloise** (1993) Ergative Splits and Argument Type. *Papers on Case and Agreement*. MIT Working Papers in Linguistics 18: 15 – 42.
- II.3 Deising, Molly and **Eloise Jelinek** (1995) Distributing Arguments. *Natural Language Semantics* 3: 123-176.
- II.4 **Eloise Jelinek** and Andrew Carnie (2003) Argument Hierarchies and the Mapping Principle. in Carnie, Harley and Willie, *Formal Approaches to Function in Grammar*. John Benjamins. 265-296

III. PART III: Yaqui Morphosyntax

While Jelinek worked extensively on languages of Australia, Salish Languages, Semitic languages, and Apachean languages, the majority of her own field work lay in the study of the Uto-Aztecan Language Yaqui (also known as Hiaki or Yoëme), which is spoken near Tucson where Jelinek spent the last 40 years of her life. Jelinek worked closely with the Yaqui community in Arizona, helping them to develop pedagogical materials for teachers and language students. She also did significant work on the morphosyntax of the language. We present here four of her papers on the language, one that is reasonably accessible (Jelinek 1998), two that appeared in less accessible venues (Jelinek and Escalante 1989 and Jelinek 2003), and one that was in the course of being written when Eloise passed away in 2007 and appears here in print for the first time. The papers here focus on argument realization, scope, voice and transitivity in the language.

- III.1 **Jelinek, Eloise** and Fernando Escalante (1989) Double Accusative Constructions in Yaqui. *Proceedings of the Pacific Linguistics Conference*, University of Oregon, Eugene. 120-132
- III.2 **Jelinek, Eloise** (1998) Voice and transitivity as functional projections in Yaqui. In Miriam Butt and Wilhelm Geuder (eds) *The projection of arguments: Lexical and compositional factors*. Stanford: CSLI Productions. Pp 195-225.
- III.3 **Jelinek, Eloise** (2003) Quantification in Yaqui Possessive Sentences. *MIT Working Papers in Endangered and Less Familiar Languages* 5. 201-214
- III.4 Heidi Harley and **Eloise Jelinek** (2007) The Yaqui Impersonal as an Existential Verb. Previously unpublished.

Jelinek Curriculum Vitae

Preface and Acknowledgments (Andrew Carnie & Heidi Harley)

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PART I: Configurationality and the Pronominal Argument Hypothesis

The papers in this section draw together a rich body of work with data from Warlpiri, Navajo, Apache, Lummi, Yaqui and others, arguing that languages which are non-configurational (in the sense described by Hale 1983), are best explained by the view that they, to one degree or another, parametrically lack full DP arguments. Argument positions in these languages are occupied by pronouns, pronominal clitics, or rich agreement that indexes the pronominal arguments. Full DPs are adjuncts and don't participate in traditional argument relations.

I.1 Jelinek, Eloise (1984). Empty Categories, Case and Configurationality. *Natural Language and Linguistic Theory* 2: 39-76

In this paper, Jelinek argues against the configurationality parameter by Hale (1983) and introduces the influential and important **Pronominal Argument Hypothesis** (PAH). Using data from Warlpiri, she hypothesizes that non-configurational languages differ from configurational ones in that they lack full DP arguments. Arguments in Pronominal Argument (PA) languages are always pronouns (which can be null and indexed only by verbal agreement). Any DPs in the sentence function as adjuncts. This explains a range of properties whereby non-configurational languages exhibit some configurational properties, such as principle B and certain patterns of case marking, due to the pronominal status of the arguments, but not others, such as principle C, since DPs are adjuncts. This approach is highly influential and underlies the view put forward in Baker's seminal book *The Polysynthesis Parameter*.

EMPTY CATEGORIES, CASE, AND
CONFIGURATIONALITY*

0. INTRODUCTION

Ken Hale's work on Australian and Native American languages has served to extend the data base of mainstream theoretical linguistics, and has made it necessary for a theory concerned with language universals to confront data from these typologically interesting languages.¹ In a series of papers (1980, 1981, 1982, 1983) Hale has drawn attention to the problem of non-configurationality in Warlpiri; in the latest of these, 'Warlpiri and the Grammar of Non-configurational Languages', his purpose is to define a configurationality parameter from which the cluster of properties seen in non-configurational languages would follow. I take issue here with Hale on the source of non-configurationality, and propose a different typological parameter, based on a re-analysis of Warlpiri data given in Hale's publications, and some observations on other non-configurational languages.² An interesting result of this analysis is an explanation of the 'ergative splits' frequently seen in non-configurational languages.

The properties common to non-configurational languages that Hale seeks to account for include the following: (1) "free" word order; (2) syntactically discontinuous expressions; and (3) "null anaphora". In the following Warlpiri sentence, any word order is possible, with the provision that the AUX clitic sequence occur in the second position.³

*This paper is dedicated to Adrian Akmajian. I had the good fortune to be Adrian's student; he was my thesis supervisor. At the time of Adrian's sudden illness, we had been discussing revisions to an earlier version of this paper (Jelinek, 1983b). Adrian did not see this final draft, and all errors and confusions are my responsibility.

¹ Akmajian attributed his decision to become a linguist to the stimulus of Hale's classes at Arizona in the mid 1960s.

² I thank Ken Hale for the help and encouragement that made this paper possible, and for criticisms and corrections. Chisato Kitagawa, Ann Farmer, and Frank Heny gave invaluable help. I am grateful also to Dick Demers, Adrienne Lehrer, and the readers for this journal for useful comments. I also want to thank Ofelia Zepeda for explaining certain aspects of Papago grammar to me.

³ The Warlpiri example sentences will be identified by the year of Hale's publication in which they appear, followed by the page number. The transcription of the 1973 and 1976 examples has been changed to that employed in the 1982 examples, in accordance with information supplied by Hale.

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

The man is spearing the kangaroo. (Hale, 1983, p. 6)

Thus, 'free' word order. Furthermore, non-adjacent nominals may correspond to a single verbal argument, resulting in discontinuous expressions:

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

I will spear that kangaroo. (Hale, 1983, p. 6)

(This example is as given by Hale; the clitic *-rna* marks first person singular subject.) **Wawirri** and **yalumpu** in (2) comprise a discontinuous expression. In (3) below, these nominals appear as a single (continuous) constituent, as can be seen by the fact that they precede *AUX*; only one word or a single constituent may occur before *AUX*.

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

(Hale, 1983, p. 6)

By "null anaphora" Hale refers to "the situation in which an argument (e.g., subject, object) is not represented by an overt nominal expression in phrase structure". This is exemplified in (4) below:

- (4) a. Ngarrka-ngku ka panti-rni.
man-ERG AUX spear-NONPAST

The man is spearing him/her/it.

- b. Wawirri ka panti-rni.
kangaroo AUX spear-NONPAST

He/she is spearing the kangaroo.

- c. Panti-rni ka.
spear-NONPAST AUX

He/she is spearing him/her/it. (Hale, 1983, p. 7)

English exhibits none of these traits: word order marks grammatical relations; constituents may not be discontinuous; and nominals are not optional. The primary goal of this paper will be to account for the fact that nominals are frequently 'absent' in Warlpiri sentences; once this aspect of Warlpiri syntax is clarified, we will also have an explanation for free word

order and the apparent discontinuous expressions. Within the Government and Binding (GB) framework (Chomsky, 1981, 1982) the Projection Principle precludes 'missing' nominal arguments:

(5) Projection Principle

The θ -marking properties of each lexical item must be represented categorially at each syntactic level.

Within the GB framework, there are no 'missing' nominals in English sentences; there are empty categories (ECs) that bear the relevant θ -roles. The point is that nominals represented by ECs are recoverable, as in the case of PRO in the following example:

(6) The man wants [[PRO] to spear the kangaroo].

The anaphoric relation between the subjects of the two clauses makes the reference of PRO in the embedded clause explicit.

Chomsky (1982, pp. 78–88) identifies *pro* as the 'missing' subject in 'pro-drop' languages; *pro* is free in its governing category, and is a non-anaphoric pronominal, with independent (deictic) reference. Hale's claim is that neither PRO nor *pro* need be postulated in the analysis of Warlpiri main clauses; nominals are simply optional. Non-configurationality finds its origins in the nature of the relationship between phrase structure (PS) and lexical structure (LS), that is, in differences in the way the Projection Principle holds in the two language types.

By lexical structure, Hale refers to predicates and their argument arrays. These arrays correspond to variables specified in the dictionary definition of a verb, as suggested in the following "rough" definition of **panti-rni**, "spear":

(7) $\left\{ \begin{array}{l} x \text{ produce indentation or puncture} \\ \text{in the surface of } y, \text{ by point coming} \\ \text{into contact with said surface} \end{array} \right\}$ (Hale, 1983, p. 12.)

The dictionary definition of the verb assigns θ -roles and ultimately case to the LS arguments, so that case arrays are stipulated lexical properties of verbs, and may be any of the following:

- (8) monadic verbs: ABS (DAT)
 diadic verbs: ERG ABS or ERG DAT
 triadic verbs: ERG ABS DAT

These stipulated case arrays state the cases that any optional nominals may bear, since a "principal function of case-marking in Warlpiri (is) that of

signaling the correct association of constituents in PS to arguments in LS" (1983, p. 14). This association between PS nominals and LS arguments is stated as follows:

(9) Linking Rule:

Co-index \bar{N} in PS with *arg* in LS, provided the case category of \bar{N} is identical with that of *arg* (assigning a distinct index to each *arg* in LS). (Hale, 1983, p. 14)

This Linking Rule does not require that LS arguments be uniquely represented by nominals in Warlpiri sentences; there may be no nominal corresponding to a particular argument – or more than one. It thus conflicts, as it stands, with the Projection Principle as given in (5), which was explicitly designed to exclude the possibility of genuinely ‘missing’ arguments and hence to motivate the existence of ECs. Because the structures permitted by the LR would be excluded by the Projection Principle, Hale proposes to parametrize the application of the principle, formulating for this purpose the following proposal:

(10) The Configurationality Parameter (CP):

- a. In configurational languages, the projection principle holds of the pair (LS, PS).
- b. In non-configurational languages, the projection principle holds of LS alone. (Hale, 1983, p. 26)

From Hale’s Configurationality Parameter it follows that PRO or *pro* are unnecessary in the analysis of Warlpiri finite sentences. The θ -marking properties of verbs (etc.) are represented by argument arrays in LS, but not necessarily in PS. This is Hale’s explanation for ‘null anaphora’, or more generally, for the fact that Warlpiri does not require that there be nominals bearing particular grammatical relations occupying particular positions in the clause, and thus free word order, syntactically discontinuous expressions, etc.

Hale’s fundamental insight on the nature of non-configurationality in Warlpiri is that it is unnecessary to postulate ECs in the analysis of Warlpiri sentences such as those given in (4) above. In the next section, I will show a) that Hale is correct in this claim, and b) that nonetheless, there is no need to claim that Warlpiri differs from configurational languages with respect to the Projection Principle. It seems reasonable to suppose that the Projection Principle or its equivalent is language universal: across languages, lexical

structure is projected onto phrase structure.⁴ Marantz (1978, p. 88) expresses this intuition as follows:

- (11) Grammatical relations must be expressed at surface structure.

A sentence with no surface indications of grammatical relations would be uninterpretable,⁵ and without some such addition, Hale's CP threatens to permit languages with uninterpretable surface structures. In this paper, I propose configurationality parameters which are directly compatible with the Projection Principle, and hence with (11), and which nevertheless, like Hale's proposals, permit typological variation in the nature of the connections that may obtain between lexical structure and grammatical relations. These in turn account for the properties of Warlpiri which Hale's CP and Linking Rule were designed to explain.

2. AN ALTERNATIVE ANALYSIS OF WARLPIRI AS A NON-CONFIGURATIONAL LANGUAGE

2.1. *Clitic Pronouns as Verbal Arguments in Warlpiri.* The second position AUX constituent of finite sentences in Warlpiri in the locus of person marking. Consider example (2), repeated here:

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

I will spear that kangaroo. (Hale, 1983, p. 6)

AUX contains the element **kapi** (FUTURE) and the clitic **-rna**, which marks first person singular subject. On Hale's view, AUX is that part of the verbal complex where INFL features are marked; SUBJECT and OBJECT grammatical relations are also marked there, but no case-marking is ascribed to the AUX clitics. Hale's position is that argument positions in LS are "members of the class of linguistic elements to which the terms 'pronoun' and 'anaphor' are appropriately applied" (1983, p. 29). Since LS arguments are not audible, AUX gives information on the number and person (pronominal attributes) of the LS arguments. The LS argument positions are case marked, making it possible for them to be linked to optional nominals via Hale's Linking Rule (9) above.

The analysis of Warlpiri proposed here differs principally from that of Hale in interpreting AUX not as simply marking grammatical relations, but as a

⁴ See discussion on this point in Farmer (1983).

⁵ As will be seen, this principle holds of grammaticality, not of discourse pragmatics.

constituent containing case-marked, fully referential clitic pronouns that serve as verbal arguments.⁶ The case-marking of an AUX clitic shows its grammatical relation. In contrast, nominal expressions are claimed not to bear grammatically relevant case marking or to realize grammatical functions. The distinction between pronominal clitics on the one hand and nominal expressions (including independent pronouns) on the other is a major feature of Warlpiri grammar. 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, and may be identified as R-expressions.

I argue that the clitic pronouns do not constitute agreement (AGR) with a nominal, since, as will be demonstrated, a clitic may be coindexed with a nominal that does not agree with it in person, number, or case. My claim will be that verbal argument arrays (argument positions) in LS are satisfied always and only in PS in Warlpiri by clitic pronouns, and that nominals are simply optional adjuncts, with non-argumental functions. I will show that while the clitic pronouns carry grammatical case, which reflects their grammatical functions, nominals carry non-grammatical (oblique) case, and are governed by their case particles/postpositions. The Warlpiri verb assigns θ -roles, but does not govern nominals. AUX in Warlpiri does not assign θ -roles, just as INFL in English does not. The AUX constituent in Warlpiri contains tense/aspect INFL and the clitic pronouns that are the verbal arguments. The verb plus the AUX tense/aspect jointly govern clitic pronouns and assign NOMINATIVE/ACCUSATIVE case to them. Within the GB framework, INFL governs the subject; we could assume the same here, since it is the AUX tense/aspect that renders the clause finite. However, both subject and object clitics occur within the AUX constituent in PS; therefore, there is no asymmetry in the marking of subject and object relations, in contrast to a configurational language like English, where objects appear in a VP constituent and subjects do not.

The following examples will show that Warlpiri marks NOMINATIVE/ACCUSATIVE case on the AUX pronominal clitics. By definition, a NOM/ACC case system is present when there is a set of elements that

⁶ The suggestions given here for an alternative view of Warlpiri structure and a definition of configurationality as a typological parameter are directly derivative of Hale's work. All the Warlpiri examples given here are from Hale's published papers; sentential constituents are identified as in those publications except in regard to case marking. It was Hale who originally labeled clitic sequences such as those in Warlpiri 'AUX', thereby drawing attention to the many parallels in function between such sequences and auxiliary verbs (the copula, etc.) in other languages. See discussion in Steele et al. (1981) and in Jelinek (1983a).

distinguish between transitive subjects and objects, and mark intransitive subjects the same as transitive ones.⁷

- (12) ngajulu-rlu ka-rna-ngku nyuntu- \emptyset nya-nyi
I-ERG PRES-1sgNOM-2sgACC you-ABS see-NONPAST

I see you.

- (13) nyuntulu-rlu ka-npa-ju ngaju- \emptyset nya-nyi
you-ERG PRES-2sgNOM-1sgACC me-ABS see-NONPAST

You see me.

- (14) nyuntu- \emptyset ka-npa purla-mi
you-ABS PRES-2sgNOM shout-NONPAST

You are shouting; you shout.

(Hale, 1973, p. 328)

The NOM/ACC case clitic pronouns in Warlpiri are as follows (adapted from Hale, 1973, pp. 315–316, and p. 328):

(15) NOMINATIVE	(16) ACCUSATIVE	
-rna	-ju	<i>1 sg</i>
-n (pa)	-ngku	<i>2 sg</i>
-rlijarra	-jarangku	<i>1 dual</i>
-rli	-ngalingku (~-ngali)	<i>1 & 2 dual</i>
-n (pa)-pala	-ngku-pala	<i>2 dual</i>
-rna-lu	-nganpa	<i>1 plural</i>
-rli-pa	-ngalpa	<i>1 & 2 plural</i>
-nku-lu	-nyarra (~-nyurra)	<i>2 plural</i>
ZERO	ZERO	<i>3 sg</i>
-pala	-palangu	<i>3 dual</i>
-lu	-jana	<i>3 plural</i>

The view that the person making clitics in Warlpiri mark NOM/ACC case, as opposed to the ERG/ABS case marking on nominals, is not original here (see Blake, 1977; Dixon, 1979; Mallinson and Blake, 1982). Languages of the Pama-Nyungan family, which covers most of Australia and to which Warlpiri belongs, generally show an ergative ‘split’ whereby clitic pronouns (and typically, independent pronouns as well) show NOM/ACC case,

⁷ Beginning with example (12), I will record case marking on the AUX clitics according to the analysis proposed in this section. I will follow Hale in identifying phonologically null person markers as ZERO, and phonologically null tense/aspect as \emptyset . I will record ABSOLUTE case marking on nominals also with \emptyset .

while nominals show ERG/ABS case marking. In a few languages of this family, there are no clitic pronouns, only independent pronouns with NOM/ACC case and nominals with ERG/ABS case. Dyirbal is an example of this variety of ergative split. My point here is that it is not implausible on the face of it to assign NOM/ACC case to the Warlpiri AUX clitics, in view of the case systems present in closely related languages. NOM and ACC are grammatical cases (G-cases) while the cases that appear on nominals are lexical cases (L-cases), including ERG, ABS, and a variety of others (principally locative and directional) to be specified below.

The following examples will show that the NOM/ACC clitic pronouns do not agree in case with the ERG/ABS nominal adjuncts, nor need they agree in person and number:

- (17) Puyukuyuku-puru, kula-lpa-rlipa-nyanu
fog-WHILE, NEG-IMPERF-1pl (INC) NOM-REFL
 yapa- \emptyset nya-ngkarla
person-ABS see-irrealis

We (plural inclusive) cannot see one another (as) person (s)
 (i.e., our shapes or figures) when it is foggy. (Hale, 1983, p. 33)

In (17) the third person absolutive nominal **yapa** 'person' is coindexed with the reflexive clitic **-nyanu**, which as an anaphor of **-rlipa** (1pl inclusive NOM) is interpreted as first person plural. Compare also:

- (18) Nya-nyi ka-rna-ngku ngarrka- \emptyset -lku
see-NONPAST PRES-1sgNOM-2sgACC man-ABS-after

I see you (as) a man now (i.e., as fully grown, or initiated).
 (Hale, 1983, p. 32)

Here the absolutive nominal agrees neither in case nor in person with the clitic pronoun.

There are certain finite sentences in Warlpiri that appear to have neither nominals nor clitics serving as verbal arguments, and thus to be instances of constructions with 'missing' arguments, or in Hale's term, 'null anaphora'. Consider again example (4c) repeated here:

- (4) c. Panti-rni ka-ZERO-ZERO
spear-NONPAST PRES-3sgNOM-3sgACC

He/she is spearing him/her/it.

In the paradigms of the clitic pronouns given in (15) and (16) above, there are precisely two 'gaps'. The NOM and ACC third person singular forms are phonologically zero. But sentences containing such phonologically

null forms are not ambiguous. Even the dual and plural third person NOM and ACC forms are fully realized. So we find examples like the following:

- (19) Panti-rni ka-lu-jana
spear-NONPAST PRES-3plNOM-3plACC

They are spearing them.

The features of third person singular are fully specified by the absence of phonological material, and there is no question of null anaphora or of an 'empty category' in the sense in which this term is used in GB. We may characterize the situation as follows: one member of both the NOM and ACC clitic paradigms is unambiguously marked by the absence of all the other (phonologically represented) members of the relevant paradigm. Under these circumstances, ZERO realization has precisely the same status as any other realization. Every obligatory feature of the clitic pronoun paradigms has therefore a fixed value in third person singular forms, as in all others.

It should be noted that the ZERO third person singular NOM/ACC arguments in Warlpiri are not the result of 'pro-drop'. In the GB framework, *pro* may have any feature of person, number, gender, etc., that AGR specifies. The absence of phonological material marking third person singular arguments in Warlpiri could not be *pro*, because the features of these arguments are not determined by AGR; they are arguments with fully realized features of number and person, third person singular.

It should be emphasized that this analysis of the clitic pronouns in Warlpiri has consequences of some significance. Since the clitic pronouns constitute the verbal arguments in finite clauses, the fact that arguments are always present, even when in the third person singular they lack phonological realization, makes it impossible for a Warlpiri finite clause to lack some verbal argument. Thus even in a case like (5C), consisting overtly of only the verb and AUX, I posit no missing arguments on any level. There is no *pro* since there are no missing nominals – and no AGR. Hale, of course, did not suppose that Warlpiri permitted *pro* as a realization of some verbal argument. Under his analysis, all the verbal arguments in LS are phonologically null, while at PS some arguments are realized by free nominals and others are actually missing – since the Projection Principle does not apply at that level. Since I am claiming that it is the clitic pronouns alone that realize the arguments of a verb, even at PS, where phonologically null elements are identified with ECs in the GB framework, it was important to establish that in this instance, where arguments are realized by members of a highly constrained paradigm in Warlpiri, phonologically null arguments are not ECs.

Having shown that the clitic pronouns in Warlpiri are not instances of AGR, which licenses the 'dropping' of nominals, let us turn to a brief consideration of similar phenomena in what have been termed 'pro-drop' languages. I suggest that while 'pro-drop' cannot account for the 'missing' nominals in Warlpiri, an analysis in terms of optional nominal adjunction will fit both the Warlpiri data and that of the so-called 'pro-drop' languages. As the following examples from Spanish demonstrate, agreement between the person of the subject, as marked in the verbal suffix, and that of an adjoined nominal need not be present in every instance.⁸

(20) a. Las mujeres tenemos esperanza.

DET women have-3pl hope

We women have hope.

b. Las mujeres teneis esperanza.

have-2pl

You women have hope.

c. Las mujeres tienen esperanza.

have-3pl

Women have hope.

In a Spanish sentence such as:

(21) Comí el pan.

I ate the bread.

the subject is the pronominal suffix *-í*, first person singular; this verbal suffix occurs only in finite clauses, and marks tense also. The object **el pan**, on the other hand, is a nominal properly governed by the verb. Spanish has both clitic and nominal objects, and in constructions like (21), no object clitic is present, in contrast to the situation in Warlpiri, where all verbal arguments are always clitics in AUX. It is of interest that in both the so-called 'pro-drop' languages and in Warlpiri, independent pronouns are used primarily for emphatic contrastive reference; and sentences with an independent pronoun in adjunction to a pronominal affix or clitic are the *marked* constructions:

(22) Yo sé lo que pasó, (no tú).

I know it which happened not you

I know what happened, not you.

⁸ I thank María Dardis for these examples.

(23) Me lo dió a mí.

Me(DAT) it gave to me

He gave it to *me*.

(24) ngajulu-rlu wawirri- \emptyset kapi-rna-ZERO

I-ERG kangaroo-ABS FUT-1sgNOM-3sgACC

panti-rni yalumpu- \emptyset

spear-NONPAST that-ABS

I (myself) will spear that kangaroo.

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. Because of the specialized function of independent pronouns as adjuncts in these languages, some verbs, which for semantic reasons do not permit contrasts in referential emphasis, may exclude independent pronouns as adjuncts:

(25) a. Llueve.

It's raining.

b. *El llueve.

It is raining, (not...).

If we assume that nominal adjunction is present in Spanish, rather than 'pro-drop', there is no motivation for postulating a 'pleonastic' PRO or *pro* (non-referential, non-phonological) subject in (25b).⁹ There is a phonological subject in (25a); the verbal suffix is a third person singular subject. But since this subject is non-referential for a verb such as *llover* in Spanish, an independent pronoun marking an emphatic referential contrast cannot be adjoined.

In this section, I have concentrated on the implications of the proposal outlined above for accounting for the 'missing' nominals in Warlpiri sentences. Since nominals are never verbal arguments, they may be freely omitted without offending against the Projection Principle. This appears to be the essential property of languages like Warlpiri, the property that Hale's Configurationality Parameter was intended to capture. Note that the other properties that concerned Hale seem also to follow from the proposal advanced here. Since nominals are not arguments or bi-uniquely

⁹ See Aoun (1981) and Borer (1980) for discussion of 'expletive' or 'pleonastic' PRO in Semitic. In Jelinek (1983a) I argue that the apparently 'subjectless' constructions in Egyptian Arabic have subjects that are AUX clitics. There is a paradigmatic gap in Semitic; the 'present tense' inflection of the copula is phonologically null. Modal predicates and weather verbs are restricted to third person subjects, which are not phonologically realized in the present tense; in all other tense/aspect constructions subjects are phonologically realized in the inflection of the copula.

related to arguments, more than one nominal may be adjoined to a single argument, to yield apparently discontinuous expressions, as in (3). And since nominals are mere adjuncts, there is nothing to require that they have a fixed order. The clitic pronouns, on the other hand, do have a fixed order: SUBJECT (i.e. NOM) must appear before OBJECT (i.e. ACC), so that we cannot reverse the order of the clitic pronouns in (13) to yield

- (26) *ngajulu-rlu ka-ngku-rna
 I ERG PRES-2sg ACC-1sg NOM
 nyuntu- \emptyset nya-nyi
 you-ABS see-NONPAST

Hale (1973) excludes such clitic sequences. I do not interpret this fixed order of the clitics as evidence of configurationality; 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.¹⁰

2.2. *Linking Rules and Case Compatibility.* We turn now to a consideration of the question of how the clitic verbal arguments and the optional nominal adjuncts in Warlpiri are to be coindexed, how they are to be interpreted as coreferential. Warlpiri nominals are equivalent in function to the NPs in the following English sentence:

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

Warlpiri nominals are adjuncts to the Verb-AUX complex, which constitutes a complete finite sentence. They are governed by their case particles/postpositions, forming Case Particle Phrases that are sisters to the Verb-AUX:

- (28)
-
- ```

graph TD
 S --- V["V
(+ Tense/
Aspect)"]
 S --- AUX
 S --- CPP
 AUX --- T
 AUX --- S
 AUX --- O
 CPP --- Nominal
 CPP --- CP
 S -.- CPP

```

T = Tense/Aspect/Modality

S = Subject Clitic; NOM case

O = Object Clitic; ACC case

CP = Case Particle; (ERG, ABS, DAT, LOCATIVE, etc.)

--- = Optional

<sup>10</sup> In Jelinek (1983b), I claimed that Warlpiri was configurational with respect to the clitic pronouns, because they have a fixed order. I now feel that this is a misuse of the term configurational.

We need to add to (28) the stipulation that any case particle phrase (CPP) may appear in the sentence initial position, whereupon the verb appears after AUX, with no fixed order with respect to any CPPs present. Hale (1973) notes that certain phonologically defined AUX clitic sequences may appear in sentence initial position, and proposes that this is the underlying word order in Warlpiri. This ordering of constituents would not affect the type of structure shown in (28). If the verb + tense, the CPPs, and the clitic sequences making up AUX are all phonological words, then a finite Warlpiri sentence is a string of words having free word order aside from the restrictions on the position of AUX, and having no hierarchical relationships among these words; that is, non-configurational at the word level.

We need a linking rule that differs considerably from Hale's Linking Rule (9) given above. Hale's rule linked elements filling argument positions in two levels of representation, LS argument arrays and PS nominals, which were argumental in function. We will need no rule linking LS and PS, since this connection holds via the Projection Principle.<sup>11</sup> Our rule will link elements on the same level of representation, clitics and nominals, and will depend on a weaker condition than case matching; case compatibility. Hale lists the argument arrays given in (8) above as "stipulated properties" of lexical items. My claim is that the Verb-AUX complex assigns NOM/ACC/DAT case to the verbal arguments, and that the case marking of a nominal shows which verbal argument, if any, it is an adjunct to. I differentiate between G-case and L-case, which are defined as follows:<sup>12</sup>

(29) Warlpiri Case

- a. G-case appears on clitic pronouns. The G-cases are NOM, ACC, and DAT.
- b. L-case appears on nominals. The primary L-cases are ERG, ABS and DAT; secondary L-cases are LOCATIVE, PERLATIVE, ALLATIVE, ELATIVE, etc.

Secondary L-case cannot be coindexed with a clitic pronoun, since, as I will show, a nominal with a secondary L-case marking is an adsentential adjunct. Primary L-case marks a nominal as an adargumental adjunct,

<sup>11</sup> In Jelinek (1983b) I assumed that there were two linking rules for Warlpiri. However, the first of these was equivalent to the Projection Principle.

<sup>12</sup> Hale (1983) refers to work in preparation by J. Simpson on Warlpiri case, in which a distinction is made between grammatical case vs. *semantic* case. Since I assume that this distinction is not between NOM/ACC/DAT marking on the clitics as opposed to ERG/ABS, etc., marking on nominals, but rather a division within the set of cases that may appear on nominals, I use a different terminology here. *Grammatical* case is the traditional term for case marking on direct verbal arguments. By *lexical* case I mean any case marking that appears on the optional non-argumental nominals.

as giving more information on the referent of a clitic verbal argument. DATIVE is both a G-case and an L-case in Warlpiri; this is not unusual across languages, where 'goals' are sometimes direct and sometimes oblique.

On the analysis advanced here, Warlpiri verbs have the following case arrays in LS, rather than the (ERG/ABS, etc.) arrays given by Hale in (9) above:

- (30) Warlpiri case arrays:
- a. Intransitive: NOM  
                  NOM DAT
  - b. Transitive:  NOM ACC  
                  NOM ACC DAT  
                  NOM DAT

The situation is in fact simpler than it appears in (30), where transitive verbs are shown as permitting a NOM/DAT case array. Hale identifies only "two or three" transitive verbs that permit this case array, which must be so specified in the lexicon, and a highly marked or derived construction type in which other transitive verbs take an (atypically marked) DAT object. Aside from these exceptional constructions, to be described below, the case arrays given in (30) are clearly not peculiar to Warlpiri, but are typical of (non-ergative) languages. Individual verbs and other lexical items are subcategorized for the G-cases that they assign to their arguments, presumably in accordance with principles that are in part universal and need not concern us here.

The relation between clitic pronoun arguments and nominal adjuncts may now be stated in terms of case compatibility:

(31) Linking Rule

A clitic pronoun may be coindexed with a nominal, providing the L-case of the nominal and the G-case of the clitic pronoun are *compatible* (assigning a distinct index to each clitic).

This linking or coindexing rule is not bi-unique, since there may be more than one or no nominal coindexed with a clitic; and some nominals may fail to be coindexed because they bear a secondary L-case that is not compatible with the G-cases marked on the clitics. Compatible cases are as follows:

- (32) Case Compatibility Rule
- a. NOM G-case is compatible with ABS and ERG L-case.
  - b. ACC G-case is compatible with ABS and DAT L-case.
  - c. DAT G-case is compatible with DAT L-case.

The conditions under which a G-case is compatible with either of the L-cases given in (32a and b) will now be stated in full. I will first summarize them as follows:

- (33) a. NOM G-case is compatible with ABS L-case in an intransitive sentence, and with ERG L-case in a transitive sentence. (ERG marked nominals are excluded from intransitive sentences.)<sup>13</sup>  
 b. ACC G-case is compatible with ABS L-case in a transitive sentence, and with DAT L-case in a ditransitive sentence (for first and second person clitics).  
 c. DAT G-case is compatible with DAT L-case (for third person clitics).

Support for the view that there are two 'linking' processes in Warlpiri may be drawn from the fact that constructions may fail to be consistent by virtue of either. A construction may fail to have the proper linkage between an LS argument array and clitic pronouns, say by having two ACC clitic pronouns; this would be a violation of the Projection Principle. Or it may fail to have proper linkage between clitic pronouns and nominals, say by having an intransitive sentence with a NOM clitic and an ERG nominal; this would be a violation of the Linking Rule (31).

2.3. *Further Details of Linking.* I need to demonstrate now that the Projection Principle (5), the Linking Rule (31), and the Case Compatibility Rule (32) account for the case marking that appears on clitics and nominals in all finite sentence types in Warlpiri, to substantiate the claim that Warlpiri sentences without nominals have no 'missing' verbal arguments. In particular, we need to look at the relation between DAT G-case and DAT L-case, since first and second (but not third) person DAT L-case nominals are linked to ACC G-case clitics in AUX.

Let us consider first the finite sentence types shown in the following sentence schemata:

- (34) a.  $V_i$  NOM (NP-ABS)  
 b.  $V_i$  NOM DAT (NP-ABS) (NP-DAT)  
 c.  $V_i$  NOM ACC (NP-ERG) (NP-ABS)  
 d.  $V_i$  NOM DAT (NP-ERG) (NP-DAT)

<sup>13</sup> Again, there are a handful of exceptions which must be specified. Nash (1980, p. 201) lists 4 "morphophonologically complex body function verbs" (*snore, breathe, pant, cough*) in Warlpiri that are intransitive and permit an ERG nominal to be coindexed with the subject. Nash cites Hale to the effect that a likely etymology is that these [incorporated objects] were once true objects syntactically.



- (40) ngajulu-rlu kapi-rna-rla karli- $\emptyset$   
*I-ERG FUT-1sgNOM-3DAT boomerang-ABS*  
 punta-rni kurdu-ku  
*take-NONPAST child-DAT*

I will take the boomerang away from the child.

(Hale, 1973, p. 333)

For these triadic verbs, only two arguments appear to be marked in AUX; we will return to the question of the (apparently) 'missing' argument. What I want to point to here is the fact that for first and second person, there is no distinction between ACC and DAT G-case marking, while in the third person there is a distinctive DAT G-case marker (-*rla*). This third person G-case DAT marker does not vary with number. Compare the G-case marking that appears with the transitive verb *nya-nyi*, 'see'.

- (41) ngajulu-rlu ka-rna-ngku nyuntu- $\emptyset$   
*I-ERG PRES-1sgNOM-2sgACC you-ABS*  
 nya-nyi.  
*see-NONPAST*

I see you.

- (42) nyuntulu-rlu ka-npa-ju ngaju- $\emptyset$   
*you-ERG PRES-2sgNOM-1sgACC me-ABS*  
 nya-nyi.  
*see-NONPAST*

You see me.

- (43) ngalipa-rlu ka-rlipa-jana  
*we(INCL)-ERG PRES-1pl(INC)NOM-3plACC*  
 wawirri-patu- $\emptyset$  nya-nyi.  
*kangaroo-PAUCAL-ABS see-NONPAST*

We (plural inclusive) see the several kangaroos.

(Hale, 1973, p. 328)

Comparison of (39) and (41) with (40) shows that the DATIVE marker -*rla* appears only in the third person in AUX. Sentence (39) and other examples given by Hale of sentences with first and second person 'recipients' are reminiscent of 'dative movement'. The precedence of a 'first object' over a 'second object' may be related often to semantic features such as animacy, definiteness, topicality, etc. Third person less frequently has these features than do first and second person. In Warlpiri, first and second person are restricted to serving as *primary* arguments to the verb, NOM and ACC,



while third person may also have DAT G-case. First and second person show only NOM/ACC G-case marking in all sentence types in Warlpiri where third person clitic pronouns have DAT marking, as examples given in Hale (1973) and (1983) show.

Hale describes certain sentence types in which three arguments in LS may be marked in AUX. A verb such as **warri-rni**, 'seek', may have two DAT arguments, one of them a benefactive. If one or both of these DAT arguments is third person, three case marking elements may appear in AUX, as in the following:

- (44) ngajulu-rlu ka-rna-ngku-rla  
*I-ERG PRES-1sgNOM-2sgACC-3DAT*  
 karli-ki warri-rni nyuntu-ku.  
*boomerang-DAT seek-NONPAST you-DAT*

I'm looking for a boomerang for you; I'm hunting you a boomerang. (Hale, 1973, p. 335)

Here the second person DAT L-case nominal corresponds to a second person ACC clitic pronoun, since second person may appear only in one of the two primary G-cases in AUX. But the following sentence type, Hale notes, is excluded:

- (45) \*ngarrka-ngku lpa-ZERO-ju-ngku  
*man-ERG PAST-3sgNOM-1sgACC-2sgACC*  
 nyuntu-ku warru-rnu ngaju-ku  
*you-DAT seek-PAST me-DAT*

The man was looking for you for me; The man was hunting me you. (Hale, 1973, p. 335)

While the following is allowed:

- (46) ngajulu-rlu ka-rna-ngku-ZERO  
*I-ERG PRES-1sgNOM-2sgACC-3sgACC*  
 karli-∅ yi-nyi nyuntu-ku  
*boomerang-ABS give-NONPAST you-DAT*

I am giving you a boomerang. (Hale, 1973, p. 333)

Warlpiri has the following constraint upon clitic sequences in AUX:

- (47) Clitic Sequence Constraint:

A sequence of three clitic pronouns is excluded, unless one of the two object clitics is third person, and therefore (a) DATIVE, or (b) phonologically null.

That is, a sequence of two 'audible' ACC clitics is not permitted, while any object sequence with one or more third person elements is allowed.<sup>14</sup> Two DAT markers are allowed; these are of course third person. In such constructions, the sequence *\*-rla-rla* does not appear; *-rla-jinta* occurs instead, as follows:

- (48) ngajulu-rlu ka-rna-rla-jinta  
*I-ERG PRES-1sgNOM-3DAT-3DAT*  
 karli-ki warri-rni ngarrka-ku  
*boomerang-DAT seek-NONPAST man-DAT*  
 I'm looking for a boomerang for the man; I'm hunting the man  
 a boomerang. (Hale, 1973, p. 336)

The constraint given in (47) accounts for the fact that in ditransitive sentences, or sentences with two 'indirect objects' as in the benefactive constructions exemplified above where two optional DAT nominals may appear, no sequences of three AUX elements appear unless one of the objects is third person. Number is never marked in the third person in ditransitive or double DAT constructions; therefore, there are no 'missing' arguments or gaps in the PS argument array in these constructions, and no PRO or *pro*.

We could have assumed that there is a set of DAT clitics that is homophonous with the ACC clitics except in the third person. However, we would have been left with no explanation for the fact that (44) above is allowed, while (45) is excluded. The phenomena of 'advancement' of animate or higher ranked indirect objects or 'dative movement' are so frequently met with across languages that they are of interest for case theory and universal grammar.

We may now complete the sentence schemata list given in (34) as follows:

- (49) Finite sentence types in Warlpiri:
- a.  $V_i$  NOM (NP-ABS)
  - b.  $V_i$  NOM DAT<sub>3</sub> (NP-ABS) (NP-DAT<sub>3</sub>)  
 $V_i$  NOM ACC<sub>1/2</sub> (NP-ABS) (NP-DAT<sub>1/2</sub>)
  - c.  $V_i$  NOM ACC (NP-ERG) (NP-ABS)
  - d.  $V_i$  NOM DAT<sub>3</sub> (NP-ERG) (NP-DAT<sub>3</sub>)  
 $V_i$  NOM ACC<sub>1/2</sub> (NP-ERG) (NP-DAT<sub>1/2</sub>)
  - e.  $V_i$  NOM ACC<sub>3</sub> DAT<sub>3</sub> (NP-ERG) (NP-ABS<sub>3</sub>) (NP-DAT<sub>3</sub>)

<sup>14</sup> There are certain constraints on permitted number distinctions marked by clitic sequences in AUX in Warlpiri, which need not concern us here (see Hale (1973)).



argument positions and the case marking on clitic pronouns is quite straightforward. Sentences with an intransitive verb have a NOM clitic in AUX, sentences with a transitive verb have both NOM and ACC clitics, and DAT marking is optional in both; di-transitive sentences have all three clitic types. It is the  $\theta$ -marking properties of the verb that determine both the G-cases of the clitics, and the L-case of any coindexed nominals. Certain semantic features of the verb determine its LS argument structure, which is projected into PS via the G-cases and clitic pronouns. Given the LS argument array, we know the G-cases of the PS arguments and the L-cases of any coindexed nominals. The Linking Rule and the Case Compatibility Rule describe these dependencies.

2.4. *The Functions of Nominals in Warlpiri Sentences.* In the preceding sections, I have argued that nominals in Warlpiri sentences are not in and of themselves verbal arguments, but serve other syntactic functions. In this section, I will comment briefly on these functions.

Constituents of utterances that are neither a verb nor a verbal argument, nor sentence-defining (INFL or AUX), may be classified as either adsentential or adargumental. Adsentential constituents in Warlpiri sentences include those nominals governed by SECONDARY L-case particles; these constructions are primarily locative and directional in meaning, and have syntactic functions corresponding to those of prepositional phrases across languages. Adargumental constituents in Warlpiri include nominals with ERG, ABS, or DAT L-cases – the PRIMARY L-cases, compatible with the G-cases. These primary L-case particles are meaningful, just as the secondary L-case particles are; they serve to identify which clitic the nominal may be coindexed with, and since these correspondences vary with verb type, these L-cases reflect  $\theta$ -roles more specifically than the clitic verbal arguments do: they specify whether the subject is agent or experiencer, and whether the object is patient or goal. Compare the following:

- (51) Ngarrka- $\emptyset$  ka-ZERO-nyanu      nya-nyi  
*man-ABS PRES-3sgNOM-REFL see-NONPAST*

He sees himself, (as) a man.

- (52) Ngarrka-ngku ka-ZERO-nyanu      nya-nyi  
*man-ERG PRES-3sgNOM-REFL see-NONPAST*

The man sees himself.

(Hale, 1983, p. 43)

In this minimal pair, the contrast lies in the case marking of the nominal **ngarrka**, 'man'. In (51), the nominal has ABS case, and is coindexed with

the ACC reflexive clitic, *nyanu*; in (52), the nominal has ERG case, and is coindexed with the NOM clitic (third person sg ZERO). In (51), the optional nominal gives more information on the 'internal' argument, the object; in (52) the nominal gives more information on the 'external' argument, the subject.

The semantic contrast is an interesting one, as shown in the following pair of sentences, where a second nominal has been added to each, with contrasting L-case marking:

- (53) Kurdu-ngku ka-ZERO-nyanu ngarrka- $\emptyset$   
*child-ERG PRES-3sgNOM-REFL man-ABS*  
 nya-nyi  
*see-NONPAST*

He, the child, sees himself, (as) a man.

- (54) Kurdu- $\emptyset$  ka-ZERO-nyanu ngarrka-ngku  
*child-ABS PRES-3sgNOM-REFL man-ERG*  
 nya-nyi  
*see-NONPAST*

He, the man, sees himself, (as) a child. (Hale)

Further evidence on the semantic correlates of L-case marking can be seen in the fact that ERG case marking is homophonous with or identical to INSTRUMENTAL case, and as we have seen, BENEFACTIVE and DATIVE are the same.

In the 'double dative' example above (50b) we saw how a change in the case marking of the object clitic from ACC to DAT results in a semantic contrast – from achieved to failed object or goal, a change also marked on the optional nominal. Blake (1977) lists similar phenomena elsewhere in Australia. For example, the subject of a transitive sentence may be coindexed with a nominal that is not marked ERG if the action on the patient is not fully carried out or realized: imperfective aspect, imperatives, irrealis, or negative constructions. Or a nominal may not be marked ERG if the construction is about the *ability* to do something, rather than some actual transitive action. Similar limitations on the distribution of ERGATIVE case marking are present in many languages: Basque, Georgian, Indic, Samoan (Blake, 1977, p. 16). In Alawa hunting narratives, the nominal referring to the animal being sought is DAT until it or its tracks are sighted; after that it is marked objective. Mallinson and Blake (1982) report that as in Warlpiri, ERG case is often coincidental with instrumental case in Australian languages; or ERG may be the same as a locative case. (Compare a pre-

position such as *by.*) They note also that in Eskimo, ERG case coincides with the possessive.

It is of interest that the adsentential and adargumental functions of nominals in Warlpiri parallel the two syntactic functions of adjoined clauses in the language, as identified by Hale (1976). Adjoined clauses in Warlpiri are undifferentiated between these functions and are ambiguous if there is an anaphoric link between referential elements in the main and subordinate clauses.

- (55) ngajulu-rlu  $\emptyset$ -rna-ZERO                      yankirri- $\emptyset$   
*I-ERG      PAST-1sgNOM-3sgACC emu-ABS*  
 pantu-rnu    kuja-lpa            ngapa- $\emptyset$     nga-rnu  
*spear-PAST COMP-PAST water-ABS drink-PAST*

I speared the emu which was/while it was drinking water.

(Hale, 1976, p. 76)

If no anaphoric link between referential elements in the main and adjoined clauses is present, then the adjoined clause must be adsentential (temporal). Adjoined clauses, like nominals, are optional additions to the main clause, but nominals are syntactically integrated into the main clause, like relative clauses. The point is that nominals, like adjoined clauses, serve to add more information either to a verbal argument or to the predicate itself.<sup>16</sup>

<sup>16</sup> I will not address here the question of PRO in non-finite sentences in Warlpiri, since I lack the necessary information on person marking in infinitival clauses. There are restrictions on word order in infinitival clauses, and this plus the absence of an AUX constituent suggests that their argument structure is quite distinct from that of main clauses. The following examples are from Simpson and Bresnan (1983, pp. 51–53) who discuss control and obviation in Warlpiri:

- (i) Ngarrka-ngku ka    purlapa            yunpa-rni,  
*man-ERG      PRES corroborree-ABS sing-NPST*  
 [karli            jarnti-rninja-karra-rlu]  
*boomerang-ABS trim-INF-COMP-ERG*  
 The man is singing a corroborree, while trimming a boomerang.
- (ii) Kurdu-ngku ka    karnta    nya-nyi, [ngurlu yurpa-rninja-kurra]  
*child-ERG    PRES woman-ABS see-NPST seed-ABS grind-INF-COMP*  
 The child sees the woman grind mulga seed.

In these examples, **karra** shows that the main clause subject is the controller of the subject of the non-finite clause, while **kurra** shows that the main clause object is the controller of the subject of the non-finite clause. **kurra** in Warlpiri is the ALLATIVE ('to, toward', etc.) case particle. In example (59) below we see **kurra** followed by ERG case in a main clause nominal adjunct. It appears that infinitival clauses in Warlpiri are (complex) nominals that are adjuncts to verbal arguments in AUX in the main clause, and are introduced by a case particle/postposition. **Karra** and **kurra**, like other L-case particles, show which clitic argument (in the main clause) the complex nominal is an adjunct to.

The following is an example of a sentence with Secondary L-case nominals:

- (56) Ngarrka-patu- $\emptyset$  ka-lu karti-ngka  
*man-plural-ABS PRES-3pl NOM cards-LOC*  
 manyu-karri-mi karru-ngka.  
*play-NONPAST creek-LOC*

The men are playing (at) cards in the creekbed.

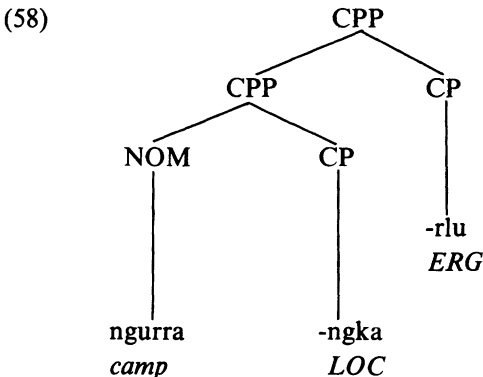
(Nash, 1980, p. 203)

It is also possible for a nominal with Secondary L-case to receive additional, Primary L-case. The following example is adapted from Simpson and Bresnan (1983, p. 57):

- (57) Ngarrka-ngku ka-ZERO-ZERO  
*man-ERG PRES-3sgNOM-3sgACC*  
 jarnti-rni karli- $\emptyset$  ngurra-ngka-rlu.  
*trim-NONPAST boomerang-ABS camp-LOC-ERG*

The man is trimming the boomerang in camp. (?The man in camp is trimming the boomerang.)

The double-case-marked CPP in (57) has the following structure:



The ERG case-marking in (57) shows that this complex CPP is adjoined to

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Simpson and Bresnan take these control phenomena as motivation for an independent level of representation in Warlpiri grammar, functional structure, where grammatical relations are marked, since main clause constituent structure does not reflect grammatical relations. I am claiming here that there is a straightforward surface representation of grammatical relations in Warlpiri main clauses, in the AUX pronominal clitics, that mark NOM/ACC/DAT case; and that any sentence without a surface representation of grammatical relations would be uninterpretable.

the NOM subject of the sentence. *Ngarrka-ngku* and *ngurra-ngka-rlu* constitute a discontinuous nominal adjunct.

The following is another example of double case marking on a CPP:

- (59) kurdu-ngku  $\emptyset$ -ZERO-ZERO maliki- $\emptyset$   
*child-ERG PAST-3sgNOM-3sgACC dog-ABS*  
 ngurra-kurra [-rlu] wajirli-pu-ngu.  
*camp-ALLATIVE [-ERG] chase-PAST*

The child chased the dog (all the way) to camp.

(Nash, 1980, p. 227)

Nash comments that if the ERG marking is present on the locative expression in this example, it indicates that the boy as well as the dog is approaching the camp; without the ERG case following the ALLATIVE case, no information on the motion or position of the referent of the subject argument is given. Examples such as these show clearly that CPPs marked ERG are adjuncts to verbal arguments, not arguments themselves.

While Primary L-case marked nominals *must* be coindexed with a clitic verbal argument, nominals with *only* Secondary L-case cannot be. Primary L-case nominals are thus linked with an element bearing a  $\theta$ -role assigned by the verb, and Secondary (only) L-case nominals are not; they cannot be associated, via a verbal argument, to some variable in the dictionary definition of the verb. Secondary L-case marked nominals receive their  $\theta$ -roles from their case particles/postpositons, and the semantic notions that they contribute to the meaning of the sentence are sentential in scope.

### 3. W-TYPE NON-CONFIGURATIONAL LANGUAGES

In the preceding section I provided some evidence for analyzing Warlpiri as a language in which the Verb-AUX complex constitutes a complete finite sentence; a verb and its arguments. I have proposed that the central feature of Warlpiri grammar is the presence of these AUX clitics which are obligatorily present and act as verbal arguments. The phonologically null third person singular arguments are not instances of empty categories; they are fully realized pronominal elements. Nominls, as opposed to the AUX clitics, are optional, and may be 'missing', 'extra', or simply fail to be coindexed with a LS argument position, if they bear a secondary L-case. I will call languages with these features W-type non-configurational languages. 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 language.



The AUX clitics have a fixed order; furthermore, AUX itself has a fixed position in the clause – the only constituent of the Warlpiri finite clause that does so. The following rough PS rule may be added to those Hale (1983) proposes for Warlpiri:

$$(60) \quad \text{AUX} \rightarrow \begin{array}{l} \text{TENSE/} \\ \text{ASPECT/} \\ \text{MODALITY} \end{array} \quad (\text{clitic}_{\text{NOM}}) \left( \left\{ \begin{array}{l} \text{clitic}_{\text{ACC}} \\ \text{clitic}_{\text{DAT}} \end{array} \right\} \right) (\text{clitic}_{\text{DAT}})$$

In finite clauses in a W-type language, nominals and the clitic verbal arguments never fall together syntactically. This is the distinctive attribute of W-type non-configurational languages: the co-occurrence of two sets of referential elements, clitics and nominals, that have distinct syntactic functions.

Advantages of this analysis of Warlpiri are as follows:

- (61) a. The Projection Principle (that is, the projection of lexical structure onto phrase structure) need not be abandoned.  
 b. We can say that any elements in PS that mark SUBJECT and OBJECT are marking NOM and ACC case.  
 c. We can explain the fact that independent pronouns in W-type languages, as in a 'pro-drop' language, are used for emphasis.  
 d. We can account for the fact that nominals are optional, and define the functions of nominals in sentences, which are quite distinct from the functions of verbal arguments.

In this section, I suggest further support for this analysis that may be gained from comparing Warlpiri with other W-type non-configurational languages.

If all W-type languages occurred within a single language family, they could be considered a single instance, the descendants of a common ancestor; or if they all occurred in a single area, we might attribute the common features to areal diffusion. This is not the case. There are W-type languages in unrelated language families, at great geographical distances. Lummi and Klallam, Coast Salish languages of the American Northwest, share the following traits with Warlpiri (Jelinek and Demers, 1982, 1983; Demers and Jelinek, 1982):

(62) W-type features:

- a. A predicate-AUX complex that constitutes a finite sentence, a verb and its arguments.  
 b. Optional, non-argumental nominals.  
 c. A case split; that is, different systems of case-marking on clitics vs. nominals.

- d. Independent pronouns (or nominal expressions that mark person) that are used for contrastive emphasis.
- e. ZERO third person marking, with a consequent lack of pleonastic subjects.
- f. Adjoined clauses with either a temporal or a relative interpretation.

This list of shared features is certainly beyond any chance association, and validates the definition of the type.<sup>17</sup> Of the features listed in (62), I consider only the first two to be definitional; the rest are associated optional features that the definition provides for, but does not require.

The Uto-Aztecan language Papago is an example of a W-type language that has split case (that is, separate systems of case-marking on clitics vs. nominals) but does not mark ERG/ABS case. Papago has a second position AUX clitic sequence (Hale, 1973; Zepeda, 1983). The subject is marked in AUX, while the object is marked in a verbal prefix. Therefore, the Verb AUX is a complete sentence, nominals are optional, and word order (except for AUX) is free. Nominals (including independent pronouns) have no G-case, and only Secondary L-case (LOC, POSS, etc.).

- (63) a. ceoj ʔo ʔa:ñi ñ-ceggia.  
*boy 3NOM 1sg 1sgACC-fight*

The boy is/was fighting me.

(Zepeda, 1983, p. 35)

In (63 a), ʔo in AUX is the third person NOM subject clitic (number is unmarked in the third person here); ʔa:ñi is an independent first person singular pronoun that is unmarked for case; and ñ- is the first person singular ACC prefix. Any word order is possible, provided AUX remains in second position.

- (63) b. ʔA:ñi ʔo ñ-ceggia g ceoj  
*1sg 3:NOM 1sgACC-fight DET boy*

- c. ñ-ceggia ʔo ʔa:ñi g ceoj  
*1sgACC-fight 3:NOM 1sg DET boy*

(A determiner is required if ceoj is not sentence initial.)

<sup>17</sup> See Kinkade (1983) for an insightful presentation of the non-argumental role of nominal adjuncts in Salish. Kinkade suggests that prior to English language influence, transitive sentences in Salish generally permitted only one nominal adjunct. This is comparable to the restriction found in many languages against adjoining more than one topic to a sentence. In Salish, the predicate-clitic complex constitutes a complete sentence.

The following example shows the second person independent and clitic pronouns:

- (64)   ʔA:pi ʔo       m-cedad   g   Klisti:na  
           2sg   3:NOM 2sgACC-kiss DET Christina  
           Christina is/was kissing you.

The following examples will show that the Verb-AUX elements mark NOM/ACC case, and the adjoined free pronouns do not mark G-case at all; there is no agreement in case between clitic pronominals and adjoined optional nominals, just as in Warlpiri.

- (65) a. ʔa:ñi ʔañ       m-neid       ʔa:pi  
           1sg   1sgNOM 2sgACC-see 2sg

I am/was looking at you.

- b. ʔa:pi ʔap       ñ-neid       ʔa:ñi  
           2sg   2sgNOM 1sgACC-see 1sg

You are/were looking at me.

(Zepeda, p.c.)

There are no case compatibility rules in Papago, since ERG/ABS case is not present. Papago differs from a configurational language where pronouns show NOM/ACC case in a crucial respect: the fact that nominals (including free pronouns) cooccur with the obligatory clitics, and are therefore optional.

To summarize: W-type languages may have a split case system, as in Warlpiri, Lummi, and Papago, where the case marking systems of AUX clitics and nominals are distinct. There are also W-type languages where clitics and nominals share the same case-marking; in Basque, both sets of referential elements have ERG/ABS case, and in Cupeño, a Uto-Aztecan language, both have NOM/ACC marking. However, both Basque and Cupeño, like other W-type languages, treat the grammatical relations of subject and object alike in assigning them to bound pronominals, and thus have optional cooccurring nominals with no fixed order.<sup>18</sup>

#### 4. 'ERGATIVE SPLITS' EXPLAINED

In the previous section, we have seen that split case is a possible, but not a necessary feature of W-type languages. The necessary feature is the presence of cooccurring sets of referential elements with distinct syntactic functions

<sup>18</sup> I thank Jane Hill for information on Cupeño.

(clitic pronouns and nominals); this split in syntactic function provides for, but does not require, split case—in particular what has been called an ‘ergative split’. Ergative splits are widespread in Australia, Asia, and the Americas (Dixon, 1979). Previous attempts at an explanation for these splits have been semantically oriented, and there is considerable current dispute over this question. The different syntactic functions of G- and L-case marking in some W-type languages identified here suggests a syntactic explanation for ergative splits. I will summarize briefly the semantically based accounts of ergative splits and the criticisms that have been brought against them, and then comment further on the connection between ergative splits and non-configurationality.

Silverstein (1976) surveyed a wide variety of systems of ranking of referential elements across languages, and concluded that all were consistent with the following hierarchy of features:

- (66) 1 > 2 > 3 > proper > human > animate > inanimate

(First and second person often fall together, or 2 may outrank 1.) Silverstein proposed that this ranking follows from the speaker’s and hearer’s expectations as to *agency*. Ergative split occurs because first and second persons are more often agents, and receive NOM case marking—the “unmarked” case; while nominals are more likely to be *patients* and receive ABS case marking—the “unmarked” case in an ERG/ABS system. In such splits, third person may side either with first and second person or with nominals in case marking in a particular language. In ‘ergative split’ languages, a referential item is marked ACC when it is in the atypical role, the *patient*, and an item is marked ERG when it is in the atypical function of *agent*. (See Dixon, 1979, for a discussion of Silverstein’s views on this question.)

More recently, Mallinson and Blake (1982) argue that the speech act participants’ expectations as to agency are not the determining factor in case splits of this kind; they cite Wierzbicka’s (1981) claims to the contrary, based on text counts on the relationship between person and agency. Mallinson and Blake add further counts, including some from Australian Aboriginal texts, and conclude that these counts show no overwhelming proportion of 1 agents or 2 agents. They propose that the factor underlying ergative splits is not the likelihood of agency but topic-worthiness:

We want to point out that accusative languages take the agent of a transitive verb to be the normal filler of the topic position but that this is not universal, however natural it might seem to English speakers. Ergative languages take the patient to be the normal filler of the topic position. . . . We reviewed various attempts to explain the incomplete spread of A and O marking across the spectrum. Silverstein saw the distribution as reflecting the propensity of a participant

to be agent or patient, 'good' agents tended to lack A marking, 'good' patients tended to lack O marking. . . . we suggested that the gross distribution of marking in this area also reflected topicality. In accusative languages the nominative, typically unmarked, is the prime topic position. In ergative languages the absolutive, almost always unmarked, is the prime topic position. The accusative and ergative mark secondary topic positions. (Mallinson and Blake, 1982, pp. 114–115.)

Mallinson and Blake suggest, then, that where ergative splits occur it is because the higher ranked elements (first, second, and sometimes third person pronominal) have a tendency to be topicalized as agents, while lower ranked elements (nominals and sometimes third person pronominal) tend to be topicalized as patients. This seems to lead us back to the feature of agency as the underlying factor in ergative splits, and suggests a very different kind of ergative split, unattested as far as I know:

- (67) a. I hit the boy                    (where agent is topic)  
           NOM            ACC
- b. I hit the boy                    (where patient is topic)  
           ERG            ABS

There is clear evidence that some languages rank NPs with regard to animacy, agency, or volition; see for example the discussion in Witherspoon (1977) and in Hale, Jeanne and Platero (1977) for a NP hierarchy in Navajo. However, a split in case marking between clitic pronouns on the one hand and nominals on the other is quite different. Mallinson and Blake's proposal leaves unexplained the following facts about W-type languages:

- (68) a. The fact that NOM/ACC bound pronouns of any person cooccur with and are coindexed with any nominal of compatible case marking, despite their differences in rank.
- b. The fact that bound and independent pronouns mark the same semantic features of person and number, and thus should match in rank; yet the former may (in some 'ergative split' languages, including Warlpiri) have NOM/ACC case, while the latter have ERG/ABS case.

Comrie (1981) isolates many of the semantic factors involved in animacy hierarchies and concludes, regarding topic-worthiness:

. . . [W]hat is the basis of topic-worthiness? The danger here is that of answering this question circularly, by citing as the bases of topic-worthiness precisely those parameters which are included in the animacy hierarchy. . . . Our conclusion then, is that the animacy hierarchy cannot be reduced to any single parameter, but rather reflects a natural human interaction among several parameters (1981, p. 192).

Comrie notes a particular problem in connection with the kind of ergative split we have seen in W-type languages:

[The animacy] hierarchy, even as established in purely linguistic terms, is not a single linear parameter on which all individual noun phrases can be arranged. The pronoun/non-pronoun opposition in fact cross-cuts the human/nonhuman or animate/inanimate opposition. (p. 188)

In short, Comrie finds that no single semantic feature can account for the diversity seen in agent/topicality/animacy hierarchies; and that in particular the kind of split in case marking that separates pronouns and non-pronouns is puzzling in that it is orthogonal to the ranking of NPs by animacy or agency. It is just this kind of ergative split that, as we have seen in Warlpiri, has clear syntactic functions. Clitic pronouns are governed by the Verb-AUX, and carry NOM/ACC/DAT G-case; nominals are governed by their case particles/postpositions, and carry ERG/ABS/DAT (or other) L-case. The distribution and function of these case systems are entirely distinct.

A problem with the explanation for ergative splits advanced here is that they are not uniform; some languages have third person clitic pronouns that mark ERG/ABS case. Since languages with ERG/ABS third person clitics often are related historically to languages with full splits between clitics and nominals, I suggest that there is a historical instability in split case systems because of the following factors: a) third person clitics, unlike first and second person (that are uniquely referential in context) often cooccur with some nominal that aids in reference; and b) third person AUX elements are often phonologically null. These factors set the stage for the emergence of overt third person clitics that match nominals in ERG/ABS case. In Australian languages, such ERG/ABS clitics are often clearly related to determiners and demonstratives. It is highly significant that, as Dixon (1979) notes, there are no splits between free pronouns and clitic pronouns where the former have NOM/ACC case and the latter have ERG/ABS case. And, Mallinson and Blake (1982) point out that there is no language known to have ERG/ABS case marking on bound person marking elements and NOM/ACC marking on nominals; we should expect these types of 'ergative split' to be excluded if splits originate from a system in which the syntactic functions of clitic pronouns as verbal arguments having grammatical case are distinct from the syntactic functions (adsentential and adargumental) of nominals with L-case.

According to data given in Blake (1977) we may generalize as follows with reference to case systems in Australia:

(69) Case Marking in Australian Languages:

- a. There are a few languages with only NOM/ACC marking and no clitic pronouns.
- b. There are a few languages with only ERG/ABS marking and no clitic pronouns.

- c. The great majority of Australian languages have an ergative split and clitic pronouns. The most common pattern is NOM/ACC on *both* clitic pronouns and independent pronouns, and ERG/ABS on nominals.
- d. There is a smaller group with no clitic pronouns and an ergative split, with NOM/ACC on independent pronouns and ERG/ABS marking on nominals.
- e. There is a residual group of languages, mostly non-Pama-Nyungan, that have NOM/ACC or three-way marking on clitic pronouns, and *no* case marking at all on nominals.

Groups (a) and (b) are clearly not W-type languages; nominals are verbal arguments. Groups (a) through (d) are related; I have no information on the evidence for the direction of historical change.<sup>19</sup> Group (c) is the predominant W-type, and includes Warlpiri, which is atypical in having ERG/ABS case on independent pronouns. (The case of free pronouns is irrelevant, when they occur only for emphasis along with the clitics, and do not serve as verbal arguments.) Members of group (d) may also be W-type, with only independent pronouns serving as verbal arguments, if an analysis of ZERO third person pronouns co-occurring with nominals can be justified (for example, if a verb alone is unambiguously interpreted as having third person arguments). It is possible that group (e) is also W-type, like Papago, since the crucial feature of W-type languages is that nominals are not verbal arguments, and therefore need not carry grammatical case.

Mallison and Blake (1982) identify the following languages as having NOM/ACC marking on bound person markers and no case marking on nominals: the Bantu languages and other Niger-Congo groups; Ulithian (Micronesian); Iai and Lenakel (Melanesian), and Nahuatl (Uto-Aztecan) as well as the northern Australian languages mentioned above. They add:

We could recognize a sub-type in which the free pronouns operate in an accusative paradigm. This sub-type would include the Celtic languages and some Chadic languages such as Hausa. (p. 71)

They note also that Tongan (Polynesian) resembles Dyrbal and other Australian languages in having no bound person markers and an ergative split (group (d)) above.

<sup>19</sup> Dixon (1979), citing Hale (1973) reconstructs the following historical development for Warlpiri:

- a. Ergative split: Pronouns NOM/ACC, Nominals ERG/ABS.
- b. The development of clitic pronominals with NOM/ACC case; free pronouns become optional.
- c. The ERG/ABS case marking on nominals is generalized onto the independent pronouns.

The predominant pattern involves the crucial features seen in the W-type: bound person markers with NOM/ACC case, and cooccurring nominals without G-case. It is important also that there are apparently no counter-cases; no languages with ERG/ABS case marking on clitics and NOM/ACC (the grammatical cases) on nominals or free pronouns. This distribution of case marking systems across languages appears to lend support to the interpretation of ergative splits suggested here, and to the view that NOM/ACC are G-cases, while ERG/ABS, in these languages, tend to be L-cases.

#### 5. A REVISED CONFIGURATIONALITY PARAMETER

I do not intend to claim that all non-configurational languages resemble Warlpiri in having obligatory clitic verbal arguments that are distinct from non-argumental nominals; there may be other sources of non-configurationality. Hale (1983), Kitagawa (1983) and Farmer (1983) argue that Japanese is non-configurational, while Saito and Hoji (1983) argue that it is not. I will not attempt to resolve this issue here.

Japanese differs sharply from W-type languages in having no clitic pronouns; in fact, there is no person marking in INFL at all in Japanese. The nominals that correspond to independent pronouns in Japanese lack some of the syntactic properties of pronouns in configurational languages. (See Kitagawa, 1979, 1982).

Japanese appears to resemble W-type languages in the optionality of nominals and their relatively free word order. In general, Japanese nominals do not have fixed positions in the clause corresponding to their grammatical functions. Japanese nominals have case particles/postpositions that mark grammatical relations (-*ga* NOM, -*o* ACC, -*ni* DAT). These nominals may be absent, and there are no person markers that make them recoverable. Therefore, there is no surface expression of grammatical relations, and an apparent failure of the Projection Principle. The problem, then, is to account for these missing nominals.

So far we have identified two quite different factors resulting in "missing" nominals;

- (70) a. Nominals that are recoverable because of certain syntactic principles and processes: NP movement, control, etc. These principles and processes are represented at surface structure by ECS.
- b. Nominals that do not serve as verbal arguments and are optional adjuncts.

Japanese sentences may lack nominals for reasons other than those given in



(70). Speakers of Japanese exploit discourse relations between sentences and contextual factors to omit nominals that are readily recoverable in context – ‘discourse topics’. The verb complex alone may constitute a complete utterance, or any or all of the nominals carrying grammatical relations may be present. The following example, consisting of the finite verb, is acceptable in discourse:

- (71) Tabe-ta.  
eat-PAST  
' ( ) ate ( ) '.

In context, the hearer is able to make inferences about the referents of the missing nominals; he knows what matters are under discussion. Kitagawa (personal communication) likens the pragmatic strategies used in identifying the unspecified arguments of Japanese sentences to those that English speakers use in interpreting postcards and telegrams. The first strategy is to assume that the missing argument corresponds to the speaker, next the hearer, and last some third person, if the context makes earlier conjectures unlikely.

The missing nominals in (71) are not recoverable by virtue of syntactic principles and processes, as in the empty categories (PRO, *pro*, *trace*, and *variable*) defined in Chomsky (1982). Neither are they instances of a phonologically null pronoun, as in the case of the Warlpiri ZERO third person singular. In the case of empty categories, an NP is ‘missing’ under syntactic conditions (agreement, binding or control) that permit the hearer to restore the absent element without ambiguity. In the case of a ZERO pronoun, there is nothing missing and no ambiguity. But a Japanese sentence like (71) is ambiguous. It is not a case of underdetermined reference, as with a third person pronominal; a uniquely referential (speech act participant) first or second person may be the speaker’s intended referent. Hearing (71) it is possible for the hearer to misunderstand, to mistake the speaker’s referential intent, and the error in interpretation is an error of inference, not an error of grammatical performance.<sup>20</sup>

I conclude that an account of the missing nominals as in (71) is not a

<sup>20</sup> **Tabe-ta** cannot be interpreted as being arbitrary or non-specific in reference. If the speaker intends to convey

- (i) Dareka-ga nanika-o tabe-ta  
*Somebody-NOM something-ACC eat-PAST*

Somebody ate something.

the nominals **dareka** and **nanika** cannot be omitted. (Kitagawa, personal communication.) Only nominals with specific reference in context can be omitted.

part of sentence grammar, but of the (language particular) grammar of discourse. It reflects a linguistic tradition in which sentence partials are more acceptable in discourse than they are in some other speech communities. Sentence partials must be well-formed; but as their interpretation depends upon discourse factors, their grammar lies outside sentence grammar. This kind of omission of nominals is completely unrelated to non-configurationality; Chinese, a configurational language, exhibits this same feature.<sup>21</sup>

In a configurational language, some nominals (objects) are properly governed by the verb; nominals that are so governed form part of a constituent of which the verb is the head, the VP. In a W-type language, all nominals are governed by their case particles/prepositions; CPPs are sisters to the verb under S. Japanese verbal arguments, like Warlpiri nominals, are Case Particle Phrases; and Japanese resembles W-type languages in that the order of these CPPs, when present, is relatively free. If Japanese is in fact non-configurational, it represents a sub-type that shares these features with W-type languages.

I have identified the following sources of free word order across languages:

- (72) Nominals may lack fixed positions in the clause reflecting grammatical relations if:
- a. They have no grammatical relations.
  - b. Their case marking shows their grammatical relations.
  - c. Their presence or order reflects pragmatic factors.

Note that these factors influencing word order are not mutually exclusive. Warlpiri shows (72a) and (72c); Japanese shows (72b) and (72c). In contrast, Chinese permits nominals to be 'dropped' in context, according to pragmatic factors; but the lack of case marking in Chinese makes it necessary for nominals, when present, to appear in an order that reflects their grammatical functions. The defining feature of configurationality is as follows:

- (73) Configurationality Parameter (Extended):
- a. In a configurational language, object nominals are properly governed by the verb.
  - b. In a W-type non-configurational language, nominals are not verbal arguments, but are optional adjuncts to the clitic pronouns that serve as verbal arguments.

<sup>21</sup> See discussion on this point in C. T. James Huang (1983). Huang classifies Chinese and Japanese as "discourse oriented" languages, while English is a "sentence oriented" language.

Whereas grammatical relations are defined configurationally in (73a), there is no asymmetry between subject and object in (73b).

I have argued here that in non-configurational languages, as in all languages, lexical structure is projected onto phrase structure. I have accounted for the association between non-configurationality and 'ergative splits' and have proposed a syntactic, rather than a semantic, explanation for certain 'splits' as reflecting the distinct syntactic functions of clitics vs. nominals in what have been termed 'clitic doubling' languages. I have suggested that the explanation given here for the fact that nominals may be 'missing' in Warlpiri main clauses may be extended to account for 'missing' subjects in so-called 'pro-drop' languages.

All the languages under consideration here are agglutinative; that is, more of the grammatical apparatus is morphologically constituted than in a configurational language that places more of the burden on syntax. Not all agglutinative languages are non-configurational, but the reverse inclusion may hold. In a configurational language, one predicational item may be directly governed by another, that is, nouns may be directly governed by a verb. In a non-configurational language with less complex syntactic structures, nominals are governed by case particles and strung together with verbs in 'flatter' syntactic structures. These flatter syntactic structures are comparable to the kinds of adjoined sentences seen in logical form. Hale's work on Australian, Native American, and Asian languages led him to the recognition of non-configurationality as a central feature in the grammar of many of these languages, seemingly unrelated and widely scattered all over the world.

#### REFERENCES

- Aoun, Youssef: 1981, 'Expletive PROs,' MIT Working Papers in Linguistics, pp. 1-4.  
 Borer, Hagit: 1981, 'Comments on the Pro-drop Phenomena,' *MIT Working Papers in Linguistics*, pp. 127-149.  
 Blake, B. J.: 1977, *Case Marking in Australian Languages*, Linguistic Series No. 23, Australian Institute of Aboriginal Studies, Canberra.  
 Chomsky, N.: 1981, *Lectures on Government and Binding*, Foris, Dordrecht.  
 ———: 1982, *Some Concepts and Consequences of the Theory of Government and Binding*, Linguistic Inquiry Monograph Six, MIT Press, Cambridge.  
 Comrie, Bernard: 1981, *Language Universals and Linguistic Typology*, University of Chicago Press.  
 Demers, R. A. and E. Jelinek: 1982, 'The Syntactic Functions of Person Marking in Lummi,' *Working Papers for the 17th International Conference on Salish and Neighboring Languages*, Portland State University, Portland, Oregon.  
 Dixon, R. M. W.: 1972, *The Dyirbal Language of North Queensland*, Cambridge University Press.

- Dixon, R. M. W.: 1979, 'Ergativity,' *Language* 55, 59-138.
- Dixon, R. M. W. and B. J. Blake: 1979, *Handbook of Australian Languages*, The Australian National University Press, Canberra.
- Farmer, Ann: 1983, 'Consequences of the Configurationality Parameter,' University of Arizona MS.
- : 1984, *Modularity in Syntax: A Comparison of Japanese and English*, MIT Press.
- Hale, K.: 1967, 'Preliminary Remarks on Walbiri Grammar,' MIT mimeo.
- : 1970, 'The Passive and Ergative in Language Change; The Australian Case,' *Pacific Linguistic Studies in Honour of Arthur Capell*, Linguistic Circle of Canberra, Canberra.
- : 1973, 'Person Marking in Walbiri,' in S. R. Anderson and P. Kiparsky (eds.), *A Festschrift for Morris Halle*, Holt, Rinehart and Winston, New York.
- : 1976, 'The Adjoined Relative Clause in Australia,' in R. M. W. Dixon (ed.), *Grammatical Categories in Australian Languages*, Humanities Press, New Jersey.
- : 1980, 'Remarks on Japanese Phrase Structure: Comments on the Papers on Japanese Syntax,' in Y. Otsu and A. Farmer (eds.), *MIT Working Papers in Linguistics*, Vol. 2.
- : 1981, 'On the Position of Warlpiri in a Typology of the Base,' Indiana University Linguistics Club, Bloomington.
- : 1982, 'Preliminary Remarks on Configurationality,' in J. Pustejovsky and P. Sells (eds.), *NELS* 12, 86-96.
- : 1983, 'Warlpiri and the Grammar of Non-configurational Languages,' *NLLT*, 1, 5-47.
- , L. Jeanne, and P. Platero: 1977, 'Three Cases of Overgeneration,' in P. Culicover, T. Wasow, and A. Akmajian (eds.), *Formal Syntax*, Academic Press, New York.
- Huang, C. T. James: (n.d.), MS, 'On the Distribution and Reference of Empty Pronouns.'
- Jelinek, Eloise: 1983a, 'Person Marking in AUX in Egyptian Arabic,' in F. Heny and B. Richards (eds.), *Linguistic Categories: Auxiliaries and Related Puzzles*, Vol. I, Reidel, Dordrecht, pp. 21-46.
- : 1983b, 'Case and Configurationality,' *Coyote Papers*, Vol. 4, University of Arizona, Tucson, pp. 73-108.
- , and R. A. Demers: 1982, 'Adjoined Clauses in Lummi,' in *Working Papers for the 17th International Conference on Salish and Neighboring Languages*, Portland State University, Portland, Oregon.
- , and R. A. Demers: 1983, 'An Agent Hierarchy and Voice in Some Coast Salish Languages,' *IJAL*, 49, 167-185.
- Kinkade, M. Dale: 1983, 'Salish Evidence Against the Universality of "Noun" and "Verb",' *Lingua* 60, 25-40.
- Kitagawa, C.: 1979, 'A Note on *Sono and Ano*,' in G. Bedell, Kobayashi, and Muraki (eds.), *Explorations in Linguistics, Papers in Honor of Kazuko Inoue*, Kenkyusha, Tokyo.
- : 1981, 'Anaphora in Japanese: *Kare and Zibun*,' in Ann Farmer and C. Kitagawa (eds.), *Proceedings of the Arizona Conference on Japanese Linguistics*, University of Arizona Working Papers in Linguistics.
- : 1982, 'Topic Constructions in Japanese,' *Lingua* 57, 175-214.
- : 1983, 'Case Marking and Nonconfigurationality,' MS, University of Arizona.
- Mallinson, G. and B. J. Blake: 1981, *Language Typology*, North-Holland, Amsterdam.
- Nash, D. G.: 1980, *Topics in Warlpiri Grammar*, unpublished PhD dissertation, MIT.
- Saito, M. and Hajime Hoji: 1983, 'Weak Crossover and Move  $\alpha$  in Japanese,' *NLLT* 1, 245-259.
- Simpson, Jane and Joan Bresnan: 1983, 'Control and Obviation in Warlpiri,' *NLLT* 1, 49-64.
- Steele, S., et al.: 1981, *An Encyclopedia of AUX: A Study in Cross-Linguistic Equivalence*. *Linguistic Inquiry Monograph Five*, MIT Press.
- Steele, S.: To appear, *A Syntax of Luiseño*.
- Wierzbicka, A.: 1981, 'Case Marking and Human Nature,' *Australian Journal of Linguistics* 1, 43-80.

Witherspoon, Gary: 1977, *Language and Art in the Navajo Universe*, University of Michigan Press, Ann Arbor.

Zepeda, Ofelia: 1983, *Papago Grammar*, University of Arizona Press, Tucson.

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This paper explains the famous *yi/bi* alternation in Apachean languages, with a focus on Jicarilla Apache. The paper argues that this alternation is not a passive, but simply indicates an inverse relationship coded on the verb. This coding is reflective of the PA status of the language. DPs in Apache are adjuncts and as such are ordered by considerations other than grammatical relations (they are ordered by an animacy hierarchy). The adjuncts are linked to the pronominal argument via a set of linking principles. This article is important because it sets out the first non-Australian application of the PAH.

# The *bi*-Construction and Pronominal Arguments in Apachean<sup>1</sup>

Merton Sandoval, Eloise Jelinek

## O. Introduction

A conspicuous feature of Apachean syntax is the alternation between the *yi*- and *bi*- verbal prefixes that appears in sentences with all third person arguments, as in the following examples from Navajo:

(1)  $\text{ʔi}^{\text{h}}$  dzaaneez yiztaʔ  
horse mule *yi*-kicked  
'The horse kicked the mule.'

(2)  $\text{ʔi}^{\text{h}}$  dzaaneez biztaʔ  
horse mule *bi*-kicked  
'The horse got kicked by the mule.'

The *bi*- construction has been termed 'passive' or 'passive-like' because of the contrast in the interpretation of sentences with *yi*-/*bi*-, as the gloss for (2) is intended to suggest. Previous writers on this topic have described the *bi*- prefix as marking a change in the grammatical relations of the nominals in the sentence, resulting in a "Subject-Object" inversion.

(3) Subject Object *yi*-verb  
Object Subject *bi*-verb

Perkins, in her 1978 dissertation, extended the analysis so as to include sentences with indirect objects, and claimed that the

grammatical relations of nominals are altered as follows in the ditransitive *bi*-construction.

- (4) Subject Indirect Object Object *yi*-Verb  
 Indirect Object Subject Object *bi*-Verb

The *yi/bi*- alternation plays a crucial role in the interesting "NP hierarchy", as described by Hale (1973), Creamer (1974) and Witherspoon (1977). Apachean nominals are ranked according to animacy/ volition/ cognitive ability, so that a sentence such as

- (5) ?? ʔiĩ hastiin yiztaʔ  
 horse man *yi*-kicked  
 ?? 'The horse kicked the man.'

is culturally "odd" and not employed, since it carries the implication that the horse has more volition and intelligence than the man. If the horse is understood as a supernatural being, with greater than human powers, then the sentence is acceptable; this fact demonstrates that the sentence is not ungrammatical, but pragmatically unacceptable. (See discussion in Hale, et al., 1977.) To describe a state of affairs in which a man gets kicked by an ordinary horse, the *bi*-construction is employed.

- (6) hastiin ʔiĩ biztaʔ  
 man horse *bi*-kicked  
 'The man got kicked by the horse.'

It should be emphasized here that the *yi/bi*- contrast is present only in sentences with all third person arguments, and that a sentence such as



- (7)  $\text{t}\ddot{\text{u}}\ddot{\text{t}}\text{' shizta}\text{t}$   
 horse me-kicked  
 'The horse kicked me.'

is perfectly acceptable. In other words, first and second person do not participate in the animacy hierarchy. Our focus in this paper will not be the animacy hierarchy, which reflects pragmatic factors, but the syntax of the *bi*-construction itself, and the rules of interpretation that apply, as shown by the contrasting glosses in sentences 1) and 2).

Chomsky (1981, pp. 120-121) addresses the question of whether the Navajo *bi*-construction should be termed a passive:

'The question makes sense if 'passive' is a natural class, though it is unclear what the answer should be. The question does not arise if we simply assume that languages have various ways to avoid focusing the "logical subject" or to avoid expressing one at all, while still observing the syntactic requirement that a subject NP be present ... In short, it is not obvious that the notion 'passive' refers to a unitary phenomenon, still less one than can serve as a foundation stone or even guiding intuition for a theory of syntax. It may be a useful descriptive category, and one can imagine functional explanations for the prevalence of some such device. But the range of phenomena that fall within this category in some sense appear to be rather heterogeneous in character.'

We will develop here an analysis of the *bi*-construction that differs fundamentally from those previously proposed. It is clear that the Apachean *bi*-construction is a member of the class of structures that, across languages, are employed to avoid focusing the "logical subject" (the agent, in a transitive sentence), as Chomsky notes in the passage cited. However, we take exception here to Chomsky's implicit assumption that there is in universal grammar a "syntactic requirement that a

subject NP be present" (emphasis ours). Such an assumption underlies the Extended Projection Principle (Chomsky 1982).

- (8 a) The  $\theta$ -marking properties of each lexical item must be represented categorially at each syntactic level.  
 b) Every clause must have a subject.

The term "categorial" in (8a) refers to a syntactic category, and means that unless there is a free lexical item (NP) to fill a clausal argument position, an Empty Category (PRO, pro, trace) is postulated in the Government and Binding framework.

Compare the following Navajo sentences with their English glosses:

- |       |                |                       |
|-------|----------------|-----------------------|
| (9 a) | yiztał         | b) biztał             |
|       | yi-kicked      | bi-kicked             |
|       | He kicked him. | He got kicked by him. |

The translations given (9) show that English is a Lexical Argument language, where independent lexical items (NPs) serve as the clausal arguments. In contrast, in the Navajo sentences in (9), all arguments are realized in the verbal morphology; Navajo is a Pronominal Argument language. The inflected verb alone can serve as a complete sentence. Our reasons for not viewing the pronominal inflection as "agreement" will be given in Section 1 below. Nominals in these languages are optional adjuncts; there is no requirement for the "categorial" representation of the subject, no VP node, and no government of lexical objects.<sup>2</sup> (See Jelinek 1985, for a discussion of this typological parameter).

Our proposal is that in Apachean, NPs are never required subject and object constituents, since nominals in themselves cannot serve as verbal arguments.<sup>3</sup> The person-marking prefixes that appear in the Apachean inflectional morphology are the clausal arguments, and satisfy the universal requirement that all arguments be realized at the level of phrase

structure if the clause is to be grammatical. Since Apachean nominals are only adjuncts, they have no grammatical relations independently of the pronominal element they are in adjunction to. We assume, on the basis of the interpretation of sentences, that the pronominal argument and any nominal that may be an adjunct to it form a complex constituent with the pronominal as head (comparable to a relative clause and its head), at the level of logical form or semantic structure. The pronominals have case and  $\theta$ -roles, as reflected in their relative order (Indirect Object - Object - Subject - Verb; see Kari 1976 and Young and Morgan 1980). If the person marking prefixes are recognized as arguments, rather than agreement markers, then the Projection Principle can be seen to apply to Apachean. However, since the pronominal prefixes are always present, in contrast to the optional adjuncts, there are no clause types in Navajo and Apache with "missing" arguments, and no empty categories need be invoked in their analysis. Questions regarding the morphology/syntax boundary in universal grammar need to be resolved here.

The analysis of the *bi*-construction given here will incorporate the following:

- a) The definition of the syntactic functions of nominals in Apachean as ad-argumental adjuncts, not as independent arguments (subjects and objects).
- b) Specification of the coindexing rules that account for differences in the coreference of pronominal arguments and nominal adjuncts in the *yi*- vs. *bi*- constructions.
- c) Evidence that the *yi*-/*bi*- alternation involves a change in the grammatical relations of the pronominal prefixes, such that a pronominal argument with the  $\theta$ -role of Patient or Goal has the grammatical relation of SUBJECT in the *bi*-construction.
- d) Identification of the *bi*-construction as a transitive, inverse construction, and therefore not a passive. Here we follow the analysis presented by Willie (this volume).

We will also show the role of the *yi-/bi-* contrast in comparative and relational sentences, two interesting sentence types in Apachean described in Sandoval (1984) in connection with the syntactic functions of the *bi-*construction.

Preceding examples have been drawn from the literature on the *bi-*construction, and are in Navajo. Example sentences in the ensuing sections are in closely related Jicarilla Apache, the first language of the first author, Sandoval, with the exception of a few examples that are specifically identified as Navajo.

### 1. Person-marking prefixes as verbal arguments in Apachean

The elaborate inflectional morphology of the Athabaskan verb has been extensively documented; however, there are few exhaustive analyses of the complex phonological processes of fusion and incorporation that occur. Hoijer (1945), Hale (1972), Kari (1976) and Young and Morgan (1980) have made remarkable contributions of this kind in the analysis of Apachean. Our goal here is only to point out that there is general agreement that the Apachean verb is inflected so as to show a) the person and number of the subject of intransitive verbs, as in

- |                                                |                                                      |
|------------------------------------------------|------------------------------------------------------|
| (10) na'ishkòh<br>1sS-swim<br>'I am swimming.' | (11) nada'ìtkòh<br>3plS-swim<br>'They are swimming.' |
|------------------------------------------------|------------------------------------------------------|

and b) the person and number of the subject and object of transitive verbs, as in

- |                                                   |                                                    |
|---------------------------------------------------|----------------------------------------------------|
| (12) hish'ì<br>3sO-1sS-see<br>'I see him/her/it.' | (13) daanahaa'ì<br>1plO-3plS-see<br>'They see us.' |
|---------------------------------------------------|----------------------------------------------------|

In examples (10-13), the inflected verb serves as a complete sentence, a complete predicate/argument structure. In Apachean sentences of this kind, a nominal is added to the sentence only when additional predicational material is needed to aid in reference.

- |                                                                                   |                                                                      |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------|
| (14) ch'ekéé na'iłkóh<br>girl(s) 3sS-swim<br>'The girl is swimming.' <sup>4</sup> | (15) ch'ekéé daahish'į<br>girl(s) 3plO-lsS-see<br>'I see the girls.' |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------|

A contrast between singular, dual, and plural pronominal subjects is present except in the third person. Where both subject and object are third person, plural number may be marked only once.

- |                              |                                                                             |
|------------------------------|-----------------------------------------------------------------------------|
| (16) yaa'į<br>'He sees him.' | (17) daayaa'į<br>'He sees them';<br>'They see him'; or,<br>'They see them.' |
|------------------------------|-----------------------------------------------------------------------------|

Example (17) is multiply ambiguous with respect to number, but both arguments are specified as third person. For details see Sandoval (1984).

The syntax of double object constructions (ditransitives) is more complex. The indirect object or goal argument is most often a pronominal prefix on a postposition, as in

- (18) maa né'á  
3-to lsS-gave [3sO]  
'I gave it to him.'

In (18), the postpositional phrase *maa* has a prefix *m(i)-* (*bi-*) that marks a third person pronominal goal argument.<sup>5</sup> The verb *-'á* "to give a single, round solid object" has an incorporated (3s) theme argument. In third person ditransitive

forms, the inflected postposition and verb are often a single phonological unit ("word").

- (19) yadeinń'á  
 3-to-3plS-gave[3sO]  
 'They gave it to him.'

We turn now to a survey of the evidence that nominals are adjuncts and not verbal arguments in Apachean. The examples given earlier have shown that the inflected verb (or verb-postpositional complex) is accepted as a complete sentence. Now we want to argue against an analysis involving multiple "pro-drop" or instances of other empty categories.

In Apachean, as in the so-called "pro-drop" languages, there are independent pronouns as well as the person-marking pronominal inflections. But it is significant that these independent pronouns occur only with a special function, that of referential contrast. Compare:

- |                                                                                                        |                                                                                                                                |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <p>(20) nísh'í<br/>         2sO-1sS-see<br/>         'I see you.'</p>                                  | <p>(21) shí nísh'í<br/>         I 2sO-1sS-see<br/>         'I'm the one that sees you' or<br/>         'I myself see you.'</p> |
| <p>(22) di nísh'í<br/>         you 2sO-1sS-see<br/>         'I see you' or "You're the one I see.'</p> |                                                                                                                                |

Sentences with independent pronouns are marked constructions in Apachean, with contrastive emphasis on an argument. Therefore, sentences with two independent pronouns are odd or questionable:

- (23) ??shi di nísh'í     'I see you.'

Furthermore, because of this specialized use of the independent pronouns in referential contrast, there are certain verbs that exclude pronominal adjuncts:

- |        |                                          |    |                                           |
|--------|------------------------------------------|----|-------------------------------------------|
| (24 a) | naagołkijj<br>3sS-rain<br>It's raining.' | b) | *'éí      naagołkijj<br>that one 3sS-rain |
|--------|------------------------------------------|----|-------------------------------------------|

Another example of a stative verb that excludes an independent pronoun is:

- |        |         |                                            |
|--------|---------|--------------------------------------------|
| (25 a) | 'jjs'ah | 'It's late (a long time has passed).'      |
| b)     | 'is'ah  | 'It will be long (a long time will pass).' |

There are no pleonastic subjects in Apachean, since there is no syntactic requirement for an NP subject. And since referential contrast is impossible with impersonal verbs of the kind exemplified in (24-25), independent pronouns do not occur. These facts about the distribution of independent pronouns suggest that the person-marking verbal inflection is not "agreement".

Nominals in Apachean (including independent pronouns) are never case-marked; this is consistent with their non-argumental status. Pronominal prefixes on the other hand are always attached either to the verb or postposition that assigns case. Neither postpositions nor verbs ever occur without pronominal inflection, and the order of the prefixes in the postposition-verb complex reflects case. Accusative case precedes Nominative case (Examples 12-17) except where the object argument is expressed in a semantic feature of the verb, and order is not relevant (Examples 18,19). In these examples, Dative or Oblique case is assigned by postpositions that precede the verbal prefixes.

With rare exceptions, the Apachean nominal does not show number distinctions.<sup>6</sup> In Jicarilla Apache, there appears to be only one nominal that marks plural number:

(26) tsj'ıkéeé 'teen-aged boys or young men'

Thus "agreement" in number, or "government" in terms of case assignment, does not appear to be relevant to the relation between verbs and nouns in Apachean, and nominal adjunction seems to be a plausible account of the relation.<sup>7</sup> We have seen also that there are restrictions on the occurrence of independent pronouns that are not consistent with their being argumental in function. In sum, pronominal prefixes are always present in accordance with the subcategorization of the verb (with the sole exception of object incorporation (as shown in Examples 18, 19). In contrast, lexical NPs are optional and infrequent additions to the sentence. The structure we propose for Apachean sentences with nominals is as follows:

(27) S --> (Nom) S

We do not label the structure including the adjoined nominal S', since the nominal is not in COMP, nor is it a topic. There are topic-like constructions in Jicarilla:

(28) ch'ekéeé'ı́ nada'ı́kq̄h  
 girl-DET / 3plS-swim  
 'The girls, they are swimming.'

29) ch'ekéeé'āa nada'ı́kq̄h  
 girl-about / 3plS-swim  
 'As for the girls, they are swimming.'

Optional pauses may appear after any nominal; in the topic-like constructions shown in (28, 29) the pauses are longer.



In Sandoval's work with text analysis, it has become clear that nominals are added only when clarification is necessary, or when new referents are introduced. The following is from a recording of a narrative told by Mrs. Margarita Sandoval (Sandoval 1983, p.1):

Gaat'ígo        nahá 'anlé        náą́łni        daayiiłni  
When it is light for us    you make    possibly    they said to him

ná  
that's how it is told

Doo\_\_\_da        daabiiłni        ná  
No-o-o-o        he told them    that's how it is told

dooda daabiiłninda    daayókąąhgo    yanaada'iit'éigo  
no    even though he    when they were    when they repeat-  
told them        begging him        edly supplicated him

díj'íshdi        silígo  
four times    when it became

'aoo biiłni        ná  
yes    he said to them    that's how it is told

An analysis in terms of optional nominal adjunction and a recognition of the non-argumental status of nominals will make it possible to give a clear and straightforward account of how the *yi-/bi-* alternation functions in Apachean. On this analysis, we will not need to postulate PRO, pro or other empty categories, in contrast to earlier treatments of the *yi-/bi-* constructions in Navajo.

In the next section we will see how particular verb types permit different sets of nominal adjuncts.

## 2. Subcategorization of the verb

Jicarilla Apache verbs may be classified as follows:

### (30) 1. Intransitive (1 argument)

Yáą̀tkíh      V<sub>1</sub>  
 3sS-spoke  
 'He spoke.'  
 X

### 2. Transitive (2 arguments)

a) Yíjłtsá      V<sub>2</sub>  
 3sO-3sS-saw  
 'He saw him.'  
 X      Y

b) Yich'í yáą̀tkíh      V'<sub>2</sub> (V<sub>1</sub> + PP)  
 3-to 3sS-spoke  
 'He spoke to him.'  
 X      Y

### 3. Ditransitive (3 arguments)

a) Sheidinntsi      V<sub>3</sub>  
 1s1O-3sO-3sS poked  
 'He poked it at me.'  
 X      Y      Z

- b) Yá 'ayjilaa V'<sub>3</sub> (V<sub>2</sub> + PP)  
 3-for 3sO-3sS-made  
 'He made it for him.'  
 X            Y        Z
- c) Yá yich'í yáątkíh V''<sub>3</sub> (V<sub>1</sub> + PP + PP)  
 3-for 3-to 3sS-spoke  
 'He spoke to him for him.'  
 X                    Y        Z

V' = V + Postposition; V'' = V + 2 Postpositions

The number of adjuncts permitted depends on the verb type, as shown in the subscript. We will now give examples showing how nominal adjuncts can appear with each verb

## 2.1 Intransitive Verbs

Stative verbs and other intransitive verbs have only one argument, and therefore permit only one nominal adjunct. The following example shows an intransitive verb with one nominal adjunct:

- (31) Ch'ekée na'itkóh  
 girl        3sS-swim  
 Adjunct Sentence  
 'The girl swims' or 'The girl is swimming.'

In this example, the single nominal is co-referential with the single verbal argument.

## 2.2 Transitive verbs

2.2.1. There are two kinds of transitive verbs: simple and complex. Examples of simple transitive verbs given earlier (12 and 20) are repeated here:

- |      |                                              |      |                                       |
|------|----------------------------------------------|------|---------------------------------------|
| (12) | hish'í<br>3sO-1sS-see<br>'I see him/her/it.' | (20) | nísh'í<br>2sO-1sS-see<br>'I see you.' |
|------|----------------------------------------------|------|---------------------------------------|

The following example shows a simple transitive verb with two third person arguments, where the speaker has exercised his option of adding nominals to both pronominal arguments:

- (32) 'ishkiyíí ch'ekéé yaa'í  
 boy girl 3sO-3sS-sees  
 'The boy sees the girl.'

Word order is significant in Apachean. In sentence (32), the first NP is coindexed with the subject verbal argument, while the second NP is coindexed with the object verbal argument. The following example shows a different word order.

- (33) Ch'ekéé 'ishkiyíí yaa'í  
 girl boy 3sO-3sS-sees  
 'The girl sees the boy.'

Examples (32) and (33) show that the order of the nominal adjuncts is significant, as reflected in their coreferentiality with the pronominal verbal arguments.

In the introductory section above, we noted that the *yi-/bi-* alternation appears only in sentences with all third person arguments, and involves a change to a "passive-like" interpretation of the sentence. Example (34) below is the Jicarilla equivalent of the Navajo sentence in (9) above (Navajo *t* corresponds to Apache *k*).

- |        |                                         |    |                                                        |
|--------|-----------------------------------------|----|--------------------------------------------------------|
| (34 a) | yizkał<br>yi-kicked<br>'He kicked him.' | b) | bizkał<br><i>bi</i> -kicked<br>'He got kicked by him.' |
|--------|-----------------------------------------|----|--------------------------------------------------------|

We postpone discussion of the analysis of the *bi-* (*mi-*) prefix until we have provided data on its distribution. The *bi*-prefix involves a change in the coindexing of nominal adjuncts.

Compare (32) and (33) above with the following:

- |        |                                                                                            |
|--------|--------------------------------------------------------------------------------------------|
| (35 a) | 'ishkiyǰǰ ch'ekéé maa'í<br>boy      girl <i>bi</i> -sees<br>'The boy is seen by the girl.' |
| b)     | Ch'ekéé 'ishkiyǰǰ maa'í<br>girl      boy <i>bi</i> -sees<br>'The girl is seen by the boy.' |

Example (35a) corresponds to (32) with a change from *yi-* to *bi-*. Example (35b) corresponds to (33) with the same change. It is evident that the coindexing of the pronominal inflection and the nominal adjuncts has been reversed. Since 'boy' and 'girl' are of equal rank in the NP hierarchy, either the *yi-* or *bi-* construction is acceptable in these examples.

Note that despite the passive (the best available) translations given for (35a,b), these constructions are transitive. They permit two nominal adjuncts, whereas intransitive sentences in Apachean permit only one adjunct.<sup>8</sup> In the English passive construction, the argument with the thematic role of *patient* is the Subject of the sentence, and the argument with the thematic role of *agent* is oblique, introduced by the preposition *by*, as in the translations given in (35). In the Apachean sentences, neither nominal is marked oblique, but there has been a change in the focus of the sentence, as happened in (34a,b) above, where no nominal adjuncts were present. This change in focus suggests that in the *bi-* construction, as in the English passive, the argument with the thematic role of *patient* becomes the Subject of the sentence.

2.2.2 We define a *complex* transitive verb as consisting of an intransitive verb and an adjoined postpositional phrase. An example of a complex transitive verb is the following:

- (36) 'ishkiyíí ch'ekéé yich'í yáątkíh  
 boy girl 3-to 3sS-spoke  
 'The boy "spoke to" the girl.' (advised or reprimanded her)

Without the postpositional phrase *yich'í*, the verb *yáątkíh* is intransitive and permits only one nominal adjunct. We classify *yich'í yáątkíh* as a complex transitive verb, rather than an intransitive verb with an oblique or indirect object, since it behaves just like other transitive verbs with the *yi-/bi-* alternation. Compare:

- (37) 'ishkiyíí ch'ekéé maa'í  
 boy girl *bi*-sees  
 'The boy is seen by the girl.'
- (38) 'ishkiyíí ch'ekéé bich'í yáątkíh  
 boy girl *bi*-POST 3sS-spoke  
 'The boy was "spoken to" by the girl.'

We propose that only *transitive* constructions permit the *yi-/bi-* alternation and that all postposition + verb constructions (V' or V'') are transitive. Compare also:

- 39) Bill Sam yá'inítkóh  
 3-(*yi*)-POST-3S-swam  
 'Bill swam to Sam.'

- (40) Bill Sam      má'inǰkòh  
                             3-(*bi*)-POST-3S-swam  
 'Bill was "swam to" by Sam.'

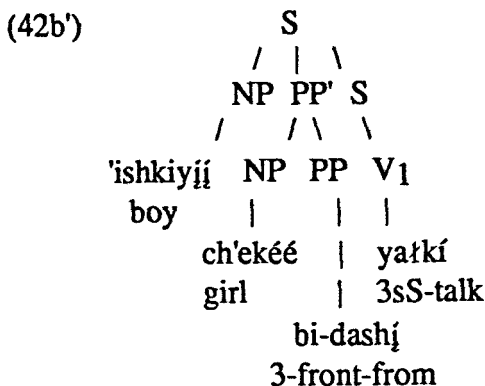
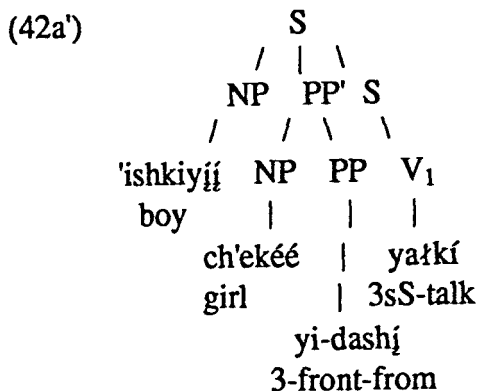
The awkward English translation given for (40) is intended to show that the (postpositional) argument with the thematic role of *goal* is in focus or given prominence in this *bi*-construction. It is thus roughly comparable to English sentences like

- (41) a) Bill was run over by Sam.  
       b) Bill was made fun of by Sam.

and other passive constructions that are related to transitive sentences with a verb + preposition. Examples (36-40) show that complex transitive verbs (V + postposition = V') in Jicarilla permit two nominal adjuncts, just as simple transitive verbs do. In these examples, the nominals are adjuncts to the sentence, not under a PP node, as would be the case if the construction were intransitive. Proof that this is the case may be drawn from the fact that problems of constituency arise if we assume that a nominal is under a PP node. Compare the following:

- (42) a) 'ishkiyǰǰ ch'ekéé yidashǰ      yaǰkí  
           boy      girl      3-front-from 3sS-talk  
           'The boy is talking back to the girl.'  
       b) 'ishkiyǰǰ chekéé bidashǰ yaǰkí  
           boy      girl  
           'The girl is talking back to the boy.'

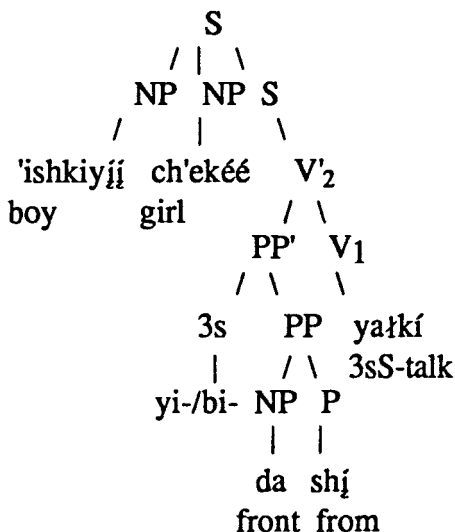
Suppose we assume the following structures for these examples:



In (42a') the NP 'girl' and the postpositional phrase are dominated by the node PP'. By analogy, in (42b') the *bi*-construction (glossed 'The girl is talking back to the boy'), the NP 'boy' should be in the same constituent as the postpositional phrase -- but these elements are not adjacent. The postpositional phrase literally means 'in front of 3', and in (42b'), it is the girl who is talking 'in front of' the boy. Therefore, we propose the structure shown in (43):



(43)



the boy 'talks back' to girl *yi-/*  
 the girl 'talks back' to boy *bi-*

We analyze the V' as a complex verb comparable to the English expression 'talk back to'. The postposition and verb, together, form a complex transitive verb, a single constituent, and the *yi-/bi-* alternation functions with these complex verbs just as it does with simple transitive verbs. In the structure shown in (43), neither NP is under the PP node, and either one may be coindexed with the subject verbal argument, according to the *yi-/bi-* alternation.

In these examples, the complex verb *yi-/bi- dashǰ yałkí* was illustrated. If the postpositional phrase is not adjacent to the verb, the construction is no longer a complex verb, but a verb plus a locative postpositional phrase; then the meaning is different and the *yi-/bi-* contrast serves a totally different function, in an *intransitive* sentence:

- (44 a) 'ishkiyǰǰ yidashǰ                      ch'ekéé yałkí  
 boy        'in the presence of' girl    3sS-talk  
 'The girl is talking in the presence of the boy.'

- b) 'ishkiyǫ́ bidashǫ́                      ch'ekéé yałkí  
 boy        'in the presence of' girl    3sS-talk  
 'The girl is talking in the presence of the boy.' (a  
 particular known boy)

For these sentences, the following structure is proposed:

- (45)
- |           |                        |    |         |                |
|-----------|------------------------|----|---------|----------------|
|           |                        | S  |         |                |
|           | /                      |    | \       |                |
|           | PP'                    | NP | S       |                |
|           | / \                    |    | \       |                |
|           | NP                     | PP | ch'ekéé | V <sub>1</sub> |
|           | /                      |    | girl    | \              |
| 'ishkiyǫ́ | yi-/bi-                |    |         | yałkí          |
| boy       | dashǫ́                 |    |         | 3sS-talk       |
|           | 'in the presence of 3' |    |         |                |

Here the nominal 'ishkiyǫ́ ('boy') is ("Chomsky") adjoined to the postpositional phrase yi-/bi-dashi, and there is no change in the coindexing of nominals associated with the yi-/bi-contrast. Instead, the contrast is 'in the presence of the boy' vs. 'in the presence of the *particular (known) boy*'. For further examples of this use of the yi-/bi-contrast, see Sandoval (1984). Perkins (1978) mentions similar contrasts in Navajo.

## 2.3 Ditransitive verbs

Ditransitive verbs have three arguments and therefore permit three nominal adjuncts. There are three subtypes:  $V_3$  (no postpositions);  $V'_3$  (a transitive verb plus one postposition); and  $V''_3$ , (an intransitive verb plus two postpositions). All show the *yi-/bi-* alternation on the first element of the verbal complex (postposition or verb). The examples in (46) show a  $V_3$  with all three possible nominal adjuncts present:

- (46 a) *didé 'ishkiyíí 'ítkí' yeidinntsi*  
 man boy gun 3s10-3sO-3sS-poked  
 'The man poked the gun at the boy.'
- b) *didé 'ishkiyíí 'ítkí' meidinntsi*  
 man boy gun *bi*-poked  
 'The man had the gun poked at him by the boy.'  
 (not necessarily causative; 'The man was poked at...')

Note that in the *bi*-construction the verbal argument with the thematic-role of goal is in focus. The following examples illustrate a  $V'_3$ :

- (47 a) *Bill Sam yá 'ayíílaa*  
 3-for 3sO-3sS-made  
 'Bill made it for Sam.'
- b) *Bill Sam má 'ayíílaa*  
 3-for 3sO-3sS-made  
 'Sam made it for Bill.' or  
 'Bill had it made for him by Sam.'

We could add a third nominal such as *kíh* ('house') to (47a) to show what 'it' refers to:

- (49 a) Bill Sam yá yich'í yáą́kíh  
           3-for 3-to 3sS-spoke  
 'Bill spoke to Sam for X, or Bill spoke to X for Sam.'
- b) Bill Sam má yich'í yáą́kíh  
           *bi*-for 3-to 3sS-spoke  
 'Sam spoke to Bill for X, or Sam spoke to X for Bill.'

Sentences with a  $V^3$  and three nominal adjuncts are very difficult to process; there is too much ambiguity, for reasons to be explained below.

In this section, we have given a classification of verb types in Jicarilla, and presented the data on the occurrence of nominal adjuncts with each verb type, and on the distribution of the *bi*-prefix. In the next section we will state the coindexing rules that account for the coreference between verbal arguments and their adjuncts in the *yi*- and *bi*-constructions, and make it possible to assign particular interpretations to the sentences.

### 3. Coindexing rules and nominal adjunction

Our claim is that the *bi*-construction, like the English Passive, involves an argument that does not have the thematic role of *agent* (that is, a *patient*, *theme*, *goal*, etc.) but does have the grammatical relation of Subject. Therefore, we will need to consider both the thematic roles and grammatical relations of verbal arguments in this section, where we provide rules that account for the different interpretation of sentences with *yi*- vs. *bi*-. The rules are:

## (50) Adjunction Rule

A verb permits (a maximum of) as many nominal adjuncts as it has arguments:

That is:

$V_1$  permits 1 NOM ADJT

$V_2, V'_2$  permit 2 NOM ADJT

$V_3, V'_3, V''_3$  permit 3 NOM ADJT

The Coindexing Rules for Jicarilla nominal adjuncts in simple (one clause) sentences are as follows:

(51)  $V_1$  Coindexing Rule

Coindex the single NOM ADJT with the single verbal argument.

An example of a  $V_1$  (intransitive) construction with a single nominal adjunct is:

## (52) Ch'ekéé ndees

girl 3sS-tall

'The girl is tall.'

The optional nominal must be coindexed with the single verbal argument. This argument necessarily has the grammatical relation of Subject, and its thematic role is irrelevant. In (52), the pronominal argument is a *theme*; in (14) above (translated "the girl is swimming"), the verbal argument has the thematic role of *agent*. Other intransitive subjects may be *patients*, *experiencers*, etc.

When we consider transitive constructions, where the *yi-/bi-* alternation appears, the situation becomes more complex. In the *yi-* construction, an argument with the thematic role of *agent* is Subject; in the *bi-* construction, a *non-agent* argument is Subject, as shown in example (34) above, repeated here.

- |        |                                         |    |                                                |
|--------|-----------------------------------------|----|------------------------------------------------|
| (34 a) | yizkał<br>yi-kicked<br>'He kicked him.' | b) | bizkał<br>bi-kicked<br>'He got kicked by him.' |
|--------|-----------------------------------------|----|------------------------------------------------|

This contrast in the meaning of the sentences in (34) is associated with a change in the coindexing rules for *yi-* vs. *bi-* constructions.

Since nominal adjuncts are optional, a transitive verb may have two, one, or no adjuncts. Coindexing is as follows:

(53) 1.  $V_2$ : Two NOM ADJT

a) *Yi*-construction

1. Coindex the first NOM ADJT with the pronominal prefix that has the  $\theta$ -role *agent*.

2. Coindex the second NOM ADJT with the pronominal prefix that has the  $\theta$ -role *patient*.

b) *Bi*-construction

Reverse coindexing of the pronominal prefixes and NOM ADJT

2.  $V_2$ : One NOM ADJT

a) *Yi*-construction

Coindex the NOM ADJT with the pronominal prefix that has the  $\theta$ -role *patient*.

b) *Bi*-construction

Coindex the NOM ADJT with the pronominal prefix that has the  $\theta$ -role *agent*.

An example of a  $V_2$  with one nominal adjunct is as follows:

- (54 a) ch'ekéé yaa'í  
 girl 3sO-3sS-see  
 'X sees the girl.'

- b) ch'ekéé maa'j  
 girl bi-see  
 'X is seen by the girl.'

Examples of a  $V_2$  with two nominal adjuncts include (32) through (35) above; a  $V'_2$  with two nominal adjuncts is illustrated in (36, 38, 39, 40, and 42) above. Recall that in  $V'_2$ , the object of the postposition has the  $\theta$ -role patient, in a transitive construction. This is in contrast to examples (44a, b), intransitive constructions with a  $V_1$  and a postpositional phrase, where the *yi-/bi-* contrast has a different function.

We turn now to the ditransitive constructions. The simplest case is the  $V_3$ , with no postpositional phrases. With all the ditransitive constructions, ambiguities arise. We will begin with the constructions where all three possible adjuncts are present.

(55)  $V_3$ : Three NOM ADJT

a) *Yi*-construction

1. Coindex the first NOM ADJT with the pronominal prefix with the  $\theta$ -role *agent*.
2. Coindex the second NOM ADJT with the pronominal prefix with the  $\theta$ -role *goal*.
3. Coindex the third NOM ADJT with the pronominal prefix with the  $\theta$ -role *theme*.

b) *Bi*-construction

Reverse coindexing of (1) and (2); coindexing in (3) remains unchanged.

Examples (46a, b) above show a  $V_3$  with three NOM ADJT.

When only two NOM ADJT to a  $V_3$  are present, ambiguities arise, and pragmatic considerations are relevant to the interpretation.

- (56) a) *didé 'iłkĩ'* yeidinntsi  
 man gun 3s10-3sO-3sS-poked  
 'X poked the gun at the man.'
- b) *didé 'iłkĩ'* meidinntsi  
 man gun *bi*-poked  
 'The man poked the gun at X.'

Since guns are aimed at things and people are not, the ADJT *'iłkĩ'* is interpreted as an ADJT to the theme argument. If both NOM ADJT referred to human beings, the theme argument would be interpreted as having no ADJT, and the *yi-/bi-* alternation would result in the same change in interpretation of adjuncts to the agent and patient arguments that is shown in (46a, b).

When a single ADJT to a  $V_3$  is present, similar pragmatic factors play a role.

- (57) a) *'iłkĩ'* yeidinntsi  
 gun 3s10-3sO-3sS-pokeed  
 'X poked the gun at Y.'
- b) *'iłkĩ'* meidinntsi  
 gun *bi*-poked  
 'Y had the gun poked at him by X.'

- (58) a) *didé* yeidinntsi  
 man 3s10-3sO-3sS-poked  
 'X poked it at the man.'
- b) *didé* meidinntsi  
 man *bi*-poked  
 'The man poked it at X.'

Examples of a  $V_3$  construction with three nominal adjuncts are as follows:



- (59) John Henry *dibé* *yeinnɬkɨ*  
 sheep 3-to-3sS-gave[3sO]  
 'John gave Henry a sheep.'
- (60) John Henry *dibé* *meinnɬkɨ*  
 sheep *bi*-gave[3sO]  
 'John was given a sheep by Henry.'

The verb in examples (59, 60) refers to giving an animate object. With the  $V_3$ , as with the  $V_3$ , ambiguities arise when less than three nominal adjuncts are present. Again, pragmatic factors are relevant to the interpretations. If examples (59, 60) had only one proper name and the NP *dibé*, the proper name could be interpreted as coreferential with either the agent or the goal, in either the *yi-* or the *bi*-construction. For pragmatic reasons, *dibé* would be interpreted as coindexed with the theme argument. If the only ADJT present is a proper name, the same ambiguity is present, and the theme argument is interpreted as having no adjunct. If only *dibé* is adjoined, the agent and goal arguments are interpreted as without adjuncts, again for pragmatic reasons. All these ambiguities follow from the fact that the  $V_3$  is a complete sentence, meaning '3 gave 3 to 3' and the NOM ADJT have no case marking. If all three of the permitted adjuncts are present, there is no ambiguity, as shown by the coindexing rules. If only one or two ADJT are present, ambiguities are unavoidable, since any ADJT to the theme argument intervenes between any other possible ADJT and the inflected verb. Thus, it is not the case that a NOM ADJT immediately preceding the verb is coindexed with either the agent or the patient argument according to the *yi-/bi-* alternation, as we have seen with a  $V_2$ , when only two arguments are present. These ambiguities are resolved in context.

Now we can explain why a sentence with a  $V^3$  ( $V_1 + PP + PP$ ) has so many ambiguities with respect to coindexing the optional adjuncts. These sentences have two arguments with the  $\theta$ -role goal.

- (61) Yá yich'į yąąkíh  
 3-for 3-to 3-sSpoke  
 'X spoke to Y for Z.'

This sentence has two postpositional arguments, and there is no fixed order of the NOM ADJT that may be coindexed with these arguments. Note that these ambiguities lend support to the claim that nominals are not verbal arguments, but adjuncts to them. There is no ambiguity with respect to the pronominal arguments themselves, and sentences with so many nominal adjuncts are rare or non-occurring in actual usage.

The coindexing rules given in this section have been stated in terms of the thematic roles of the verbal arguments. Let us consider now the question of the grammatical relations of these arguments. We saw that for intransitives, as in (52) above, the situation could not be simpler: the single argument of the verb is necessarily the Subject, no matter what  $\theta$ -role is assigned to this argument by the verb.

With transitive verbs, the situation is more complicated. Consider again the contrast seen in (34) above:

- (34) a) yizkał 'He kicked him.'  
 b) bizkał 'He got kicked by him. (approximately)'

The verb 'kick' assigns two  $\theta$ -roles, *agent* and *patient*. In the *yi-* construction, as in the English translation, the *agent* is the Subject and the *patient* is the Object; this is the link between  $\theta$ -role and grammatical relation that is always present in transitive sentences in English. The translation given for the *bi-* construction is meant to suggest that, like the English

Passive, the *bi*- form puts the *patient* argument into the Subject grammatical relation. Unlike the English Passive, the *bi*- form is a transitive construction, with a second direct argument, as shown by the fact that it can take two nominal adjuncts, like any other transitive. This second direct argument cannot have the grammatical relation of Object; it is a transitive *agent* with a non-subject grammatical relation.

Further support for the claim that in the *bi*- construction, the argument with the  $\theta$ -role of *patient/theme* has the grammatical relation of Subject can be drawn from a consideration of how these sentences are used. In the Navajo examples (5,6) above, we saw that in accordance with the NP hierarchy, the *bi*- construction is employed when the *patient* argument is higher on the animacy scale than the *agent* argument.

- |                                                                                                                                                 |                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| (5) ?? $\dot{\lambda}\dot{\lambda}\dot{\lambda}$ ' hastiin yizta $\dot{\lambda}$<br>horse man <i>yi</i> -kicked<br>??The horse kicked the man.' | (6) hastiin $\dot{\lambda}\dot{\lambda}\dot{\lambda}$ ' bizta $\dot{\lambda}$<br>man horse <i>bi</i> -kicked<br>'The man got kicked by<br>the horse.' |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|

The *yi*- form is fine when the agent is higher on the animacy scale:

- (62) hastiin  $\dot{\lambda}\dot{\lambda}\dot{\lambda}$ ' yizta $\dot{\lambda}$   
man horse *yi*-kicked  
'The man kicked the horse.' (Navajo)

We can say that the animacy hierarchy requires that the argument higher on the scale must be the Subject of the sentence, no matter what its  $\theta$ -role, *agent* or *patient*, may be.

There is no "Subject-Object" inversion; there is  $\theta$ -role inversion. The generalization is that the first nominal adjunct is to be coindexed with the Subject argument, and the second adjunct is to be coindexed with the *other* (non-subject) argument, regardless of their  $\theta$ -roles. With ditransitives, the

Subject argument has the  $\theta$ -role *goal* in the *bi*-construction, as shown in (60) above.

Recall that the typical Apachean sentence has at most one adjunct; this means that *most* sentences have no subject adjunct. This is in accord with the fact that subjects are typically discourse topics and represent old information, whereas other arguments provide new information. Adjuncts are used when the speaker has reason to believe that the hearer may not be sure who or what he is referring to.

It was mentioned above that the *yi*-/*bi*- contrast occurs only when all the arguments are third person. In most of the examples given here, we have picked arguments where the nominals adjoined are of equal rank ('boy' vs. 'girl', 'Sam' vs. 'Bill', etc.) so that both the *yi*- and *bi*- constructions are culturally acceptable. But as we have seen, the *yi*- vs. *bi*- constructions do not mean exactly the same, because of the change in the  $\theta$ -role assigned to the Subject. Compare:

(63) ((X) Y)      *yizkał*

(64) ((Y) X)      *bizkał*

Sentences (63) and (64) have the same truth conditions -- the same event happened in the world -- but their *use* is different, because of the change in the  $\theta$ -role of the Subject. The *bi*-construction seems "fancy", or needlessly indirect, when both referents of the pronominal arguments are of the same rank, and the *bi*-construction is not obligatory.

The *bi*-construction is the *marked* one. A situation in which it seems natural to use the *bi*-construction would be as follows: Suppose X killed Y. To the question 'What did X do?' an appropriate answer would be:

(65) ((X) Y) *yi* - killed

However, if the question is: 'What happened to Y' a good reply would be:

(66) ((Y) X) *bi* - killed

Therefore, the passive is often the 'best available' translation in English. We turn now to the analysis of the *bi*-prefix.

#### 4. The *bi*-prefix as an object pronoun and inverse marker

The *bi*-prefix occurs with nouns to mark third person possessive, as in

|     |                    |                   |
|-----|--------------------|-------------------|
| (67 | a) <i>bi-zhááł</i> | b) <i>bi-dibé</i> |
|     | his money          | his sheep         |

And the *bi*-prefix can appear on postpositions to mark a third person postpositional object.

|     |                  |              |
|-----|------------------|--------------|
| (68 | a) <i>bich'í</i> | b) <i>bá</i> |
|     | to-3             | for-3        |

Our proposal concerning the contrast seen in (34)

|     |                  |                   |
|-----|------------------|-------------------|
| (34 | a) <i>yizkał</i> | 3 kicked 3        |
|     | b) <i>bizkał</i> | 3 got kicked by 3 |

is that in (34a), there is a phonologically null (ZERO) third person object pronoun, and in (34b) there is an *overt* third person object pronoun, *bi*-, as seen in (67) and (68). The presence of this overt third person object pronoun is the marker of an *inverse* construction, as claimed by Willie (this volume). This means that the direction of the action is not the expected one; that the *Subject* of the transitive sentence is the

*patient*, not the agent. Therefore, the inverse construction can be used to state that the man (human) got kicked by the horse (a less rational being). These constraints on the use of the *yi-/bi-* alternation apply even when *no* nominals appear in the sentence. That is, an observer cannot describe an event where a horse kicks a man as (34a); it is necessary to say (34b). And a listener out of the line of sight would learn either a) that a less sentient being had kicked a being higher on the animacy scale (not the identity of the particular beings involved in the action described), or b) that the referent of the discourse topic had been kicked. The use of the overt object pronoun *bi-* signals that the Subject is a patient, and that the direction of the action is *upon*, not *from*, the transitive subject. This explains also why it is appropriate to reply with (34a) when asked "What did X do?", and with (34b) when asked "What happened to X?"

Since thematic roles are assigned according to the meaning of the verb, they are quite variable. The agent who kicks is not the same as the agent who sings, and the act of seeing is even more different. All languages lump together a range of thematic roles and assign them the same case as "prototypical" *agents* and *patients*. Further discriminations among thematic roles may be given special case treatment in particular languages. In English, the two arguments of relational sentences such as possessives and comparatives are marked NOM/ACC just like the arguments of canonical transitives.

- |      |                                |  |                  |
|------|--------------------------------|--|------------------|
| (69) | a) I have them.                |  | b) That's him.   |
|      | NOM ACC                        |  | NOM ACC          |
| (70) | a) They exceed us in strength. |  | b) He outran me. |
|      | NOM ACC                        |  | NOM ACC          |

We turn now to a consideration of comparative and relational sentences in Jicarilla, and demonstrate how the *yi-/bi-* alternation operates in these sentence types to affect a change in the thematic role (canonical *agent* and *patient*) of the

Subject argument, enabling the speaker to place either argument of the construction in focus as Subject.

## 5. Comparatives

The function of the *yi-/bi-* alternation in comparative sentences was first described in Sandoval (1984). The comparative is a transitive construction, a complex verb in which the *yi-/bi* alternation serves to assign either an agent or a patient  $\theta$ -role to the SUBJECT. In the case of comparatives, there seems to be only one postpositional phrase that is employed: *yi-/bi-'aayé* ('beyond', more than').

(71) Bill Sam *yi'aayé* ndees  
       *yi*-beyond 3sS-tall  
       'Bill is taller than Sam.'

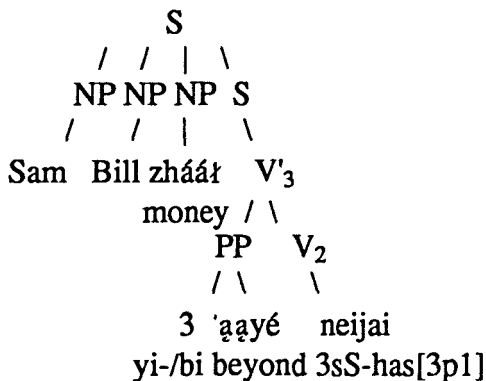
(72) Sam Bill *bi'aayé* ndees  
       *bi*-beyond 3sS-tall  
       'Bill is taller than Sam.'

The structure of comparatives, a V'2 with a postpositional phrase and a stative verb, is illustrated below.





(76)



yi'ááyé - nejjai

to-have-more-X-than

bi'ááyé - nejjai

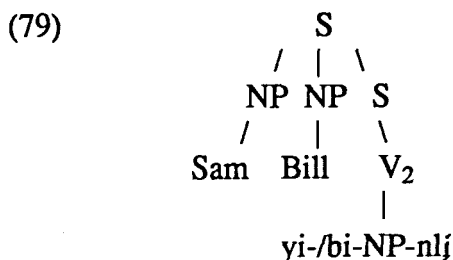
## 6. Relational Sentences

There is an interesting sentence type in Apachean where a noun is combined with the copular verb *nlí* to make a derived transitive verb,  $V_2$ . (There is no postpositional phrase in these sentences, so we do not label them  $V'_2$ ). The *yi-/bi-* contrast is present, just as in any other transitive sentence.

(77) Sam Bill yiyi'íí-nlí  
 yi-son-3sS-is  
 'Sam is Bill's son (is-son-to).'

(78) Sam Bill biyi'íí-nlí  
 bi-son 3sS-is  
 'Bill is Sam's son (is-son-to).'

The sentence has the structure shown in the following tree:



yi*y*i'íj-nl<sub>i</sub>

to-be-son-to

bi*y*i'íj-nl<sub>i</sub>

In these relational sentences, not just any NP can be incorporated into the V<sub>2</sub>. It has to be a nominal that refers to some relationship: kinship terms, and others like

- (80) Bill Sam yidekéh - nl<sub>i</sub>  
 yi-friend 3sS-is  
 'Bill is Sam's friend.'

- (81) Bill Sam yinant'án - nl<sub>i</sub>  
 yi-leader 3sS-is  
 'Bill is Sam's leader.'

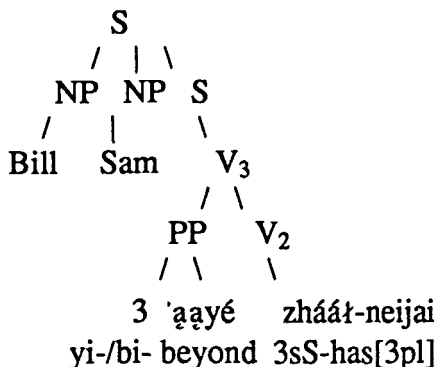
Nominals can also be incorporated into possessive sentences like the one shown in the previous section. Compare (72) above with the following, where the word order is different, and the nominal *zháát* has been incorporated into the V<sub>3</sub>:

- (82) Bill Sam yi'ąayé zháát - neijai  
 yi-beyond money 3sS-has [3plO]  
 'Bill has more money than Sam.'

- (83) Bill Sam bi'ąąyé zháát - neijai  
*bi*-beyond money 3sS-has [3plO]  
 'Sam has more money than Bill.'

The corresponding structure is:

(84)



yi-'ąąyé-zháát-neijai

to-have-more-money-than

bi-'ąąyé-zháát-neijai

There is a slight difference in meaning between the following:

(85) Bill Sam zháát yi'ąąyé neijai

(86) Bill Sam yi'ąąyé zháát neijai

In the first, the emphasis is on the "money"; in the second, the emphasis is on "having more."

In Sections 5 and 6, we have seen that Jicarilla Apache gives comparative, possessive, and relational sentences the same syntactic status as canonical transitives with more typical "agents" and "patients." We have also shown how the *yi-/bi-* alternation can be employed in these sentence types to place arguments with contrasting thematic roles in Subject position.

## 7. Concluding Remarks

The goal of this paper has been to demonstrate that the Apachean languages are Pronominal Argument Languages, and to show how the *yi-/bi-* alternation functions in Apachean to give arguments with contrasting  $\theta$ -roles the grammatical relation of Subject, and to mark changes in the coindexing of pronominal arguments and optional nominal adjuncts. The *bi-* construction is a transitive, *inverse* construction, as claimed by Willie (this volume). A very considerable group of languages restricts arguments to simple pronominal elements, with profound consequences throughout the syntax. Pronominal Argument Languages are found in Africa, the Americas, Asia, Australia, and the Pacific (Jelinek, 1985). Pronominal Argument Languages show that there is no universal syntactic requirement that a Subject NP, -- that is, a lexical subject that is [NP,S] at the level of phrase structure -- be present in every clause, and point up the fact that problems concerning the status of the morphology/syntax boundary in universal grammar need to be resolved.

## Notes

1. The analysis of Apachean presented here was conducted while the first author (Sandoval) was completing work leading to the M.A. degree in Linguistics at the University

of Arizona in 1982-1984. Sandoval is a native speaker of Jicarilla Apache and is fluent in Navajo. The Jicarilla Apache example sentences given here are based on his speech. We want to thank Ken Hale for his invaluable comments and criticisms. Richard Demers gave advice and help; and we are also indebted to Keren Rice and Leslie Saxon. None of these can be blamed for our errors.

2. If "configurational" is defined as "having a VP node" then the Apachean languages are non-configurational. Word order, as will be shown, is not free. See Jelinek (1984, 1985).
3. There are Jicarilla Apache sentences in which a nominal is a required constituent. These include copular sentences.

i) 'abáachi nshǫ́j  
 Apache 1sg-be  
 'I am a Jicarilla Apache'

Our claim is that the nominal '*abáachi* here is neither a subject nor an object, but a predicate, and that the 1sg prefix on the copular verb is the subject of the sentence. The copula and the predicate noun form a complex predicate. (See also Section 6 on relational sentences.) Similarly, there is a locative verb which requires a postpositional phrase which may include a nominal.

ii) kqghǫ́'ée sidá  
 house-at 3sgS-sit  
 'He is at home.'

And an existential verb:

- iii) *ʔeet'án gɔni*  
 bread 3sg-exist  
 'There is bread.'

Our claim is that in (iii) the nominal *ʔeet'án* is an adjunct to the 3sg theme pronominal argument. Nominal adjunction is the central topic of this paper.

4. The Jicarilla form *ch'ekéé* is cognate with a Navajo word '*at'ééké* 'girls' that is plural in number. In Jicarilla Apache, it is undifferentiated as to number.
5. The corresponding inflected postposition in Navajo would be *baa*. There is considerable variation in the use of *bi-* and *mi-* as third person markers in Jicarilla Apache, as succeeding examples will show. Older persons tend to use *bi-* more consistently; we will not deal with this variation here.
6. It is possible to mark a noun distributive when the thing(s) spoken of are scattered about widely, and the speaker wants to emphasize this fact:

i) *zas*  
 'snow'

ii) *daazas*  
 'snow spread all over, everywhere'

- 7. The "handling" or classificatory verbs do not show "agreement" with nominal adjuncts; on the contrary, they may assign certain interpretations to the nominals. Hoijer (ms) observed:

"... the meaning of a given noun may be altered significantly depending upon the verb to which it functions as topic or goal...we find many nouns that may

occur with a number of classificatory verbs ... Thus, the noun *béeso* (from Spanish *peso*) names a coin when it is the goal of the round, solid object verb, a handful of change when it is the goal of the verb referring to a set of small objects, and a piece of paper money when it is the goal of the fabric-like object verb. Similarly, the noun *çiz* names a lumpish bit of firewood when combined as goal with the round, solid object verb, a stick of firewood when it is the goal of the long slender object verb, and a bundle of firewood when it is the goal of the mass of objects verb."

(Hoijer appears to be using 'goal' as synonymous with 'topic' here.)

8. There is a lexical passive in Apachean (see discussion in Young and Morgan 1980). This lexical passive is an intransitive, and permits only one nominal adjunct. The single verbal argument has the  $\theta$ -role *theme*. An example in Jicarilla is:

i) shi'deeshchí  
 1sS-born-PASSIVE  
 'I was born.'

Like many lexical passives across languages, this construction does not permit an agent to be stated. This intransitive is very different from the *bi*-construction, which is transitive, requiring two pronominal arguments and permitting two nominal adjuncts.

References

- Chomsky, Noam. 1981. *Lectures on Government and Binding*. Foris, Dordrecht.
- \_\_\_\_\_. 1982. *Some Concepts and Consequences of the Theory of Government and Binding*. Linguistic Inquiry Monograph 6, MIT Press, Cambridge, Mass.
- Creamer, Mary H. 1974. 'Ranking in Navajo Nouns' *Dine Bizaad Nanil'iih, Navajo Language Review* I, 29-38.
- Hale, Kenneth. 1972. Navajo Linguistics, Part III, MIT ms.
- \_\_\_\_\_. 1973. A Note on Subject Object Inversion in Navajo', in B. Kachru et al., *Issues in Linguistics*, Urbana, Illinois: University of Illinois Press.
- \_\_\_\_\_, Laverne M. Jeanne and Paul Platero (1977). 'Three Cases of Over-Generation', in *Formal Syntax*, edited by P.W. Culicover, T. Wasow and A. Akmajian, New York: Academic Press.
- Hoijer, Harry 1945. *Navajo Phonology*, University of New Mexico Publications in Anthropology, No. 1, Albuquerque.
- \_\_\_\_\_. (undated ms). "Patterns of Meaning in Navajo", UCLA mimeo.
- Jelinek, Eloise 1984. "Empty Categories, Case and Configurationality", *Natural Language and Linguistic Theory*, 2.1: 39-76.
- \_\_\_\_\_. 1985. "The Projection Principle and the Argument Type Parameter." Paper presented at the December 1986 LSA meeting, Seattle.



- Kari, James 1976. *Navajo Verb Prefix Phonology*. Garland Press, New York.
- Perkins, Ellavina Tsosie. 1978. *The Role of Word Order and Scope in the Interpretation of Navajo Sentences*, University of Arizona Ph.D. Dissertation, Tucson.
- Sandoval, Merton 1984. 'The Syntactic Function of the *yi*-/*bi*-Alternation in Jicarilla Apache', *Coyote Papers*, Vol. V, Tucson: University of Arizona.
- \_\_\_\_\_ 1983. 'An Analysis of the Different Versions of the Jicarilla Apache Emergence Narrative', manuscript, Tucson: University of Arizona.
- Willie, MaryAnn. this volume. "Why There Is Nothing Missing In Navajo Relative Clauses."
- Witherspoon, Gary. 1977. *Language and Art in the Navajo Universe*, Ann Arbor: University of Michigan Press.
- Young, Robert and William Morgan, eds. 1980. *The Navajo Language - A Grammar and Colloquial Dictionary*, Albuquerque: University of New Mexico Press.

I.3 Jelinek, Eloise and Richard Demers (1994) Predicates and Pronominal Arguments in Straits Salish. *Language* 70: 697-736.

This paper is perhaps the most well-known paper on the PAH. It provides an analysis of Lummi (Straits Salish). It argues that Salish lacks a noun/verb contrast, and instead has simply an open class of predicates. Arguments are pronominal affixes and clitics and DPs are really adjunctive predicate headed clauses marked with a complementizer/determiner. Evidence comes from word order, morphology, and scope of quantification. In particular, it's shown that Lummi lacks determiner quantification that would be expected if DPs were arguments.

## PREDICATES AND PRONOMINAL ARGUMENTS IN STRAITS SALISH

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This paper provides an analysis of the syntax of Straits Salish, according to which these languages lack a noun/verb contrast at the word level. Main clauses consist of an initial predicate, minimally containing a lexical root, a functional head where valence [ $\pm$  TRANSITIVE] is marked, and possibly a pronominal suffix marking an internal argument. The predicate is followed by a second position clitic string of inflectional elements, the subject pronoun and tense. Determiner phrases are derived subordinate structures, adjuncts to the main clause. We present evidence against a copular verb analysis as further substantiation of the lack of a noun/verb distinction at the lexical level. We identify certain properties of quantified contexts in Straits Salish which provide important evidence for our analysis of argument structure.\*

1. INTRODUCTION. The languages of the Northwest Coast area of North America provide important data for the investigation of lexical categories and X-bar structure in universal grammar. These languages share a number of phonological and syntactic features; the extent to which the distribution of these features represents areal diffusion or remote genetic connections is still unclear. The largest language family in the Northwest is Salish, which in pre-Columbian times extended from Canada into Oregon, and eastward into Montana; the Tsimshian and Wakashan language families of the area are comparatively much smaller. Beginning with Boas 1911 and Sapir 1911, linguists working on the languages of this area have questioned whether they show a contrast between NOUN and VERB as lexical categories, or perhaps have only a 'weak' contrast of this kind. Kuipers 1968 drew attention to how the feature of transitivity bears on the problem. Among those arguing that these languages lack a noun/verb contrast at the word level are Hukari 1976, Kinkade 1983, Jelinek & Demers 1982, Davis & Saunders 1981, Bach 1988, Jelinek 1993a, 1994). Others have taken the opposite position (see Jacobsen 1979 for a review of earlier discussion, and Hess & van Eijk 1985).

The question has clearly been a vexing one, and we think it requires reformulation. In this paper we present an analysis of Straits Salish syntax that provides

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a new perspective on the problem. This analysis is based on field work on two closely-related Straits Salish dialects, Lummi and Samish, along with information on other dialects and languages of this group drawn from the publications and data generously provided by our colleagues; we are particularly indebted to the work of Timothy Montler on Saanich (1986, 1991). We expect our approach to be relevant to the analysis of other Salish languages as well, but there are significant syntactic differences across the members of the Salish family that bear on the noun/verb problem. The Tsimshian and Wakashan languages appear to show even greater differences.

**1.1. PRONOMINAL ARGUMENTS.** A central feature of Straits Salish syntax that underlies the absence of a noun/verb contrast at the lexical level is the nature of argument structure in these languages, which show the following parametric feature (Jelinek 1984, 1993c, Baker 1991, 1994):

(1) [+Pronominal Arguments]

In languages with exclusively pronominal arguments, only clitics and affixes occupy argument positions. In Straits Salish, lexical roots do not appear independently; they are always inflected for their arguments, and cannot themselves serve as arguments. As a result, any open-class root appears as the lexical head of its own clause. Complex utterances are composed of multiple clauses, with coindexing of pronominal arguments across main and adjoined clauses; no lexical item is governed by another.

Chomsky 1992 defines the lexicon as containing fully inflected words. The Salish lexicon contains predicates, since roots do not appear without inflection. Roots combine with [ $\pm$ TRANSITIVE] and various affixes to derive predicates, and predicates combine with clitics to derive clauses. Aside from predicates, there are a few closed-class items—sentence particles and a small set of adverbials with a distinct syntax.

Salish roots may have the lexicosemantic features that are associated with nouns, verbs, or adjectives across languages.<sup>1</sup>

- (2) a. *t'iləmə = lə = sɬ<sup>m</sup>*.  
 sing = PAST = 2sg.NOM  
 'You sang.'
- b. *si'em = lə = sɬ<sup>m</sup>*.  
 noble = PAST = 2sg.NOM  
 'You were a chief.'
- c. *sey'si' = lə = sɬ<sup>m</sup>*.  
 afraid = PAST = 2sg.NOM  
 'You were afraid.'

In the examples in 2 there is no overt [TRAN], and the predicate is intransitive.<sup>2</sup>

<sup>1</sup> For a discussion of these features and their syntactic manifestation across languages, see Langacker 1987.

<sup>2</sup> The following abbreviations are used in this paper: 1 = first person, 2 = second person, 3 = third person, ABS = absolutive, ACC = accusative, CAUS = causative, COMP = complementizer, CONJ = conjunction, DEM = demonstrative, DET = determiner, DETP = determiner phrase, ERG

There are clitics marking tense and the subject. Any root may occur as lexical head of a predicate, and any predicate/argument structure may occur under the scope of a demonstrative in a subordinate Determiner Phrase (DETP).

- (3) a. *cə t'ilem = lə*  
 DET sing = PAST  
 'the (one who) sang'
- b. *cə si'em = lə*  
 DET noble = PAST  
 'the (one who) was a chief'
- c. *cə sey'si' = lə*  
 DET afraid = PAST  
 'the (one who) was afraid'

The clitics are unstressed. Determiners are often procliticized to the following word. Additional examples suggest the semantic range of roots in Straits Salish:

- (4) a. *stəŋ = lə = sɬ<sup>w</sup>?*  
 do what/something = PAST = 2sg.NOM  
 'What did you do?'
- b. *česə = sə = t.*  
 two = FUT = 1pl.NOM  
 'We'll be two (in number).'

When the predicate contains no overt suffixes, as in *exx.* 2, 4, and 5, root and predicate coincide at the level of phonological structure. Third-person intransitive subjects are phonologically null, and utterances without overt subject clitics, as in 5, are strictly interpreted as SENTENCES with definite third-person absolutive subjects.

- (5) a. *čey = Ø.*  
 work = 3ABS  
 'He works.'
- b. *sɬəy'qə' = Ø.*  
 male = 3ABS  
 'He is a man.'

(We return to the question of absolutive case below.) Therefore, in 5, root, predicate, and sentence coincide at the phonological level. A ZERO member of any paradigm marking an obligatory inflectional feature is virtually universal in languages with a 'rich' inflectional morphology.

Some Salish roots can occur with possessive pronominal affixes; on this basis, they may be defined as nominal roots. However, members of this root set may appear also without possessive pronouns in [+TRAN] constructions with accusative objects. What is of central importance here is that predicates composed of a root plus a possessive argument cannot appear in argument

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= ergative, EVID = evidential, FEM = feminine, FUT = future, MASC = masculine, MID = middle, NCMID = noncontrol middle, NCT = noncontrol transitive, NEG = negative, NOM = nominative, OBJ = object, OBL = oblique, PASS = passive, pl. = plural, POSS = possessive, PRES = present, Q = question, RDP = reduplication, RECIP = reciprocal, REFL = reflexive, RL = relational, sg. = singular, SBD = subordinate, SUBJ = subject, STAT = stative, and TRAN = transitive.

The symbol ' indicates glottalization when it appears after a consonant and a glottal stop elsewhere.

positions. They have the same syntax as any other predicate: (a) they occur in the sentence-initial predicate position, combining with the inflectional (INFL) clitic sequence to form finite clauses; and (b) they occur with demonstratives in adjoined DETPs. Since the Straits Salish languages have no free-standing lexical items that correspond to zero-level nouns and verbs, there are no maximal projections (NP, VP) based on distinct lexical categories. These properties in turn are made possible by the nature of argument structure in these languages. Straits Salish provides important data for the investigation of universal clause structure and lexical categories, and for X-bar theory and related views of phrasal categories as maximal projections of lexical classes.

**1.2. NOUN AND VERB IN UNIVERSAL GRAMMAR.** The noun/verb contrast across languages expresses functor/argument structure. In traditional grammar, noun and verb were said to differ in that the former refers to entities and the latter refers to actions; there are familiar problems with definitions of this kind. Within the structuralist tradition, N and V were differentiated on the basis of the affixes associated with them; we will consider this question with reference to the possessive affixes. Within generative grammar, N and V are distinguished by the fact that only verbs can be transitive, capable of theta-marking and case-marking an object—nouns, even when they are bivalent, are not transitive in this sense.

The feature of Straits Salish syntax that permits the lack of constraints on the distribution of lexical roots is the fact that the feature of transitivity is not a lexical property of a subset of roots. Instead, transitivity is a property assigned to predicates via a functional head, that is, an INFL category that is an obligatory feature of clause structure, marking the valence of the clause; this functional head is [ $\pm$ TRANSITIVE]. The overt transitivity markers in these languages mark certain aspectual properties of the predicate, such as accomplishment, along with features such as the volitionality of the transitive agent. When there is no overt TRAN element, the sentence is [ $-$ TRAN]. The paradigm is given in 6:

- (6) a.  $ye' = l\partial = sX''$ .  
       go = PAST = 2sg.NOM  
       'You went.'
- b.  $ye' - t - \acute{o}\eta\partial s = l\partial = sX''$ .  
       go-TRAN-1sg.ACC = PAST = 2sg.NOM  
       'You sent me.'
- c.  $ye' - t(i)\eta = l\partial = s\partial n$ .  
       go-TRAN-PASS = PAST = 1sg.NOM  
       'I was sent.'

Ex. 6a shows an intransitive. Ex. 6b shows the root with two suffixes, a transitivizer and an internal accusative argument, and 6c includes the passive suffix. Overt transitivizers as functional heads are found in other language families, including Athabaskan (Jelinek & Willie 1993) and Eskimo (Murasugi 1992, 1994).

The terms 'internal argument' and 'external argument' as used in this paper refer to morphological structure. Internal arguments are affixes to the root, within the predicate; external arguments are clitics that attach to the predicate.

In the Salish examples we represent this phonological contrast with hyphens for affixes and the equals sign for clitics. Affixes are integrated into the phonological structure of the word, and can carry the primary word stress, as marked in 6b–c; clitics are always unstressed.

Since TRAN is not a subcategorizational feature of a lexical class of verbs, but rather an obligatory feature of Straits Salish clause structure, we frequently see transitive constructions that the nonspeaker finds it difficult to gloss, as in 7:

- (7) a. *his* = ∅.  
 long.time = ABS  
 ‘It’s been a long time.’ (Intransitive)
- b. *his-t-óηəs* = sɬʷ.  
 long.time-TRAN-1sg.ACC = 2sg.NOM  
 ‘You kept me a long time.’ (Transitive)
- c. *his-t-íη* = sən.  
 long.time-TRAN-PASS = 1sg.ACC  
 ‘I was kept a long time.’ (Passive)

Constructions of this kind are made possible by the fact that transitivity is a feature of clauses, not of a lexical category. In §2 we explore some of the consequences for the syntax of the presence of TRAN as a separate functional head in Straits Salish.

**1.3. A COMPARISON WITH SEMITIC.** It will be useful to compare words, lexical structure, and maximal projections in Straits Salish with the corresponding features in a better-known language family, Semitic. In the Semitic languages, as in Salish, words are based on roots that do not occur independently. There is an open class of abstract roots composed of a set of consonants (typically three) that have ‘lexical’ meanings. Lexical items are derived by combining these abstract trilateral roots with various closed-class elements consisting of vocalic melodies (McCarthy 1979) and other affixes that are morphological and syntactic operators. These trilateral roots appear in nouns, verbs, and other words; each word based on these root consonants belongs to a particular lexical category. For example, the consonant array *ktb* is associated with the notion of writing. The examples in 8 are from Egyptian Arabic:

- |     |                 |             |               |          |
|-----|-----------------|-------------|---------------|----------|
| (8) | <i>katab</i>    | ‘he wrote’  | <i>kitaab</i> | ‘book’   |
|     | <i>biyiktib</i> | ‘he writes’ | <i>kutub</i>  | ‘books’  |
|     | <i>maktuub</i>  | ‘written’   | <i>kaatib</i> | ‘writer’ |

The lexical items in 8 are zero-level Ns or Vs that function as heads of corresponding maximal projections, NPs and VPs. In Semitic a word contains an abstract root; this word belongs to a lexical category, although the underlying CCC root does not. This is a productive process seen also in loanwords, as in 9, showing forms of the root *flm* (borrowed from English *film*):

- |        |                    |                           |
|--------|--------------------|---------------------------|
| (9) a. | <i>film</i>        | N ‘film’                  |
| b.     | <i>‘aflaam</i>     | N ‘films’                 |
| c.     | <i>bi-yifillim</i> | V ‘He is making a movie.’ |
|        |                    | PRES-3sg.MASC.FLM.CAUS    |

Compare an example of a comparable derivation with a borrowed root in Salish (from English *school*; Montler 1986:42):

(10) *s-k<sup>w</sup>uk<sup>w</sup>əl'* = *sən*.

STAT-SCHOOL.ASPECT = 1sg.NOM

'I'm schooling (going to/attending school).'

Ex. 10 shows a predicate based on the borrowed word *school* reanalyzed as containing a root *k<sup>w</sup>ul*, with iterative aspect marked via reduplication and a stative *s-* prefix, outside the scope of the reduplication. The sentence is [-TRAN].

In Straits Salish, as in Semitic, a word contains a root. The difference is that the Salish word does not belong to a lexical category such as noun, verb, or adjective; it is a predicate to which the INFL clitics attach. Although Straits Salish predicates differ in [TRAN] and therefore in internal argument structure, there are no subclasses of predicates with distinct maximal projections. This marked difference between Semitic and Straits Salish follows from the fact that the Salish word contains more levels of structure; it contains [TRAN] and the internal arguments, and along with the encliticized subject it corresponds to a sentence.

Problems in sorting out the morphological and syntactic properties of roots, predicates, and sentences, which in some forms may coincide at the phonological level, have contributed to the obscurity surrounding the noun/verb issue in Salish. These problems in turn can be traced to a misperception of the nature of argument structure in the Salish languages. Pronominal arguments are a necessary but not a sufficient condition for the lack of a noun/verb contrast; there are pronominal argument languages that have nouns (see Jelinek 1984, Baker 1991, Jelinek & Willie 1993). But for a language to lack a noun/verb contrast, it must have only pronominal affixes and clitics in A-positions (i.e. argument positions). Otherwise, if each root heads its own clause, there would be an infinite regress in argument structure.<sup>3</sup>

**1.4.** After these preliminary observations, we turn to a more detailed examination of Straits Salish syntax, in order to provide evidence for the claims that our analysis incorporates. Section 2 presents the analysis as applied to main clauses. We offer evidence that Straits Salish lacks a copular verb; this is important because the presence of a copula presupposes distinct lexical classes. We also document the absence of prepositional phrases. In §3 we analyze subordinate clauses, including the Determiner Phrases, and in §4 we provide further evidence in support of our analysis drawn from an examination of the syntax of quantifiers and WH-words. Section 5 deals with the expression of indefiniteness, and §6 is a summary and concluding discussion.

<sup>3</sup> We thank an anonymous reviewer for raising the question of whether there might be a language just like Straits Salish, except for having DETPs in A-positions. In such a language, the predicates on which the argumental DETP would be based would in turn have their own DETP argument structure, and so on ad infinitum.



2. THE ANALYSIS OF MAIN CLAUSES. If Straits Salish lacks the familiar inventory of lexical categories, it lacks projections of these categories at successive hierarchical levels. In this section we examine the second-position clitic sequence that contains the subject and various inflectional heads, and the internal structure of the predicate, where *TRAN*, voice alternations, and internal arguments are marked.

2.1. THE CLITIC STRING. The inflectional categories of tense, modality, sentence mood, and the subject are represented in a second-position clitic string, which is a major feature of Straits Salish syntax.

(11) SENTENCE OPERATORS:

- |                                                                                      |                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>a. TENSE CLITICS:</p> <p>= <i>sə</i>      Future</p> <p>= <i>lə</i>      Past</p> | <p>b. MODAL CLITICS:</p> <p>= <i>yəq</i>      Optative</p> <p>= <i>yəx<sup>m</sup></i>      Evidential</p> <p>= <i>č'ə</i>      Probability/Reportative</p> <p>= <i>q</i>      Conditional</p> |
| <p>c. MOOD:</p> <p>= <i>ə</i>      Interrogative</p>                                 |                                                                                                                                                                                                |

In the absence of a clitic marking tense overtly, the temporal reference of the sentence is open and may be interpreted as present or past time.

There is an 'ergative split' in Straits Salish. As is frequently the case in such splits, first- and second-person arguments show a nominative/accusative contrast, while third-person arguments are ergative/absolutive (Jelinek 1993b). Number is not marked in the third person. For convenience of exposition, we will call first and second person *LOCAL* arguments, and third person *NONLOCAL*; these terms were introduced by Hockett (1966) in his description of Algonquian. Local arguments are the speech-act participants, and nonlocal arguments are the persons and things discussed. Clitic subjects were illustrated in exx. 2 and 4–7 above; the complete list is given in 12:

(12) SUBJECT PRONOUNS:

- |                                                                                                                                                                                                               |                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <p>a. LOCAL SUBJECTS:</p> <p>Nominative case:</p> <p>= <i>sən</i>      'I'</p> <p>= <i>sx<sup>m</sup></i>      'you (sg.)'</p> <p>= <i>t</i>      'we'</p> <p>= <i>sx<sup>m</sup>helə</i>      'you (pl)'</p> | <p>b. NONLOCAL SUBJECTS:</p> <p>Absolutive case:</p> <p>= <math>\emptyset</math>      'he/she/it/they'</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|

2.2. THE PREDICATE: TRANSITIVITY AND VOICE. The predicate-internal arguments include accusative and absolutive patients, ergative agents, and possessors, including experiencers.

2.2.1. TRANSITIVIZERS. In morphological structure, the root is obligatorily followed by a transitivizer ([ $\pm$ TRAN]) suffix. The Salish languages typically have a set of these transitivizers, used to mark differences in the degree of agentivity or volitionality assigned to the agent; this feature has traditionally been called *CONTROL* by Salishanists (Thompson 1979).

- (13) a.  $t'əmə-t-əŋəʔ = sɤ''$ .  
hit-TRAN-1pl.ACC = 2sg.NOM  
'You hit us on purpose.'
- b.  $t'əmə-n-əŋəʔ = sɤ''$ .  
hit-NCT-1pl.ACC = 2sg.NOM  
'You hit us by accident/finally managed to hit us.'

In 13, TRAN identifies the control transitivizer and NCT identifies the noncontrol transitivizer. The noncontrol transitivizer can convey inefficiency as well as inadvertence, as the glosses for 13b suggest. If there is no overt transitivizer, the sentence is [-TRAN], as in 2 above.

**2.2.2. THE ERGATIVE SPLIT AND THE PERSON HIERARCHY.** The case split across person produces the following set of internal arguments in transitive clauses:

- |                          |              |
|--------------------------|--------------|
| (14) a. LOCAL:           | b. NONLOCAL: |
| -əŋəs 1sg. or 2sg/pl.ACC | -∅ 3ABS      |
| -əŋəʔ 1pl.ACC            | -(ə)s 3ERG   |

Note that the ergative is a MORPHOLOGICALLY INTERNAL argument, a suffix, in contrast to nominative agents, which appear last in the clitic string. Compare 15a,b:

- (15) a.  $q''əy-t-∅ = lə = sɤ''$ .  
die-TRAN-3ABS = PAST = 2sg.NOM  
'You killed him.'
- b.  $q''əy-t-s = lə = ∅$ .  
die-TRAN-3ERG = PAST = 3ABS  
'He killed him.'

In some sentences the absolutive is an internal argument, and in others it is an external argument: this is the distribution of the absolutive, by definition. The absolutive is always third person and is always phonologically null. It is internal when it occurs with a nominative agent (15a) and external when it occurs with an ergative agent (15b) or as intransitive subject (ex. 5 above). In the examples here, null arguments are shown with hyphens or equal signs, as with overt arguments. Null arguments are the significant absence of an overt argument in a specified position (internal or external) where some member of a small closed paradigm is required.

In Straits Salish there are constraints on the co-occurrence of arguments according to person. Consider the following paradigm:

- |         |                      |                   |          |
|---------|----------------------|-------------------|----------|
| (16) a. | $nəp-t-əŋəs = sən$ . | 'I advised you.'  | NOM ACC  |
| b.      | $nəp-t-∅ = sən$ .    | 'I advised him.'  | NOM ABS  |
| c.      | $nəp-t-s = ∅$ .      | 'He advised him.' | ERG ABS  |
| d.      | *_____               | 'He advised me.'  | *ERG ACC |
| e.      | $nəp-t-ŋ = sən$ .    | 'I was advised.'  | NOM      |

Transitive sentences where a nonlocal agent acts upon a local patient (16d) are excluded; a passive construction (16e, with the passive suffix -ŋ) may be employed in its stead. This produces what has been termed a PERSON HIERARCHY (Jelinek & Demers 1983, Jelinek 1993a).



**2.2.3. PASSIVE AND MIDDLE PREDICATES.** Straits Salish has passive and anti-passive constructions. Passive is marked by the suffix *-ŋ* following a transitivizer; this suffix marks the subject as 'affected', a patient. An oblique agent may optionally be specified in an adjunct.

- (23) *t'əm'-t-ŋ = sɣ''* ('ə cə t'əm'-t-∅).  
 hit-TRAN-PASS = 2sg.NOM (OBL DET hit-TRAN-3ABS)  
 'You were hit (by the one who hit him).'

Passive constructions are obligatory in reporting an event where a third-person agent acts upon a first- or second-person patient—the transitive construction type excluded by the person hierarchy in 17 above.

Note that the transitivizer in a passive marks the agentivity or volitionality of the implicit agent licensed by the transitivizer suffix.

- (24) a. *t'əm'-t-ŋ = sən*.  
 hit-TRAN-PASS = 1sg.NOM  
 'I was hit [on purpose].'  
 b. *t'əm'-n-ŋ = sɣ''*.  
 hit-NCT-PASS = 2sg.NOM  
 'You were hit [by accident].'

Ex. 24a does not convey that the speaker deliberately had himself hit, but rather that some implicit agent intentionally hit him. When the *-ŋ* suffix that occurs in passives appears in a [-TRAN] construction, it again marks the subject as affected; the construction is a middle:

- (25) *hes-ŋ = ∅*.  
 sneeze-MID = 3ABS  
 'He sneezed.'

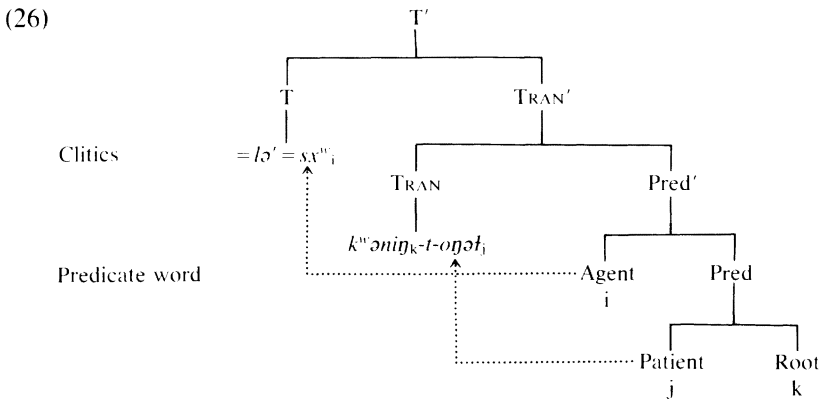
The degree of volitionality or 'control' exercised by a subject is marked in the two middle suffixes. At least some of these middles are unaccusatives.

In sum, voice alternations in Straits Salish are morphologically derived via the transitivizer and passive suffixes. These voice alternations produce changes in the internal argument structure of the predicate and changes in the theta role assigned to the clitic subject.

**2.3. THE RAISING ANALYSIS.** We assume a derivation of the Straits Salish main clause via 'predicate raising', in the spirit of Pollock 1989. Predicates and their affixes form a single phonological word, which can undergo head movement (Travis 1984). These predicates raise to join the tense clitic in INFL. We follow Baker & Hale 1990 in claiming that pronouns can raise to incorporate into the element that assigns case to them. The external argument raises to adjoin TENSE, and the internal argument raises to adjoin TRANSITIVE. We follow Murasugi 1992 in identifying Transitive (TRAN) as a functional head that assigns case to the internal argument; see also Jelinek 1994. Kratzer 1994 relates transitivity to VOICE as a functional head in universal clause structure, and Diesing & Jelinek (1995) assign similar properties to an Aspect node above the VP.

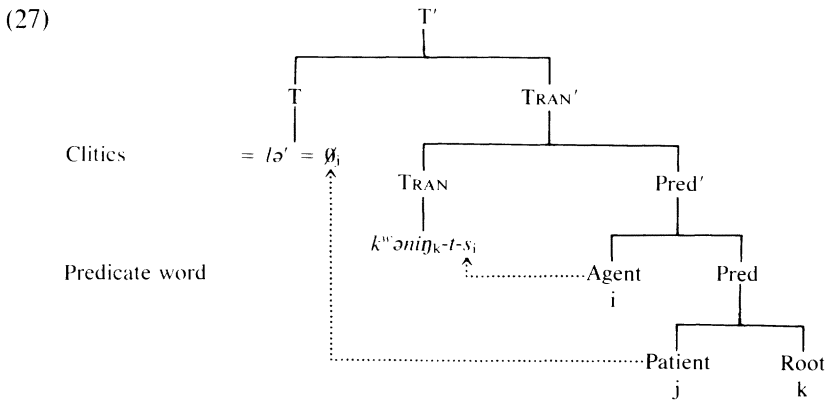
In accusative constructions in Straits Salish, Tense (T) assigns nominative case to the external argument; internal arguments receive accusative case from

TRAN. As shown in 26, the raising of the pronominal arguments to their associated functional heads produces crossed paths.



*k'wəniŋ-t-oŋəʔ = lə = sɔ'w*.  
 help-TRAN-1pl.ACC = PAST = 2sg.NOM  
 'You helped us.'

The root raises to adjoin TRAN with the incorporated internal argument, and the complete predicate word raises to adjoin to the clitic string, Tense, and the subject. These movement processes produce the observed surface order of the constituents. In ergative constructions (ex. 27), the ERG pronoun raises to TRAN, and the subject is ABS. This raising produces nested paths, as Murasugi (1992) argues for ergative constructions universally.



*k'wəniŋ-t-s = lə = ø*.  
 help-TRAN-3ERG = PAST = 3ABS  
 'He helped him.'

The Straits Salish ergative is a kind of 'inverse' of the accusative construction, and is a part of the system of voice alternates in the language. It differs from passive in that, while placing the patient in focus, it is a [+TRAN] construction.

Consider now another Straits Salish construction type, one that provides evidence for the raising analysis. In this type roots are combined in a complex

predicate, and only the first word of the complex predicate raises to join the clitic string:

- (28) a. 'əy' = s.x"      swəy'qə'.      b. \*'əy' swəy'qə' = s.x".  
 good = 2sg.NOM man                      good man = 2sg.NOM  
 'You are a good man.'

As a result of this raising, the clitic string interrupts the serial predicate in the surface string. The first root in a construction of this kind must be intransitive; the second may be transitive, with an internal argument.

- (29) a. 'ən'e = lə = sən      leŋ-t-oŋəs.  
 come = PAST = 1sg.NOM see-TRAN-1/2ACC  
 'I came to see you.'  
 b. 'ən'e = lə = s.x"      leŋ-t-ŋ.  
 come = PAST = 2sg.NOM see-TRAN-PASS  
 'You were visited ['come-to-see'd'].'

In 29b The passive takes scope over the complex predicate, providing evidence that the complex predicate forms a constituent with a single argument structure. Compare a simple passive:

- (30) k"ənŋ-t-ŋ = lə = s.x".  
 help-TRAN-PASS = PAST = 2sg.NOM  
 'You were helped.'

**2.4. NOMINAL ROOTS AND POSSESSIVE ARGUMENTS.** We have proposed defining those roots occurring with possessive pronouns as nominal roots, forming [-TRAN] predicates whose 'external' syntax is the same as all other predicates: they are excluded from argument positions, and they occur with the INFL clitic sequence to form a finite sentence.

The possessive pronouns (prefixes and suffixes) are shown in the examples in 31.

- (31) a. nə-ten = s.x".                      b. 'ən-ŋəŋəŋə = t.  
 1sg.POSS-mother = 2sg.NOM              2sg.POSS-child.RDP = 1pl.NOM  
 'You are my mother.'                      'We are your children.'  
 c. 'e'ləŋ-s = Ø.                              d. x'əyəq-t = Ø.  
 house-3POSS = 3ABS                      box-1pl.POSS = 3ABS  
 'It's his house.'                              'It's our storage box.'

First singular and second-person possessors precede the root, while first plural and third person follow it.<sup>5</sup>

The stative prefix *s-* frequently occurs with the possessive affixes, though it does not appear with the examples in 31. With 'psych' predicates the stative

<sup>5</sup> There is also a periphrastic possessive construction in Straits Salish in which a root meaning 'property' is included in a complex construction:

- (i) nə-sk"i' = Ø      nə-sq"əməy'.  
 my-property = 3ABS my-dog  
 'It's my dog.'

is present, and possessors are experiencers:

- |                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(32) a. <math>nə-s-χ'i' = \emptyset</math>.<br/>         1sg.POSS-STAT-dear = 3ABS<br/>         'It's what I like.'</p> <p>c. <math>s-χ'i'-s = \emptyset</math>.<br/>         STAT-dear-3POSS = 3ABS<br/>         'It's what he likes.'</p> | <p>b. <math>'ən-s-χ'i' = \emptyset</math>.<br/>         2sg.POSS-STAT-dear = 3ABS<br/>         'It's what you like.'</p> <p>d. <math>s-χ'i'-t = \emptyset</math>.<br/>         STAT-dear-1pl.POSS = 3ABS<br/>         'It's what we like.'</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The examples in 32 show a predicate with an internal possessive argument and a null third-person subject argument. In 33 below, as with the kin terms in 31a–b, the subject is non-third person and thus overt.

- (33) a.  $nə-s-χ'i' = sχ''$ .  
 1sg.POSS-STAT-dear = 2sg.NOM  
 'I like you.' ('You are what I like.')
- b.  $'ən-s-χ''ətin' = sən$ .  
 2sg.POSS-STAT-dislike = 1sg.NOM  
 'You dislike me.' ('I am what you dislike.')
- c.  $nə-s-ləl = lə = \emptyset$   $k''ə ye'-ən$ .  
 1sg.POSS-STAT-intend = PAST = 3ABS DET go-1sg.SBD  
 'It was my intention to go [that I go].'

Ex. 33c contains a subordinate clause. Psych predicates state a relationship between two arguments that are not assigned Agent and Patient theta roles; the construction is [–TRAN]. If there is a morphologically internal argument, it can only have possessive case. When the TRAN functional head has a [+TRAN] value, it assigns a structural case to the internal argument, either ACC or ERG, depending upon the case split. Possessive case is not a structural case, and thus cannot be assigned by [+TRAN]. Consider the following contrast:

- (34) a.  $smənəč-s = \emptyset$ .  
 pitch-3POSS = 3ABS  
 'It is his pitch.'
- b.  $smənəč-t-s = \emptyset$ .  
 pitch-TRAN-3ERG = 3ABS  
 'He is "pitching" it (covering it with pitch).'
- c.  $*smənəč-s-t-(ə)s = \emptyset$ .  
 pitch-3POSS-TRAN-3ERG = 3ABS  
 ['He is "his-pitching" it.']

In 34c, [+TRAN] is incompatible with POSS case on the internal argument.

The possessive affixes can occur with or without the stative prefix *s-*, as we saw above in 31–33. This prefix has often been called a nominalizer in analyses of Salish languages; but examples like Saanich  $wəy'qə$  'boy baby' vs.  $s-wəy'qə$  'man, male' (Montler 1991) present difficulties for such an analysis, since it is not clear why 'man' should be a nominalized form while 'boy baby' is not. (See also Kinkade 1983 for arguments that this prefix is a stative rather than a nominalizer.)

Clearly, Straits Salish predicates with possessive arguments share certain semantic features as well as internal argument structure with NPs in other languages. Material objects and entities can be described as possessed, and so can states and experiences, when they are given the same grammatical status as entities. But there is a crucial property that distinguishes Straits Salish predicates with possessive arguments, whether or not the *s-* prefix is present, from NPs elsewhere: Straits Salish predicates take subjects in finite main clauses. In particular constructions, predicates differ in the internal morphosyntax of their internal arguments; however, it is not the case that particular roots invariably select a particular argument structure in building predicates. Compare the two readings of 35c:

- (35) a.  $s-n\acute{\alpha}x''\acute{\alpha}t = \emptyset$ .  
 STAT-canoe = 3ABS  
 'It's a canoe.'
- b.  $n\acute{\alpha}-s-n\acute{\alpha}x''\acute{\alpha}t = \emptyset$ .  
 1sg.POSS-STAT-canoe = 3ABS  
 'It's my canoe.'
- c.  $s-n\acute{\alpha}x''\acute{\alpha}t-'el\eta\eta n = s\acute{\alpha}n$ .  
 STAT-canoe-DESIDERATIVE = 1sg.NOM  
 'I want a canoe/I want to build a canoe.'

In 35c the stative prefix does not prevent the predicate from having both agentive and relational interpretations. Recall also 10 above, repeated here:

- (10')  $s-k''uk''el' = s\acute{\alpha}n$ .  
 STAT-school.ASPECT = 1sg.NOM  
 'I'm schooling (going to/attending school).'

In this predicate based on a borrowed root, the initial *s-* is reinterpreted as a stative prefix in a finite clause.

In sum, the claim that Straits Salish lacks lexical nouns does not imply that there are no nominal roots that describe entities or material objects, and it does not imply that these entities cannot be described as possessed. The evidence given here shows that all roots, including those used to describe entities (which may be marked possessed) function as the lexical heads of finite clauses.

**2.5. EVIDENCE AGAINST A ZERO COPULA.** Crosslinguistically, copular verbs typically differ from canonical verbs in their morphology and syntax, and they are often phonologically null in some tense/aspect or person forms. In this section we consider a possible null copula analysis for Straits Salish. Adjectives in some languages correspond to intransitive verbs in others, and we assume that this aspect of our analysis of Salish syntax is relatively uncontroversial. However, the proposal that there are predicates in some languages with a possessive internal argument that are able to assign case to an external argument, a subject (as in 31 above), is not consistent with current views concerning lexical categories and their projections in universal grammar. If we can find evidence for a null copula in Straits Salish sentences with possessive arguments, then these Straits Salish constructions fall in line with what we expect from our knowledge of other languages; this factor alone requires us to give this line of investigation careful attention.

Suppose we were to claim that those roots that can appear with a possessive



argument occur with a null copula in finite clauses, in all tense/aspect and person forms, while other predicates do not. The problem is that there is no way to constrain the distribution of this null copula. Unless an internal argument is present, the status of a predicate as noun or verb would be indeterminate. This problem arises with all intransitive sentences in Salish, as first noted in Kuipers 1968. A striking and frequently noted fact about Salish is that no root appears to be immune from transitivization, even adverbs and roots that are semantically ‘adjectival’ (36b was used in speaking of the weather):<sup>6</sup>

- (36) a. *məkw'-t-∅ = lə = sən.*  
 all-TRAN-3ABS = PAST = 1sg.NOM  
 ‘I took all of them/it [“totaled” them].’  
 b. *'əy'-t-ŋ = ∅.*  
 good-TRAN-PASS = 3ABS  
 ‘It has improved [“been made good”].’

Whatever the internal structure of predicates, their external syntax is identical: they combine with the INFL categories marked in the clitic string to produce a finite clause.

Initial evidence against a null copula is provided by the fact that DETPs cannot appear in the sentence-initial predicate position in ‘equational’ sentences. The following are all ungrammatical as finite sentences:

- (37) a. \**cə si'em.* [‘He is the chief.’]  
 DET chief  
 b. \**cə si'em cə swəy'qə'.* [‘The man is the chief.’]  
 DET chief the man  
 c. \**cə si'em = sx'.* [‘You are the chief.’]  
 DET chief = 2sg.NOM

While predicates serve as the lexical head of finite clauses, DETPs cannot do so. If there were a null copula, we would not expect this sentence type to be excluded. Instead, we see deictic predicates in cleft-like constructions:

- (38) a. *niŋ = ∅ cə si'em.*  
 BE.HIM = 3ABS DET chief  
 ‘That’s him, the [one who is] chief.’  
 b. *niŋ = ∅ cə swəy'qə' cə si'em.*  
 BE.HIM = 3ABS DET man DET chief  
 ‘That’s him, the [one who is] man, the [one who is] chief.’

Other construction types in which we see copular verbs crosslinguistically are possessive, existential, and locative sentences. Within the class of possessive sentences, we saw above in 31 that kin terms are predicates. Another kind of possessive sentence employs the relational prefix *č-*, as seen in 39b.

<sup>6</sup> Since there is no lexical category ‘adjective’ in Straits Salish, there is no comparative-superlative inflection. Comparatives are two-clause contrastive constructions:

(i) *'əy' = ∅ c-u-niŋ. tɬ'iwəl = ∅ 'ə cə nəkw'.*  
 good = 3ABS DET-LINK-BE.HIM, beyond = 3ABS OBL DET BE.YOU  
 ‘That guy is good, he is beyond [better than] you.’

There are no superlative constructions.

- (39) a. *steniy'* = *sən*.  
 woman = 1sg.NOM  
 'I am a woman.'
- b. *č-steniy'* = *sx''*.  
 RL-woman = 2sg.NOM  
 'You have a wife.'

There are deictic or locative roots that are used in existential constructions, to be examined in §4. The following example is ambiguous:

- (40) *ni'* =  $\emptyset$       *cə sčeenəx''*.  
 there = 3ABS DET fish  
 'There's fish.' Or, 'There's the fish.'

The syntax of deictic predicates is the same as that of all other predicates.

Additional evidence against a copular verb is provided by the syntax of locative expressions. There is arguably a single preposition in Straits Salish, which marks DETPs oblique. We have seen the oblique marker with the optional theme argument of the root 'give', and with agent adjuncts in passive sentences (examples 22 and 23, above, repeated here).

- (22') *'oŋəs-t-oŋəʔ* = *sx''*      (*'ə cə k''ən-t-əx''*).  
 give-TRAN-1pl.ACC = 2sg.NOM (OBL DET take-TRAN-2sg.SBD)  
 'You gifted us (with the one you caught).'
- (23') *t'əm'-t-ŋ* = *sx''*      (*'ə cə t'əm'-t-∅*).  
 hit-TRAN-PASS = 2sg.NOM (OBL DET hit-TRAN-3ABS)  
 'You were hit (by the one who hit him).'

The oblique marker appears only before DETPs; that is, there are no pronominal objects of prepositions. Oblique DETPs also appear as locative expressions. These oblique locative expressions are excluded from the predicate position in a sentence. Compare 41a,c with 41b:

- (41) a. *čey* = *sən*      *'ə cə 'eləŋ*.  
 work = 1sg.NOM OBL DET house  
 'I work at the house.'
- b. \**'ə cə 'eləŋ* = *sən*.  
 OBL DET house = 1sg.NOM  
 ['I am at the house.']
- c. *le'* = *sən*      *'ə cə 'eləŋ*.  
 there = 1sg.NOM OBL DET house  
 'I am/was there at the house.'

Again, if Straits Salish had a null copula, perhaps as a feature of INFL or equivalent to [-TRAN], then we would have no account of the exclusion of DETP (41b) and oblique expressions from the sentence-initial predicate position in the clause.<sup>7</sup> Ex. 41c contains a deictic predicate, which like any other predicate combines directly with the clitic string to produce a finite sentence, without the mediation of a copula.

Straits Salish has a few relational and directional prefixes that derive complex intransitive predicates. These prefixes do not increase the valence of the predi-

<sup>7</sup> The fact that sentences cannot begin with a DET or the OBL marker cannot be attributed to the phonological constraint against stressing particles. There are other unstressed elements that may begin a sentence, such as the LINK particle and certain modal or adverbial particles.

cate, which is [-TRAN]; examples are 39b above and 42a–b (Bellingham [*x''otqəm* 'waterfall'] is a town in the Lummi area of Washington state):

- (42) a.  $\lambda'ə-x''otqəm = sən$ .  
to-waterfall = 1sg.NOM  
'I [am going] to Bellingham.'  
b.  $\check{c}ə-x''otqəm = sən$ .  
from-waterfall = 1sg.NOM  
'I [am] from Bellingham.'

An example of a directional in a subordinate clause is given in 43:

- (43)  $se'e-t-ŋ = sən$                        $k''ə \lambda'ə-tawən-ən$ .  
tell-TRAN-PASS = 1sg.NOM DET to-town-1sg.SBD  
'I was told [to go] to town.'

In 43 the predicate  $\lambda'ə-tawən$  (based on English *town*) has a prefixed directional element and is followed by the 1sg. subordinate subject suffix (see §3). This is evidence that  $\lambda'ə-tawən$  constitutes a predicate.

In sum, there is evidence against a null copula analysis in equational, existential, possessive, and locative sentences, which crosslinguistically comprise the construction types where copular verbs most often appear.<sup>8</sup> Accordingly, we reject an analysis in which some sentences in Straits Salish have a null copula, on the grounds that such a copula would be simply a syntactic feature of that predicate class; and there seems to be no material difference between a claim of this kind and the simpler claim that all open-class words in Straits Salish are predicates which take subject external arguments. The copula is an S-structure syntactic device whereby a predicate can assign case to a subject argument, in languages where there are distinct lexical categories.

The strongest evidence against a copular analysis is the fact that only predicates based on lexical ROOTS can take arguments. As mentioned above, there are no pronominal arguments of prepositional phrases; the pronominal object suffixes are confined to predicate-internal positions. Each open-class root is the lexical head of a sentence, and the converse is also true: there are no sentences that are not based on a root with lexical content. A copula has no lexical content and is not an open-class element. We conclude that the absence of a copula follows from the absence of a noun/verb contrast at the lexical level.

**2.6. PERSON DEIXIS.** In §1 of this paper we claimed that Straits Salish is a pronominal argument language, and we presented the paradigms of internal

<sup>8</sup> A reviewer suggests that it might be possible to argue that 'be' in English is actually several different verbs (predicational, equational, and locational) that happen to be homophonous, only one of which happens to exist in Salish in a null form. Yaqui, a verb-final Uto-Aztecan language, has a copula which is overt in all nonpresent tense forms and null in the present, with all these functions:

- |                                |                                     |                                    |
|--------------------------------|-------------------------------------|------------------------------------|
| (i) $aapo\ ya'ut\ \emptyset$ . | (ii) $aapo\ 'u\ ya'ut\ \emptyset$ . | (iii) $aapo\ kari-po\ \emptyset$ . |
| he leader BE                   | he DET leader BE                    | he house-at BE                     |
| 'He is a leader.'              | 'He is the leader.'                 | 'He is at the house.'              |

Any of these sentences can be made past imperfect by adding *-tukan* 'was' to the sentence.

arguments (affixes) and external arguments (clitics). All 'direct' or core arguments in Straits Salish are pronouns marked NOM, ACC, ABS, ERG, or POSS (experiencer). This implies that there are no pronouns that can function as oblique arguments, and this is the case; the single preposition, an oblique marker, occurs only with the DETPs that are the topic of §3. How does Straits Salish solve the problem of oblique arguments that are identified only with respect to person and number?

A very interesting feature of the Straits Salish lexicon is the presence of a set of roots that mark just these semantic features, which are associated with pronominal paradigms across languages: person and number. These deictic roots are not pronouns; they are third person in syntax. Like all other roots, they appear either (a) in clause-initial position, followed by any predicate-internal affixes and the clitic string, or (b) in a predicate under the scope of a determiner, to form DETPs. They cannot occur in either subject (clitic) or object (affixal) positions. This set of forms in Lummi is given in 44; note that, while number is not marked in the third person in pronominal inflection, it is marked in the deictic root system:

- (44) 1sg.: 'əs    2sg.: nək''ə    3sg.: nit  
 1pl.: niŋət    2pl.: nək''iliyə    3pl.: nənitiyə

Ex. 45 shows an oblique DETP built on a person-deictic root:

- (45) leŋ-t-ŋ = sX''    'ə cə 'əs.  
 see-TRAN-PASS = 2sg.NOM OBL DET BE.ME  
 'You were seen by ME.'

Straits Salish employs DETPs built on person deictic roots in constructions involving first-, second-, or third-person oblique arguments, as in 45, since the oblique marker cannot occur with the pronominal objects, which are licensed only by [+TRAN]. The oblique marker occurs ONLY with DETPs, producing oblique adjuncts.

The person deictic roots place focus on a pronominal referent. They may appear as predicates as well as in adjuncts:

- (46) nək''ə = yəX'' = Ø    sə    nə-ten.  
 BE.YOU = EVID = 3ABS DET.FEM 1sg.POSS-mother  
 'It must be YOU who are my mother.'

These roots undergo various derivational and inflectional processes. In hypothetical clauses, predicates based on deictic roots have OVERT THIRD-PERSON SUBJECT inflection:

- (47) a. čte-t-ŋ = sən    k''ə nək''-əs.  
 ask-TRAN-PASS = 1sg.NOM DET BE.YOU-3SBD  
 'I was asked if it was YOU.'  
 b. xən-ŋ    cə Bill k''ə 'əs-əs.  
 do/act-MID DET Bill DET BE.ME-3SBD  
 'Bill acted for ME [in my place; acting as me].'

Since these deictic predicates have their own (third-person) argument structure, they function much like cleft constructions in other languages in placing a refer-

ent in focus. They provide a mechanism for placing contrastive focus on a pronominal referent, since only predicates, not pronominal inflection, may receive contrastive stress. Compare the following sentences:

- (48) a. *leŋ-t-oŋəs = lə = sən.*  
 see-TRAN-1/2ACC = PAST = 1sg.NOM  
 'I saw you.'
- b. *nək<sup>w</sup> = lə = ø                      cə    leŋ-t-ən.*  
 BE.YOU = PAST = 3ABS DET see-TRAN-1sg.SBD  
 'YOU were the one I saw.'
- c. *leŋ-t-ø = lə = sən                      cə    nək<sup>w</sup>.*  
 see-TRAN-3ABS = PAST = 1sg.NOM DET BE.YOU  
 'I saw the one that was YOU.'

Ex. 48a does not permit contrastive focus on an argument; 48b is comparable to a cleft construction, and 48c could be used (for instance) when recognizing someone in a crowd.

The person deictic roots, like most if not all other roots, may be transitivized:

- (49) a. *nək<sup>w</sup>-tə<sup>w</sup> = ø.*  
 BE.YOU-CAUS = 3ABS  
 'Let it be YOU.' ('YOU do it.') (see Montler 1991:55)
- b. *w'    k<sup>w</sup>l            nɪt-tə<sup>w</sup> = ø                      'al'    k<sup>w</sup>ə    w'    ʃx<sup>w</sup>ən'eŋ-əs.*  
 LINK already BE.IT-CAUS = 3ABS just COMP LINK how-3SBD  
 '(Just) leave it like that [the way it is].'

In 49a the second-person deictic root is transitivized with a causative suffix; in 49b the third-person deictic root is also transitivized with a causative suffix, and the WH-root 'how/way' shows third-person subordinate subject marking.

The 3sg. deictic element has important discourse uses. It appears frequently in narratives to mark continuity of reference and sequential action across clauses. Typically a main clause is followed by a series of subordinate propositional clauses, introduced by a deictic predicate, as in 50 (in which the reciprocal suffix, like the reflexive, derives an intransitive):

- (50) *'omət = ø    'i'    nɪt = ø                      s-əw-q<sup>w</sup>əl-nək<sup>w</sup>əl-s.*  
 sat = 3ABS and BE.IT = 3ABS SBD-LINK-speak-RECIP-3SBD  
 'They sat (down) and (then) they talked together.'

The deictic roots have the semantic features of person and number found in pronouns, together with a feature that we gloss with the copula: 'be you', 'be me', etc. This feature is simply that of functioning as a predicate. In sum: the person deictic roots are third person in syntax and undergo various inflectional and derivational processes, appearing as the root of the predicate in both main and subordinate clauses but never appearing in A-positions.

**2.7. LEXICAL SUFFIXES.** Salish predicates may also include derivational suffixes, traditionally called 'lexical' suffixes, that add various kinds of lexical content to the predicate. Many lexical suffixes identify body parts; there are also a few suffixes specifying culturally important things like fire, water, wood, fish, and cloth; temporal notions like day, season; and a small number of other

more abstract elements. Derivational affixes manifesting a similar set of semantic categories appear in many Native American languages; the meaning of these suffixes tends to be extended or generalized in particular predicates, as is typically the case with derivational affixes, not incorporated objects. Examples of Straits Salish lexical suffix constructions are given in 51, with the suffix *-sis* 'hand':

- (51) a. *tic'-sis-t-Ø = lə = sən.*  
 cut-hand-TRAN-3ABS = PAST = 1sg.NOM  
 'I cut his hand (on purpose).'  
 b. *təŋ-sis-n-oŋət = sən.*  
 cut.off-hand-NCT-REFL = 1sg.NOM  
 'I cut my hand off (accidentally) [I hand-cut-off myself].'

Note that in 51b the reflexive suffix is the object, and *-sis* is not an incorporated object, but rather a part of the predicate.

These lexical suffixes do not occur as initial roots. A root with a related meaning may be quite different in phonological shape; for instance, the root for 'hand' is *saləs*. The suffix may restrict the meaning of the root in ways other than identifying the object of an action. Montler (1986:77) shows the suffix *-alas/əs*, 'eye, round, color' in many compounds, such as those in 52:

- (52) a. *ləx-aləs* 'loose weave'  
 b. *'i'-aləs* 'bright eyes; bright color'  
 c. *nəč'-aləs* 'multicolored'  
 d. *č'əp'-aləs-ŋ* 'his eyes are closed'

We conclude that these suffixes are components of a process of predicate derivation, rather than object noun incorporation. Object noun incorporation, as identified in Baker 1988, is the movement of a zero-level N from an argument position to adjoin a zero-level V. This process would only be possible in languages that have a noun/verb distinction, where nouns occupy the argument positions for which the verb is subcategorized. Since verb-to-verb incorporation is also recognized, the question arises as to why Salish does not permit root-to-root incorporation, a category-neutral incorporation. Something of this kind does appear in the process of serial predicate formation, as discussed earlier (§2.3); however, serial predicates do not form a phonological unit, but remain separate words, interrupted by the clitic string.

**2.8. SUMMARY: MAIN CLAUSES.** We have argued that all argument positions in the Straits Salish sentence are satisfied by pronominal affixes and clitics. We noted that the contrast between internal and external arguments is morphologically marked; the former are affixes, and may take the main word stress, while the latter are unstressed clitics. We identified the ergative split across person, which is restricted to main clauses. Arguments were classified as follows:

- (53) a. EXTERNAL ARGUMENTS:  
 Nominatives (first and second persons)  
 Absolutes (third person)



Any root may serve as the lexical head of a predicate under the scope of a determiner. Compare 56 with 54 above:

- (56) *leŋ-t-∅ = sən*                      *k<sup>u</sup>sə ye'-lə.*  
 see-TRAN-3ABS = 1sg.NOM that SBD-go-PAST  
 'I saw her, that (one who) left.'

**3.2. ADJOINED RELATIVE CLAUSES.** Relative clauses are subordinate structures linked by predication to some argument of a main clause. Straits Salish employs the most common relativization strategy found across languages: the relative clause has a 'gap', a variable bound by the relativizing pronoun, that is coindexed with a main-clause argument. Straits Salish relative clauses are adjoined rather than embedded. Hale 1976 identifies adjoined relative clauses in Australia and elsewhere as a typological feature; Jelinek 1987 argues that, if a language allows only affixes and clitics in argument positions, relatives are necessarily adjoined rather than embedded.

The demonstrative pronoun which derives a Straits Salish relative corresponds to an iota operator in binding a variable argument of the relativized predicate:

- (57) *cə ɣci-t-ən*                      DET<sub>x</sub> (know (I,x))  
 DET know-TRAN-1sg.SBD  
 'the one I know'

This variable is the 'head' of the relative. In Straits Salish this head is exclusively third person, and the adjoined relative is predicated of a third-person pronoun in the main clause. There are three subtypes of adjoined relatives, depending on which argument is the head.

**3.2.1. THEME-HEADED (INTRANSITIVE) RELATIVES.** Exx. 58 and 59 show relative clauses in which the determiner binds the theme argument of the relativized [-TRAN] predicate:

- (58) *čey = ∅*              *cə swəy'qə'.*  
 work = 3ABS DET man  
 'He works, the (one who is a) man.'  
 (59) *swəy'qə' = ∅*      *cə čey.*  
 man = 3ABS DET work  
 'He (is a) man, the (one who) works.'

Main-clause subject clitics do not appear in relatives; the head argument of the relativized predicate is bound by the determiner. Tense may be marked, but the interrogative mood clitic and certain modals are excluded.

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lack determiners and have demonstratives and nominals that may occur alone or with each other; Warlpiri is an example (Bittner & Hale 1994). However, Straits Salish differs sharply from languages of this kind, since it has no nominals that are not under the scope of one of the demonstratives. Demonstratives are not optional constituents of nominals in Straits Salish; rather, they are the operators that derive DETPs, which are nominalized constructions. This is the function of determiners as identified in previous work on DETPs (cf. Abney 1987). Across languages, morphological overlap among pronouns, demonstratives, determiners, and complementizers is common.



- (60) a. *cə swəy'qə' = lə*  
 DET man = PAST  
 'the late (deceased) man'  
 b. *cə čey = sə*  
 DET work = FUT  
 'the one who will work'

Plurality of states, events, or entities can be marked optionally in the predicate via reduplication and other internal processes. This occurs in all clause types, including DETPs:

- (61) a. *stəniy' = Ø.* 'She is a woman.'  
*stən-təniy' = Ø.* 'They are women.'  
 b. *sə stəniy'* 'the (one who is a) woman'  
*sə stən-təniy'* 'the (ones who are) women'  
 (62) a. *ŋəq-ŋ = Ø.* 'She is diving.'  
*ŋəq-ŋəq-ŋ = Ø.* 'She is diving repeatedly.'  
 b. *sə ŋəq-ŋ* 'the (one who) dives'  
*sə ŋəq-ŋəq-ŋ* 'the (one/s who) dive/s repeatedly'

In languages with a noun/verb contrast, plurality is typically marked differently in each lexical category. In Straits Salish, when there is no reduplication, the number value of the argument or event is typically open; when there is reduplication, plurality is present.

Proper names in Straits Salish are predicates that require determiners and may be inflected:

- (63) a. *tečəl = Ø* *cə Tim.*  
 arrive = 3ABS DET Tim  
 'Tim arrived.'  
 b. *x<sup>w</sup>i'elqən = Ø* *cə Kennedy.*  
 return = 3ABS DET Kennedy  
 'Kennedy came back.'  
 c. *nił = Ø* *nə-s-ne* *k<sup>w</sup>ə s-Dick-s.*  
 BE.IT = 3ABS 1sg.POSS-STAT-name DET SBD-Dick-3SBD  
 'That's my name, Dick.' ('My name is Dick.')

Relativized predicates may also contain possessive pronouns.<sup>10</sup>

<sup>10</sup> With the 'psych' predicates the theme is the intransitive subject, and we see subject-headed relatives:

- (i) *cə sX'i-s* *sə stəniy'*  
 DET dear-3POSS DET woman  
 'the one who is his desire, the woman'

If no possessor is marked on the root, an oblique DETP specifying the possessor can be added:

- (ii) *cə sX'i' 'ə* *sə stəniy'*.  
 DET dear OBL DET woman  
 'the one who is the desire of the woman'

There are no possessor-headed relatives, since POSS is either an internal experiencer or an oblique argument in these [-TRAN] constructions.

- (64) a. *cə nə-sχ'i*  
 DET 1sg.POSS-dear  
 'the one I like/want'
- b. *cə nə-men*  
 DET 1sg.POSS-father  
 'the my father'

There are also relatives derived from sentences showing passive, middle, and other voice alternations. These are all theme-headed relatives, since they are derived from intransitive sentences:

- (65) a. *cə leŋ-t-ŋ*  
 DET see-TRAN-PASS  
 'the one who was seen'
- b. *cə hes-ŋ*  
 DET sneeze-MID  
 'the one who sneezed'

In short, the sentence from which the DETP is derived may be based on a predicate with any kind of argument structure.

**3.2.2. PATIENT-HEADED RELATIVES.** There are two varieties of transitive relatives, depending on whether the agent or the patient argument is bound by the determiner. Again, the bound argument is a variable; the other argument is overt. In patient-headed relatives, the agent is a suffix. Compare the main clause in 66a with the relative in 66b:

- (66) a. *leŋ-t-∅ = sχ''*.  
 see-TRAN-3ABS = 2sg.NOM  
 'You saw him.'
- b. *ye' = ∅ cə leŋ-t-əχ''*.  
 go = 3ABS DET see-TRAN-2SBD  
 'He left, the (one) you saw.'

The paradigm of agent pronouns appearing in patient-headed relatives is given in 67.

- (67) 1 sg.: -ən    1 pl.: -t  
 2 sg.: -əχ''    3: -əs

While the patient head is a third-person variable, the agent argument may have any person value.

**3.2.3. AGENT-HEADED RELATIVES.** In agent-headed relatives the agent is a third-person variable and the patient may be any person.

- (68) *cə leŋ-t = ∅*  
 DET see-TRAN = 3ABS  
 'the one that saw him.'

The following is an example with an overt local object. Note that there is no ergative split and person hierarchy in relatives:

- (69) *ye' = ∅ cə leŋ-t-oŋəs*.  
 go = 3ABS DET see-TRAN-1/2ACC  
 He left, the (one that) saw you/me.

The patient pronouns that appear in agent-headed relatives are identical to those seen in main clauses:

|      |       |            |          |
|------|-------|------------|----------|
| (70) | LOCAL |            | NONLOCAL |
|      | -oŋəs | 1 or 2 sg. | -∅ 3ABS  |
|      | -oŋət | 1 pl.      |          |

In sum, the head argument—the variable bound by the determiner that derives a relative clause—is necessarily third person, since the determiner pronoun is third person. In contrast, the second argument of a transitive relative can have any person value. Straits Salish adjoined relative clauses resemble free relatives elsewhere in that (a) they refer to individuals; (b) the relative pronoun binds a variable argument of the relativized predicate; and (c) there is coindexing between the relative and an argument of the main clause. They differ from NPs elsewhere in that (a) they are not projections from some subset of the lexical items in the language, and (b) they are adjoined subordinate clauses.

**3.2.4. COINDEXING.** When the main clause is intransitive, an adjoined relative is necessarily predicated of and coreferent with the subject argument of the main clause. When a relative clause is adjoined to a main clause that has more than one third-person argument, there is a constraint on coindexing. The first reading shown for 71 is grammatical, while the second is not.

- (71) *leŋ-t-s = ∅*                      *cə ɥənə.*  
 see-TRAN-3ERG = 3ABS DET child  
 a. ‘He saw the child.’ [He<sub>i</sub> saw him<sub>j</sub>, the child<sub>j</sub>.]  
 b. \*‘The child saw him.’ [\*He<sub>i</sub> saw him<sub>j</sub>, the child<sub>i</sub>.]

With transitive sentences, the adjoined relative is coindexed with the patient. We can generalize as follows for all clause types:

- (72) An adjunct is coreferent with the absolutive argument.

This principle, called the ONE NOMINAL INTERPRETATION generalization (Gerdtz 1988), seems to apply universally within the Salish family.

In a main clause followed by two relatives, coindexing proceeds as follows: the head of the second relative is coindexed with the head of the preceding one, which in turn is coindexed with the absolutive argument of the preceding main clause. Therefore, no potential coindexing problems arise.

- (73) *t’əm’-t-s = ∅*                      *cə swəy’qə k’ə t’əm’-t-oŋəs.*  
 hit-TRAN-3ERG = 3ABS DET man      DET hit-TRAN-1/2ACC  
 ‘He hit him, the man who hit you/me.’

Less commonly heard are transitive sentences with two adjoined relatives that are disjoint in reference. In these marginal sentences the order of the adjuncts is free:

- (74) *t’əm’-t-s = ∅*                      *cə ɥənə cə swəy’qə’.*  
 hit-TRAN-3ERG = 3ABS DET child DET man  
 ‘He<sub>i</sub> hit him<sub>j</sub>, the child<sub>i,j</sub>, the man<sub>i,j</sub>.’

Some Salish languages (e.g. Lushootseed) exclude transitive sentences with

two DETPs, and it has been suggested that sentences of this type in the Straits languages represent influence from English (Kinkade 1983).

**3.2.5. OBLIQUE ADJUNCTS.** Relative clauses may appear as oblique adjuncts, introduced by the oblique marker 'ə preceding the determiner. Oblique adjuncts include locative expressions and the optional agent-headed relatives that appear in passives, as we saw in §2; an example is 23, repeated here:

- (23') *t'əm'-t-ŋ = s.x''*                      ('ə cə *t'əm'-t-ŋ*)  
 hit-TRAN-PASS = 2sg.NOM (OBL DET hit-TRAN-3ABS)  
 'You were hit (by the one who hit him).'

Aside from these oblique adjuncts, relative clauses are adjuncts that are coindexed with a pronoun in a preceding clause.

**3.3. PROPOSITIONAL SUBORDINATE CLAUSES.** Propositionals mention a proposition without asserting it. No argument of a propositional subordinate clause is a variable bound by the determiner—these clauses lack the heads seen in relatives, since they refer to propositions, not to some argument of the subordinate predicate. The determiner/demonstrative functions as a complementizer, and the arguments may have any person value. The determiner *k''ə* is used for abstract entities and for relatives referring to remote or invisible things; it is the only complementizer for propositional and hypothetical clauses.

- (75) a. *si'it = Ø*      *k''ə nə-s-leŋ-n-oŋəs*.  
 true = 3ABS DET 1sg.POSS-SBD-see-TRAN-1/2ACC  
 'It's true that I saw you.'  
 b. 'əw *xçit-t-ŋ = sən*                      *k''ə 'ən-s-leŋ-n-oŋəs*.  
 LINK know-TRAN-3ABS = 1sg.NOM DET 2sg.POSS-SBD-see-NCT-  
 1/2ACC  
 'I know that you saw me.'

All the pronominal arguments of a propositional subordinate clause are morphologically internal. The subject is marked in a possessive pronoun, as is commonly seen in nonfinite clauses across languages. In Flathead, an Interior Salish language spoken in Montana which has a more complex transitivity system, there are main-clause constructions with possessive subjects in the transitive continuative aspect (Thomason & Everett 1993).<sup>11</sup>

A propositional clause may function as an adjoined adverbial clause, introduced by a conjunction:

- (76) *x''əŋ' = Ø*      'ət      *š-šət-ŋ-s*.  
 fast = 3ABS CONJ SBD-walk-MID-3SBD  
 'He's fast [when] he walks.' ('He walks fast.')

The determiner *k''ə*, which introduces propositional subordinate clauses, is omitted where the clause is introduced by a conjunction.

In discourse, an initial main clause is typically followed by a string of adjoined

<sup>11</sup> We thank Sarah Thomason for the observation (personal communication, 1994) that the fact that these 'nominalized' forms function in Flathead as predicates of finite clauses in this (stative) aspectual paradigm is again indicative of the problematic status of a N/V contrast in Salish.

propositional subordinate clauses, as in 77:

- (77) *ye' = lə' = t*                      *k''ə s-hay-t*                      *k''ə s-itən-t.*  
 go = PAST = 1pl.NOM DET SBD-finish-1pl.POSS DET SBD-eat-1pl.POSS  
 'We left when we finished eating.'

**3.4. HYPOTHETICALS.** In this subordinate clause type, a proposition is mentioned and its truth value is brought into question. The set of subject (agent or theme) pronouns for hypothetical clauses is identical to the set of agent pronouns in patient-headed relatives (see 67 above). Hypothetical clauses differ from patient-headed relatives in that the third person *-əs* marks intransitive themes as well as agents. Exx. 78b, 79b, and 80b show *-əs* marking subordinate intransitive subject with a range of root types, corresponding to V, Adj, and N in English.

- (78) a. *ye' = Ø*  
 go = 3ABS  
 'He went.'  
 b. *čte-t-ŋ = sən*                      *k''ə ye'-əs.*  
 ask-TRAN-PASS = 1sg.NOM DET go-3SBD  
 'I was asked if he went.'
- (79) a. *'əy' = Ø*  
 good = 3ABS  
 'It's good.'  
 b. *čte-t-ŋ = sən*                      *k''ə 'əy'-əs.*  
 ask-TRAN-PASS = 1sg.NOM DET good-3SBD  
 'I was asked if it was good.'
- (80) a. *sx''ənem = Ø.*  
 doctor = 3ABS  
 'He's a doctor.'  
 b. *čte-t-ŋ = sən*                      *k''ə sx''ənem-əs.*  
 ask-TRAN-PASS-1sg.NOM DET doctor-3SBD  
 'I was asked if he was a doctor.'

Patients are again identical to main clause patients:

- (81) a. *čte-t-ŋ = sən*                      *k''ə t'əm'-t-oŋəs-ən.*  
 ask-TRAN-PASS-1sg.NOM DET hit-TRAN-1/2ACC-1sg.SBD  
 'I was asked if I hit you.'  
 b. *čte-t-ŋ = sən*                      *k''ə t'əm-t-Ø-əs.*  
 ask-TRAN-PASS-1sg.NOM DET hit-TRAN-3ABS-3SBD  
 'I was asked if he hit him.'  
 c. *čte-t-ŋ = sən*                      *k''ə nə-s-χ'i'-əs.*  
 ask-TRAN-PASS-1sg.NOM DET 1sg.POSS-STAT-dear-3SBD  
 'I was asked if it's what I like.'

The overt third-person marking in hypothetical subordinate clauses is important evidence that predicates have a fully realized argument structure in subordinate clauses as well as in main clauses.

Oblique hypothetical clauses may be introduced by a conjunction:

- (82) 'əw' = s.x''      q''əq''əl 'ət itən-əx''.  
 NEG = 2sg.NOM speak    CONJ eat-2sg.SBD  
 'You don't talk while you eat.'

**3.5. EVIDENCE ON THE ADJUNCT STATUS OF DETERMINER PHRASES.** Determiner phrases cannot appear in the utterance-initial predicate position; they must follow a main clause. They are exclusively third person in syntax, and they do not occur in the positions in the sentence where first- and second-person pronominals appear. There are no DETPs or free-standing pronouns that can be coindexed with first- or second-person arguments. We saw above in 74 that in the uncommon or marginal transitive sentences with two DETPs, the order of the adjuncts is free. If DETPs are assumed to be in argument positions, binding violations appear, as in 83.

- (83) q'əq'enət = Ø 'ət š-šət-ŋ-s      cə 'əs'eləx''.  
 slow = 3ABS    CONJ SBD-walk-MID-3POSS DET elder  
 'He<sub>i</sub> is slow when he<sub>i</sub> walks, the old man<sub>i</sub>.'

Note that, despite the position of the determiner phrase after the temporal clause predicate, this sentence cannot be glossed as '\*he<sub>i</sub> is slow when the old man<sub>j</sub> walks'. Baker 1991 provides extensive argumentation for the adjunct status of NPs in Mohawk, another language with pronominal inflection for both subjects and objects, based on binding violations of this kind.

Finally, let us consider a 'pro-drop' analysis of Straits Salish on which the DETPs are arguments, and the pronominal affixes and clitics are all agreement that licenses the 'dropping' of lexical arguments. We could not dispense with a third-person zero marker, since we would need such an element functioning as third-person agreement to license the pro-drop of exclusively definite third-person arguments. The major difficulty for an analysis of this kind is the constraint that restricts the distribution of DETPs to third-person absolutive. Since there are no free-standing pronouns, and since the person deictic predicates are third person in syntax, there are no overt elements in the lexical inventory to be triggered by non-third person 'agreement'. It seems uneconomical to invoke whole paradigms of null pronouns just in order to 'drop' them. Furthermore, we would still have to confront the binding violations noted in the discussion of 83.

**3.6. SUMMARY ON ARGUMENT STRUCTURE.** Subordinate clauses in Straits Salish are adjoined DETPs. Relatives are predicated of a main-clause argument; propositional and hypothetical clauses refer to a proposition without asserting it. Straits Salish relative clauses refer to individuals, and in this respect they correspond to noun phrases in languages with a noun/verb contrast; they differ from NPs in that they may be based on any open-class predicate and thus are not maximal projections of a lexical noun.

The analysis given in §§2–3 incorporates the following claims:

(i) There is a single open morphological class, the root. Roots combine with affixes to produce predicates; these predicates combine with clitics to produce clauses. In [+TRAN] sentences, the functional head TRAN, part of the voice system, assigns case to the internal argument. The functional head TENSE assigns case to the subject.

(ii) All predicate arguments are pronominal affixes and clitics. A root cannot appear uninflected for its arguments; only roots have an argument structure. Neither roots nor predicates may appear in argument positions.

(iii) Determiner phrases are adjoined nominalized structures derived from sentences. They may be direct or oblique adjuncts. There are no embedded clauses.

We have seen that all roots, including the nominal roots that can occur with possessive affixes, have a fully realized argument structure in subordinate clauses, just as in main clauses. Pronominal argument structure varies with each subordinate clause type: the three kinds of relatives have distinct argument arrays, depending on whether the theme, agent, or patient is head; propositionals and hypotheticals have full pronominal paradigms, and no variable arguments. Since all open-class words are predicational, there is no need for a copula to derive finite predicates.

In the following section we provide what we consider to be the strongest evidence supporting our analysis and the claims it incorporates: evidence based on the syntax of quantifiers and WH-words in Straits Salish.

**4. THE SYNTAX OF QUANTIFIERS AND WH-WORDS.** In Straits Salish there are neither quantifiers nor WH-words that can occupy argument positions; instead, there are quantifier and interrogative roots that appear in predicates. There is also adverbial quantification as described in Jelinek 1994.<sup>12</sup> These typological features constitute important evidence on the nature of argument structure in these languages.

So far in this paper, our discussion of predicates has been confined to open-class roots and the predicates derived from them. These predicates take individuals as arguments and combine with subjects to produce sentences. In this section we will examine the small closed class of adverbials, primarily quantificational adverbials, that have a distinct syntax; adverbials have scope over open-class predicates.

**4.1. DETERMINER VS. ADVERBIAL QUANTIFICATION.** Bach et al. (1987) identify a major typological difference across languages with respect to the distribution of elements marking quantificational notions: this is the contrast between determiner (D-)quantification and adverbial (A-)quantification. The former includes determiner quantifiers such as *every*, *each*, *most*, *some*, *seven*, and *no*; the latter class is broader, and includes the expression of quantificational notions by means of adverbs, affixes, auxiliaries, etc. D-quantification is obviously associated with NPs and A-quantification with VPs. If Straits Salish lacks lexical nouns, then we must predict the absence of determiner quantification; and this is exactly what we find.

Straits Salish has unselective adverbial quantification (as identified in Lewis 1975) and some sentence particles and clitics that express modal notions. In addition, there are lexical roots expressing cardinality and existential notions.

<sup>12</sup> For a more complete treatment of quantification in Straits Salish, see Jelinek 1994, and for an investigation of determiner vs. adverbial quantification from a crosslinguistic perspective, see Bach et al. 1994.

Work in progress on quantification in natural language suggests that, while all languages have A-quantification, only some languages have D-quantification (Bach et al. 1994). English has both types:

- (84) a. *He ALWAYS reads his mail.* A-quantification  
 b. *He reads EVERY letter.* D-quantification

English has lexical nouns and is rich in D-quantification as well as other quantifiers syntactically related to nouns:

- (85) a. Determiners: *EVERY fish; EACH fish*  
 b. Noun modifiers: *the MOST fish*  
 c. NP modifiers: *ALL, BOTH the fish*  
 d. Ns or NPs: *ANYONE; WHATEVER*

**4.1.1. THE ABSENCE OF D-QUANTIFICATION IN SALISH.** We saw in §3 that Straits Salish determiners are exclusively demonstratives. Straits Salish demonstratives mark contrasts in relative distance, gender, visibility, and the like; however, they do not mark the following quantificational features:

- (86) a. Definite vs. indefinite  
 b. Singular vs. plural  
 c. Count vs. mass  
 d. Cardinality expressions (numbers, *many, few, ...*)  
 e. Strong quantifiers (*each, every, most, all ...*)

The Straits Salish determiners/demonstratives are pronouns that head determiner phrases and bind a variable within the subordinate clause.

**4.1.2. ADVERBIAL QUANTIFICATION.** Adverbials are connected to a following predicate by the LINK particle or conjunction 'əw' to form a complex predicate. As we saw in §2, only the first word of a complex predicate in Straits Salish raises to a sentence-initial position; the second-position clitic string then attaches to it. Ex. 87 shows the adverbial *mək*<sup>'''</sup> 'all, completely', which has raised to precede the clitic string, while the remainder of the complex predicate follows it:

- (87) *mək*<sup>'''</sup> = *lə = t* 'əw' *ye*'.  
 all = PAST = 1pl.NOM LINK go  
 'We all went.'

The following example shows variable scope of the unselective adverbial quantifier.

- (88) *mək*<sup>'''</sup> =  $\emptyset$  'əw' *p'əq cə sp'eqəŋ*.  
 all = 3ABS LINK white DET sprout  
 'They are all/completely white, the flowers.'

Here the quantifier may have scope over either the scalar predicate ('how much'—the extent or degree of saturation of the color) or over the subject ('how many'). The adverbial cannot be transitive; the main predicate may be [+TRAN], containing an internal argument, as in 89.

- (89) *mək*<sup>'''</sup> = *lə = t* 'əw' *ŋa-t- $\emptyset$*  *cə sčeenəx*<sup>''</sup>.  
 all = PAST = 1pl.NOM LINK eat-TRAN-3ABS DET fish  
 'We ate all the fish.' Or: 'We all ate the fish.' Or: 'We ate the fish up completely.'



In this example the adverbial has scope over the main predicate, and this scope can extend over any argument of the predicate that is not overtly marked singular. The LINK particle 'əw' that connects adverbials to a following predicate also appears linking main and subordinate clauses, and as a sentence-initial particle showing an inferential connection between clauses in discourse.

EX. 90 shows the variable scope of an unselective adverbial quantifier in an intransitive sentence.

- (90) *χ'e'l' = sən*                      'əw' *ye'*.  
 again/also = 1sg.NOM LINK go.  
 'I'll go again.' (another event)  
 'I also will go.' (another person)

Other adverbial quantifiers that have been recorded in Straits Salish are *yas* 'always', 'ən'an 'very/excessively', *čələl* 'almost', and *x'əw'e* 'never; not yet'.

- (91) a. *yas = sən*                      'əw' *ye'*.  
 always = 1sg.NOM LINK go  
 'I always go.'  
 b. 'ən'an = ∅                      'əw' 'əy' *cə s'itən*.  
 very = 3ABS LINK good DET food  
 'The food is very good.'

**4.2. TYPE-SHIFTING IN PREDICATES.** There are a few open-class roots that may be used also as adverbials, with the LINK particle present.<sup>13</sup> The roots *si'it* 'true', *ηən* 'big', and 'əwə 'NEGATIVE' can undergo type raising from an open-class root to an adverbial, as shown in 92.

- (92) a. *si'it = ∅*.  
 true = 3ABS  
 'It's true.'  
 b. *si'it = sən*                      'əw' *tčik''əs*.  
 true = 1sg.NOM LINK tired  
 'I'm really tired.'  
 c. *ηən = ∅*.  
 big/many = 3ABS  
 'It's big/many.'  
 d. *ηən' = sx''*                      'əw' *tčik''əs*.  
 big = 2sg.NOM LINK tired  
 'You're really tired.'  
 e. 'əwə = *sən s-əw'-ye'*.  
 NEG-1sg.NOM SBD-LINK-go  
 'I'M not going/It's not me that is going'  
 f. 'əwə = ∅                      *s-nə-s-χ'i'*                      *k''ə ye'-ən*.  
 NEG = 3ABS SBD-1sg.POSS-STAT-dear DET go-1sg.SBD  
 'I don't want to go/It's not my desire ...'

When the universal quantifier is transitivized, we see type lowering from an

<sup>13</sup> See Partee 1987 for a discussion of type-shifting in the interpretation of NPs in universal grammar.

adverbial to a main-clause predicate. This derived predicate is glossed 'take completely':

- (93)  $mək'ʷ-t-∅ = yəq = sɬʷ$ .  
 all-TRAN-3ABS = MODAL = 2sg.NOM  
 'Wish you would take them all/finish them off.'

**4.3. STRONG VS. WEAK QUANTIFIERS.** A second kind of division within the class of quantifiers across languages is the contrast between what have been termed the 'strong' and 'weak' quantifiers (Milsark 1977). The strong quantifiers include items like *each*, *every*, *most*, and *all*, while the weak quantifiers include the cardinality expressions: the numerals and words like *many* and *few*. This major division within the domain of quantifiers has a number of crosslinguistic syntactic reflexes. For example, strong quantifiers cannot occur in existential contexts, while weak quantifiers can:

- (94) a. \**There are all (each, most) men in the boat.*  
 b. *There are many (few, seven) men in the boat.*

In English there are both strong and weak determiner quantifiers, but the strong quantifiers are excluded from existential contexts. In Straits Salish the semantic contrast between strong and weak quantifiers corresponds to the following in two ways: syntactic contrast: (a) weak quantifiers are open-class roots, and (b) strong quantifiers are adverbials.

Strong quantifiers (aside from the type-shifting we saw in 92) cannot appear as open-class, main-clause predicates, as illustrated in 95. In contrast, 96 shows that weak quantifiers are open-class roots.

- (95) \* $mək'ʷ = ∅ cə sčeenəxʷ$ .  
 all = 3ABS DET fish  
 ['they are all, the fish.']  
 (96)  $ŋən' = ∅ cə sčeenəxʷ$ .  
 big/many = 3ABS DET fish  
 'They are many, the fish.'

Numerals are roots that can occur in main-clause predicates or with determiners:

- (97) a.  $česə' = ∅$ .  
 two = 3ABS  
 'They are two.'  
 b.  $t'iləm = ∅ cə česə'$ .  
 sing = 3ABS DET two  
 'They sang, the two.'

**4.4. EXISTENTIAL CONSTRUCTIONS.** The locative root *ni'* is used in existential constructions:

- (98) a.  $ni' = ∅ cə sčeenəxʷ$ .  
 exist = 3ABS DET fish  
 'There's fish.'  
 b.  $ni' = ə = lə = ∅?$   
 exist = Q = PAST = 3ABS  
 'Were there any?'

- c. 'əwəni=yəx"<sup>w</sup>=∅                      cə s'čeenəx"<sup>w</sup>.  
 not:exist=MODAL=3ABS DET fish  
 'Apparently there's no fish.'

These predicates create contexts which exclude strong quantifiers—the 'definiteness effect'—and produce indefinite readings of the adjoined DETP:

- (99) a. ni'<sup>w</sup>=∅                      cə ηən'                      s'ətənəη'.  
 exist=3ABS DET big/many berry.  
 'There are many berries.'  
 b. \*ni'<sup>w</sup>=∅                      cə mək"<sup>w</sup> s'ətənəη'  
 exist=3ABS DET all berry

Aside from type-shifting, as seen in 92 above, where the cardinality predicate ηən 'big/many' functions as an adverbial, the cardinality expressions and the existential quantifiers are predicates.

**4.5. EVIDENCE FROM HYPOTHETICAL AND PROPOSITIONAL CLAUSES.** In these subordinate clauses the cardinality and existential predicates show overt subject marking, as all predicates do:

- (100) a. čte-t-η=sən                      k"<sup>w</sup>ə ηən'-əs.  
 ask-TRAN-PASS=1sg.NOM DET many-3SBD  
 'I was asked if there were many.'  
 b. čte-t-η=sən                      k"<sup>w</sup>ə ni'-əs.  
 ask-TRAN-PASS=1sg.NOM DET exist-3SBD  
 'I was asked if there were any.'  
 c. čte-t-η=sən                      k"<sup>w</sup>ə 'əwəni-əs.  
 ask-TRAN-PASS=1sg.NOM DET not.exist-3SBD  
 'I was asked if there weren't any.'

**4.6. WH-WORDS.** The syntax of WH-words in Straits Salish is like that of any open-class predicate. WH-words, like cardinality expressions, appear as predicates:

- (101) a. steη=∅?  
 what=3ABS  
 'What is it?'  
 b. steη=∅                      k"<sup>w</sup>ə 'ən-s'itən?  
 what=3ABS DET 2sg.POSS-eat  
 'What are you eating?'

WH-words are followed by the clitic string, as with any other predicate:

- (102) a. wet=lə=∅?  
 who=PAST=3ABS  
 'Who was it?'  
 b. wet=∅                      cə swi'qo'ət?  
 who=3ABS DET young man  
 'Who is he, the young man?'

We saw in §4.5 that cardinality and existential predicates have overt third-person subjects in hypothetical clauses. This is true for WH-words as well:

- (103) a. *čte-t-ŋ=sən*                      *kʷə steŋ-əs*.  
 ask-TRAN-PASS = 1sg.NOM DET what-3SBD  
 'I was asked what it was.'
- b. *čte-t-ŋ=sən*                      *kʷə wet-əs*.  
 ask-TRAN-PASS = 1sg.NOM DET who-3SBD  
 'I was asked who it was.'

We frequently see morphological resemblances across languages between indefinites like 'someone' and 'something' and WH-words like 'who' and 'what'. Straits Salish WH-words may also express indefiniteness: '(be) someone', '(be) something', 'do something', etc. They may appear in DETPs:

- (104) a. *cə wet*                                              b. *cə steŋ*  
 DET person/who                                              DET thing/what  
 'the person'                                                      'the thing'

WH-words do not occupy argument positions in the syntax, and thus there is no WH-movement as such; like all other predicates, WH-words raise to adjoin the clitic string.

**4.7. COMPLEX PREDICATES WITHIN DETERMINER PHRASES.** Multipredicate constructions also occur inside DETPs; however, their internal syntax differs from that of complex predicates in main clauses, since the main-clause clitic subjects and mood—features of main clauses—do not appear within DETPs. In 105 the DETPs are derived from sentences with complex predicates in which the first element is a quality or cardinality predicate.

- (105) a. *čey=∅*              *cə 'əy' swəy'qə'*.                                              (Quality)  
 work = 3ABS DET good man  
 'He worked, the good man.'
- b. *čey=∅*                      *cə česə' swəy'qə'*.                                              (Cardinal)  
 'They worked, the two men.'

Ex. 106 shows a parallel construction with the adverbial *məkʷ*; within the DETP, the adverbial gives a collective reading:

- (106) *ɣci-t-∅=sɣʷ*                                              *cə məkʷ nə-sčeləčə*.  
 know-TRAN-3ABS = 2sg.NOM DET all      1sg.POSS-kin  
 'You know all my relatives.'

Note that, when the negative predicate occurs within a DETP, it does not create a construction corresponding to 'no N', which would be D-quantification:

- (107) *cə 'əwə s-s-wəy'qə'*  
 DET NEG SBD-STAT-male  
 'the not-man; the one who isn't a man' [\*'no man']

**4.8. CONCLUSIONS ON QUANTIFICATION.** Straits Salish lacks determiner quantifiers. Weak quantifiers, WH-terms, and the locatives used in existential contexts are roots. The universal quantifiers are unselective adverbials. The default interpretation of determiner phrases is definite; they may receive indefinite

readings in the appropriate contexts, as when they appear in existential sentences.

Determiner quantifiers fix the scope of the quantifier to a particular argument position. The lexical item under the scope of the determiner quantifier functions as the restrictive clause of the tripartite quantified context. In a pronominal argument language such as Straits Salish, only pronouns occupy argument positions; when an adjoined DETP receives an indefinite interpretation, a main-clause pronoun is treated as a variable. Since DETPs are not arguments, they cannot include D-quantifiers, which function to fix the scope of the quantifier to an argument position.

The absence of determiner quantification in Straits Salish, along with the absence of NP, quantifier, or WH-movement, is important support for the claim that argument positions in these languages are occupied only by pronominal affixes and clitics.

5. DEFINITE AND INDEFINITE READINGS. The demonstratives that build determiner phrases are definite pronouns when they appear alone. We have seen that the default reading of DETPs derived by these demonstratives is definite, but they may receive indefinite interpretations in certain contexts. In this section we examine the constraints on the distribution of indefinite readings.

Pronominal arguments are presuppositional, familiar variables, in the sense of Heim 1982 and Kamp 1981. Straits Salish main clauses (appearing alone) are interpreted as having definite pronominal arguments. We have seen that adjoined determiner phrases are coindexed only with absolutive pronouns. Indefinites are thus restricted to (third person) arguments that are intransitive subjects or transitive patients. When an adjoined determiner phrase is given a definite reading, it is a topic coindexed with a definite pronoun; on an indefinite reading, it is comparable to an adjoined relative clause. A DETP can function as the restrictive clause in a generic construction. Ex. 83, repeated here with added glosses, is in fact ambiguous between generic and specific readings:

- (83') *q'əq'enəł = ∅ 'əł š-šət-ŋ-s cə 'əs'eləx''.*  
 slow = 3<sub>ABS</sub> CONJ SBD-walk-MID-3<sub>POSS</sub> DET elder  
 'He<sub>i</sub> is slow when he<sub>i</sub> walks, the/an old man<sub>i</sub>.'  
 a. The old man is slow when he walks. (Specific)  
 b. An old man is slow when he walks. (Generic)

Across languages, it is not uncommon to see definite arguments in generic contexts, and the definiteness of the subject in 83b is indeterminate.

Ex. 98a above, repeated here with an added gloss, is ambiguous between an existential (indefinite) reading, and a locative (definite) reading.

- (98') a. *ni' = ∅ cə s'ceenəx''.*  
 exist = 3<sub>ABS</sub> DET fish  
 'There's fish.' Or: 'There's the fish.'

Other than in existential or deictic contexts, subjects in Straits Salish appear to be exclusively presuppositional, definite, or specific.

Predicate-internal contexts in which indefinite readings are obligatory include

those provided by the relational prefix and the desiderative suffix, as identified in §2.

- (108) *č-telə = lə = sən.*  
 RL-money = PAST = 1sg.NOM  
 'I had money.'
- (109) *snəx"ət = 'elɣən = sən.*  
 canoe-DESIDERATIVE-1sg.NOM  
 'I want a canoe/to make a canoe.'

In Straits Salish the simple predicate may correspond to an indefinite 'predicate noun':

- (110) *si'em' = Ø cə nə-men.*  
 chief = 3ABS DET 1sg.POSS-father  
 'My father is a chief.'

Indefinites are commonly employed to introduce new referents into the discourse. In many languages the numeral 'one' is used to refer to an indefinite, and this usage is found in Straits Salish also, where 'one' is a cardinality predicate, not a determiner. Texts may begin by fixing the location where the events to be narrated occurred, and then new referents may be introduced. The sentence in 111 begins a narrative (Charles et al. 1978):

- (111) *le' = č'ə = Ø 'ə cə sweləx cə swi'qoət ...*  
 there = EVID = 3ABS OBL DET Orcas.Island DET young.man ...  
 'There (was) reportedly on Orcas Island a young man ...'

The predicate *le'* is one of a number of deictic and existential forms that may introduce indefinite subjects.

Finally, indefinite readings are permitted for DETPs that are coindexed with absolute patients:

- (112) *leŋ-t-Ø = sən cə sməyəs.*  
 see-TRAN-3ABS = 1sg.NOM DET deer  
 I saw the/a deer.

In sum, the predicate itself in Straits Salish takes on the function of indefinite 'predicate nouns' in some languages. Otherwise, indefinite interpretations of DETP are confined to (1) subjects of existential and deictic constructions and (2) transitive patients. These are positions where indefinites appear at the level of the semantic interpretation of the sentence (Diesing 1992).

**6. SUMMARY AND CONCLUSIONS.** We have argued in this paper that there is no contrast between noun and verb at the word level in Straits Salish. Below the word level, we can distinguish a class of nominal roots occurring with possessive affixes. Above the word level, we see finite clauses, composed of predicates and the clitic string; there are also derived nominalized clauses, which are determiner phrases; these are nominalized constructions. In propositional subordinate clauses, subjects are marked by possessive affixes. But at the level of the phonological word, the predicate, there are no words that correspond syntactically to noun vs. verb or adjective. Most importantly, there are no root classes uniquely associated with maximal projections NP or VP; all

open-class roots are constituents of predicates, and any predicate in turn may appear in a determiner phrase.

Some of the most significant evidence presented here against a noun/verb contrast is drawn from the absence of a copula. If there were such a contrast, it would involve a distinction between those lexical classes that occur with a copular element and those that do not, in deriving a finite clause. If we assumed a null copula, we would have no account of the fact that there are no construction types in which determiner phrases, locative expressions, or other oblique expressions combine with the INFL clitic string to build a finite clause; only predicates have this distribution. Only predicates, which contain lexical roots, can occur with the functional head [+TRAN] which assigns case to objects; thus, there are no prepositional phrases with pronominal objects, and no clauses that are not based on lexical roots.

In §4 we presented evidence on the verb/noun question derived from an examination of the syntax of quantifiers and WH-words. Straits Salish has no determiner quantifiers. The function of determiner quantification is to fix the scope of a quantifier so that it binds a variable introduced by a predicate in a particular argument position, in IP or VP; and since there are no lexical items or NPs in argument positions in Straits Salish, determiner quantification is excluded.

We also examined the small closed class of unselective adverbial quantifiers in §4; these are 'strong' (universal) quantifiers that may also provide for collective readings. The 'weak' quantifiers and WH-terms are ordinary open-class roots from which predicates are derived. NP and WH-movement do not occur, since only pronominal elements may occupy argument positions. There are complex or serial predicates, including those composed of a quantifier and a WH-word. Any of these predicate complexes may appear within determiner phrases. Indefiniteness—a primary feature of lexical nouns across languages—is expressed in Straits Salish by means of the predicate, which has a nonreferential, predicative function. At a higher level of derivation, the determiner phrases are given definite readings except in certain quantified contexts.

We propose that the parametric feature of Straits Salish that underlies the category-neutral distribution of lexical roots is the presence of an overt functional head TRANSITIVE, which marks the valence of the clause, assigns case to patients and ergative agents, and participates in the assignment of the theta role of the subject. Since transitivity is a functional head in Straits Salish syntax, and a sentence with no overt TRAN has the value [−TRAN], transitivity is not a subcategorizing feature at the lexical level, a feature involved in distinguishing N from V. Our proposal concerning TRAN is consistent with other recent work on functional heads in universal clause structure. Murasugi (1992, 1994) employs data from ergative languages to argue for TRANSITIVE as a functional head in universal grammar; Kratzer (1992, 1994), identifies VOICE as the relevant feature.

In Straits Salish syntax, predicates with the feature [+TRAN] correspond in many respects to a VP; [+TRAN] predicates contain patient or agent arguments. The [−TRAN] predicates, which exclude accusative and ergative arguments,

contain roots that have the lexicosemantic features of intransitive verbs and adjectives, as well as nouns. Demonstratives derive nominalized clauses from any finite clause. These derivations suggest that maximal projections in Straits Salish are to be defined in terms of functional heads, rather than in terms of lexical bases. These maximal projections are [ $\pm$  TRANSITIVE] phrases, or predicates, and determiner phrases, or adjuncts, since it is the functional head at the topmost level of the projection that determines the category of the projection, rather than the lowest-level element, the lexical root. A general discussion of the implications of this view of maximal projections for X-bar theory and other aspects of generative grammar is beyond the scope of this paper. In this connection, we note recent work by Johnson (1991), Pesetsky (1989), Diesing & Jelinek (1995), and others on functional heads immediately above VP, as well as the previously cited work by Murasugi and Kratzer, along with the widely accepted determiner phrase analysis of NPs (Abney 1987).

It appears that the analysis of Straits Salish requires recognizing separate TRANSITIVE and PASSIVE heads in deriving the argument structure of the sentence. We have suggested that TRANSITIVE and PASSIVE are both components of the VOICE system in Salish, a feature of universal clause structure identified by Kratzer; we hope to develop this aspect of the analysis of Straits Salish further in future work.

#### REFERENCES

- ABNEY, STEVEN P. 1987. The noun phrase in its sentential aspect. Cambridge, MA: MIT dissertation.
- BACH, EMMON. 1988. Quantification in North Wakashan. Amherst: University of Massachusetts, MS.
- ; ANGELIKA KRATZER; and BARBARA PARTEE. 1987. Quantification: A cross-linguistic perspective. Amherst: National Science Foundation Proposal, University of Massachusetts.
- ; ELOISE JELINEK; ANGELIKA KRATZER; and BARBARA PARTEE (eds.) 1994. Quantification in natural languages. Dordrecht: Kluwer, to appear.
- BAKER, MARK. 1988. Incorporation: A theory of grammatical function changing. Chicago, IL: University of Chicago Press.
- . 1991. Some Subject/Object non-asymmetries in Mohawk and their theoretical implications. *Natural Language and Linguistic Theory* 9.537–76.
- . 1994. On the absence of certain quantifiers in Mohawk. In Bach et al., to appear.
- , and KEN HALE. 1990. Relativized Minimality and pronoun incorporation. *Linguistic Inquiry* 21.289–97.
- BITTNER, MARIA, and KEN HALE. 1994. Remarks on definiteness in Warlpiri. In Bach et al., to appear.
- BOAS, FRANZ. 1911. Kwakiutl. *Handbook of American Indian languages I*, ed. by Franz Boas, 423–557. Washington, DC: Bureau of American Ethnology, Smithsonian Institution.
- CHARLES, AL; RICHARD DEMERS; and ELIZABETH BOWMAN. 1978. Introduction to the Lummi language. Tucson: University of Arizona Department of Linguistics.
- CHOMSKY, NOAM. 1992. A Minimalist program for linguistic theory. Cambridge, MA: MIT Occasional Papers in Linguistics.
- DAVIS, PHILIP W., and ROSS SAUNDERS. 1981. The *s-* and *si-* prefixes in Bella Coola. *Working Papers of the 16th International Conference on Salish and Neighboring Languages*, 7–30. Missoula, MT: University of Montana.
- DIESING, MOLLY. 1992. Indefinites. Cambridge, MA: MIT Press.



- , and ELOISE JELINEK. 1995. Distributing arguments. *Natural Language Semantics* 3.1, to appear.
- GERDTS, DONNA. 1988. Object and absolutive in Halkomelem Salish. New York: Garland.
- HALE, KEN. 1976. The adjoined relative clause in Australia. *Grammatical categories in Australian languages*, ed. by R. M. W. Dixon, 78–105. Canberra: Australian Institute of Aboriginal Studies.
- HEIM, IRENE R. 1982. The semantics of definite and indefinite noun phrases. Amherst: University of Massachusetts dissertation.
- HESS, THOMAS M., and JAN VAN EIJK. 1985. Noun and verb in Salishan. *Working Papers of the 20th International Conference on Salish and Neighboring Languages*, 97–104. Vancouver: University of British Columbia.
- HOCKETT, CHARLES F. 1966. What Algonquian is really like. *International Journal of American Linguistics* 32.59–73.
- HUKARI, THOMAS E. 1976. Person in a Coast Salish language. *International Journal of American Linguistics* 42.305–18.
- JACOBSEN, WILLIAM H., JR. 1979. Noun and verb in Nootkan. *Proceedings of the Victoria Conference on Northwestern Languages, 1976*, ed. by Barbara S. Efrat, 83–153. Victoria: British Columbia Provincial Museum Heritage Record No. 4.
- JELINEK, ELOISE. 1984. Empty categories, case, and configurationality. *Natural Language and Linguistic Theory* 2.39–76.
- . 1987. Headless relatives and pronominal arguments: A typological perspective. *Native American languages and grammatical typology*, ed. by Paul Kroeber and Robert E. Moore, 136–48. Bloomington: Indiana University Linguistics Club.
- . 1993a. Languages without determiner quantification. Paper presented at the meeting of the Berkeley Linguistic Society, University of California at Berkeley. (To appear in the Proceedings volume.)
- . 1993b. Ergative “splits” and argument type. *MIT Working Papers in Linguistics* 18, *Papers on Case and Agreement*, ed. by Jonathan Bobaljik and Colin Phillips, 15–42. Cambridge, MA: MIT Department of Linguistics and Philosophy.
- . 1993c. Prepositions in Straits Salish and the noun/verb question. *Papers from the 28th International Conference on Salish and Neighboring Languages*, 159–74. Seattle: University of Washington.
- . 1994. Quantification in Straits Salish. In Bach et al., to appear.
- , and RICHARD DEMERS. 1982. Adjoined clauses in Lummi. *Papers from the 17th International Conference on Salish and Neighboring Languages*, 201–40. Portland: Portland State University.
- , —. 1983. An agent hierarchy and voice in some Coast Salish languages. *International Journal of American Linguistics* 49.167–85.
- , and MARY WILLIE. 1993. Pronoun incorporation into the verb in Navajo. Paper presented at the Athapaskan Conference, Santa Fe, NM.
- JOHNSON, KYLE. 1991. Object positions. *Natural Language and Linguistic Theory* 9.577–636.
- KAMP, HANS. 1981. A theory of truth and semantic representation. *Formal methods in the study of language*, ed. by Jeroen Groenendijk, Theo M. V. Janssen, and Martin Stokhof, 277–322. Amsterdam: Mathematical Centre Tracts, vol. 136. University of Amsterdam. [Reprinted in *Truth, interpretation, and information*, GRASS 2, ed. by J. Groenendijk, T. M. V. Janssen, and M. Stokhof, 1–41. Dordrecht: Foris, 1984.]
- KINKADE, M. DALE. 1983. Salish evidence against the universality of “Noun” and “Verb”. *Lingua* 60.25–40.
- KRATZER, ANGELIKA. 1992. *Towards a theory of voice*. Amherst: University of Massachusetts, MS.
- . 1994. On external arguments. *Functional Projections (University of Massachusetts Occasional Papers 17)*. Amherst: University of Massachusetts Department of Linguistics.

- KUIPERS, AERT. 1968. The categories verb-noun and transitive-intransitive in English and Squamish. *Lingua* 21.610–26.
- LANGACKER, RONALD W. 1987. Nouns and verbs. *Lg.* 63.53–94.
- LEWIS, DAVID. 1975. Adverbs of quantification. Formal semantics of natural language, ed. by Edward L. Keenan, 3–15. Cambridge: Cambridge University Press.
- MCCARTHY, JOHN. 1979. Formal problems in Semitic phonology and morphology. Cambridge, MA: MIT dissertation.
- MILSARK, GARY. 1977. Toward an explanation of certain peculiarities of the existential construction of English. *Linguistic Analysis* 3.1–29.
- MONTLER, TIMOTHY. 1986. An outline of the phonology and morphology of Saanich, North Straits Salish. Missoula, MT: University of Montana Occasional Papers in Linguistics, Department of Anthropology.
- . 1991. Saanich, North Straits Salish: Classified word list. Hull, Quebec: Canadian Ethnology Series #19, Canadian Museum of Civilization.
- MURASUGI, KUMIKO. 1992. Crossing and nested paths: NP movement in accusative and ergative languages. Cambridge, MA: MIT dissertation.
- . 1994. The transitivity morpheme as auxiliary in Inuit. Montreal: McGill University, MS.
- PARTEE, BARBARA. 1987. Noun phrase interpretation and type-shifting principles. Studies in discourse representation and the theory of generalized quantifiers. *GRASS* 8, ed. by J. Groenendijk, D. de Jongh, and M. Stokhof, 115–43. Dordrecht: Foris.
- PESETSKY, DAVID. 1989. Language particular processes and the Earliness Principle. Cambridge, MA: MIT, MS.
- POLLOCK, JEAN-YVES. 1989. Verb movement, Universal Grammar and the structure of IP. *Linguistic Inquiry* 20.365–424.
- SAPIR, EDWARD. 1911. Some aspects of Nootka language and culture. *American Anthropologist* 13.15–28.
- THOMASON, SARAH, and DANIEL EVERETT. 1993. Transitivity in Flathead. Papers from the 28th International Conference on Salish and Neighboring Languages, 317–43. Seattle: University of Washington.
- THOMPSON, LAURENCE C. 1979. The control system: A major category in the grammar of Salishan Languages. Proceedings of the Victoria Conference on Northwestern Languages, 1976, ed. by Barbara S. Efrat, 156–76. Victoria: British Columbia Provincial Museum Heritage Record No. 4.
- TRAVIS, LISA. 1984. Parameters and effects of word order variation. Cambridge, MA: MIT dissertation.

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This paper details the how many unique grammatical properties of Navajo, such as animacy-based ordering, argument indexing in the verbal morphology, as well as restrictions on the number and type of arguments, follow directly from the Pronominal Argument Hypothesis, and the idea that DPs in the language are adjuncts. Like Jelinek and Demers, it is a rich empirical implementation of the PAH.

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## NAVAJO AS A DISCOURSE CONFIGURATIONAL LANGUAGE

MaryAnn Willie and Eloise Jelinek

Baker (1996) defines “polysynthetic” languages as requiring registration of argument structure in the verbal morphology. The goal of this paper is to define the semantic features that underlie this typological property, as manifested in Navajo. We argue that Navajo is a discourse configurational language, where nominals are adjuncts ordered according to the topic/focus articulation of the clause, while incorporated pronominal arguments in the verb-sentence carry the grammatical relations. We show that some properties of anaphora and focus in Navajo provide crucial evidence on argument structure in the language. We identify strong vs. weak pronouns in Navajo, the syntax of the nominals, and the role of the Direct/Inverse voice alternation in determining word order and the topic/focus articulation of the clause.

### 11.1 Weak and Strong Pronouns

Pronouns have two distinct and complementary functions in universal grammar: as discourse anaphors and as deictic elements. *Weak pronouns* are discourse anaphors, backgrounded information, and exclude focus; *strong deictic pronouns* have inherent focus. In many languages, “weak” versus “strong” pronouns can be differentiated adequately on the basis of stress, intonation, or other focus devices

that may be analyzed separately from the pronouns as a lexical set. However, there is a large class of languages where these two functions of pronouns are represented in distinct pronominal paradigms that have very different morphological and syntactic properties, making it necessary to recognize two distinct closed-class categories in the grammar, the weak versus strong pronouns. In some languages, weak pronouns alternate with strong pronouns in argument positions, according to whether the use of the pronoun is anaphoric or deictic. The Yaqui examples in (1) illustrate this familiar contrast (Escalante, 1990).

- (1) a. 'apo'ik=ne viča-k  
 him=I see-PERF  
 'I saw *him*.' (strong object pronoun has focus)
- b. 'inepo 'a-viča-k  
 I him-see-PERF  
 'I saw *him*.' (strong subject pronoun has focus)

Yaqui is an SOV language with case-marked NP arguments (including freestanding pronouns) and a limited inventory of clitics. Clitic "doubling" is not required, and there is no subject-verb agreement. In (1a), the freestanding object pronoun has been fronted for focus, and the backgrounded subject is a second position clitic, which may attach to any word. In (1b) the freestanding subject pronoun has focus, and there is an object prefix on the verb. In Yaqui, speakers follow discourse dynamics in choosing between freestanding strong versus incorporated weak pronouns (Jelinek and Escalante, 1991). Yaqui also has noun incorporation, as in (2b), which removes an indefinite noun from focus.

- (2) a. maaso-ta=ne 'aamu  
 deer-ACC=1sNOM hunt:IMPF  
 'I'm hunting a *deer*.' (Object NP has focus)
- b. maaso-'aamu=ne  
 deer-hunt:IMPF=1sNOM  
 'I'm deer-hunting.' (Focus on activity)

In (2a), the ACC marked object NP is fronted for focus, and the subject clitic is backgrounded. In (2b), the activity has focus, and the incorporated noun cannot receive contrastive focus. While incorporation "subtracts" focus, making contrastive focus impossible, adding an independent lexical item makes it possible.

Partee (1987) argued that NPs in English do not correspond to a single semantic type, but show "type-shifting" across their various uses. Compare the uses of the word "dogs" in example (3):

- |     |                               |                           |
|-----|-------------------------------|---------------------------|
| (3) | a. The dogs ran away.         | Referential               |
|     | b. Fido and Spot are dogs.    | Predicational             |
|     | c. Dogs are loyal companions. | Quantificational; Generic |

Kiss (1998) identifies the important contrast between two kinds of focus. There is “information” focus (the ordinary default focus that marks new information) vs. “identificational” focus, which is quantificational in nature: it picks out some subset from a presupposed set of individuals. This contrastive identificational focus is marked in English by heavy stress and an intonation peak.

#### (4) Contrastive (Quantificational) Focus

- |                                   |                      |
|-----------------------------------|----------------------|
| a. The DOGS ran away.             | (not i.e., the cats) |
| b. Fido and Spot are DOGS.        |                      |
| c. DOGS are loyal companions.     |                      |
| d. It was the DOGS that ran away. |                      |
| e. It was YOU that ran away.      |                      |
| f. YOU ran away.                  |                      |

By using contrastive or “identificational” focus, the speaker is picking out some individual (or subset) rather than some others of a familiar set. Kiss notes that this contrastive focus is often expressed across languages by a “cleft” construction, as shown in (4d,e). In English, any element in an A-position, including pronouns (4e,f), can receive contrastive focus.

In pronominal argument languages, there is a more constrained mapping between argument structure and focus structure. The incorporated pronouns are discourse anaphors, whose reference is fixed by NPs occurring earlier in the discourse. As we saw with the Yaqui examples, incorporated and encliticized elements cannot receive contrastive focus; this applies to the pronominal arguments in polysynthetic languages. In these languages, contrastive focus is *excluded* from elements in A-positions (the weak pronouns), and confined to free-standing lexical items—NPs (including the strong pronouns). In Navajo, strong pronouns are adjuncts that do not mark a grammatical relation by morphological shape or syntactic position. Consider first an intransitive sentence, as in (5).

- |     |                   |                                   |
|-----|-------------------|-----------------------------------|
| (5) | a. <i>yáshti'</i> | b. <i>shí yáshti'</i>             |
|     | 1sNOM-speak       | I 1sNOM-speak                     |
|     | 'I am speaking.'  | 'I am (the one who is) speaking.' |

In (5a), the incorporated first singular nominative pronoun is backgrounded and cannot receive contrastive focus; the freestanding strong pronoun is added for this function in (5b). The problem of analysis is to distinguish this co-occurrence of weak and strong pronouns from an agreement system. Example (6) shows a transitive sentence:

- (6) *nisisdląąd*  
 2sACC-1sNOM-believed  
 Focus-Topic-V  
 'I believed you.'

Both the pronominal arguments in (6) are presuppositional, established in the discourse. Of the two, the subject pronoun *I* is topical, and the patient pronoun *you*, which is leftmost in the word, has focus as part of the new information that is the communicative burden of the sentence. This is the "default" focus structure of the Navajo verb-sentence. Neither of the incorporated pronominal arguments can receive contrastive stress; a strong pronoun must be added. This strong pronoun appears immediately before the verb, in the focus position, regardless of the grammatical relation of the corresponding weak pronoun.

- (7) a. *ni nisisdląąd*  
 YOU 2sACC-1sNOM-believed  
 'You are the one I believed.'  
 b. *shí nisisdląąd*  
 I 2sACC-1sNOM-believed  
 'I am the one who believed you.'

In (7a) the strong pronoun immediately preceding the verb-sentence refers to the subject; in (7b), to the object. Adding two strong pronouns is unacceptable.

- (8) *## shí ni nisisdląąd*

Focus is a dynamic system, and the focus structure of a sentence may be altered by a number of grammatical devices, including word order, intonation, focus particles, etc. (Hajičova, Partee, and Sgall, 1995). Adding a strong or contrastive pronoun alters the focus structure of the sentence, much as the "cleft" glosses in (7) suggest. These sentences are suitable replies to different questions:

- (9) a. *háf-sh yisínídląąd*  
 who-Q 3ACC-2sNOM-believed  
 'Who did you believe?' (Suitable reply: 7a)  
 b. *háf-sh shooshádląąd*  
 who-Q 1sACC-3NOM-believed  
 'Who believed me?' (Suitable reply: 7b)

Navajo lacks obligatory Wh-movement. Both Wh-words and strong pronouns have inherent focus. When both are added to a verb-sentence, the strong pronoun

is preferably leftmost, in a Topic position, regardless of the grammatical relation of the coindexed weak pronoun.

- (10) a. *hái-sh yínízhí*  
 who-Q 3ACC-2sNOM-called  
 'Who are you calling?'  
 b. *ní hái-sh yínízhí*  
 you who-Q 3ACC-2sNOM-called  
 'Who are *you* calling?'
- (11) a. *hái-sh shózhí*  
 who-Q 1sACC-3NOM-called  
 'Who is calling me?'  
 b. *shí hái-sh shózhí*  
 I who-Q 1sACC-3NOM-called  
 'Who is calling *me*?'

"Strong" pronouns may be coreferent with possessive pronouns and postpositional objects as well as with subjects and direct objects—in short, with incorporated pronouns in any grammatical relation. In (12b), the strong pronoun coindexed with the possessive pronoun is reduplicated for greater emphasis.

- (12) a. *shí-má*  
 'my mother'  
 b. *shí shí shí-má*  
 'It's *my* mother!!'
- (13) a. *shá 'ánílééh*  
 1s-for 3ACC-2sNOM-make  
 'Make it for me.'  
 b. *shí shá 'ánílééh*  
 I 1s-for 3ACC-2sNOM-make  
 'Make it for *me*!'

To summarize: while incorporation "subtracts" focus, making contrastive focus on the incorporated pronoun impossible, adding an independent lexical item makes contrast possible. In Yaqui (or English) the freestanding strong pronouns alternate in A-positions with the incorporated weak pronouns, according to the focus articulation of the clause. In these languages, "strong" pronouns are case marked in A-positions, whether or not there is subject agreement. In contrast, in a pronominal argument language like Navajo, "strong" pronouns are caseless adjuncts, not ordered according to grammatical relation, and co-occur with weak pronouns in any grammatical relation to mark focus. This co-occurrence of pronouns is additive and is analogous to the marking of contrastive focus by adding stress or augmenting an intonation peak.

If there are languages where only weak pronouns can occur in argument positions and freestanding pronouns serve only to mark contrastive focus, then a language with some other means of marking focus should be able to do without



freestanding pronouns. This possibility is realized: there are pronominal argument languages that have no freestanding pronouns at all. Lummi (Straits Salish) has weak pronominal clitics and affixes, as shown in (14). The ACC object is a pronominal suffix, and the NOM subject is a second position clitic.

- (14)  $k^wəniŋ-t-oŋəʔ-lə =sx^w$   
 help-TRAN-1pACC=PAST=2sNOM  
 'You helped us.'

While Straits Salish has no freestanding pronouns, it has a paradigm of deictic lexical roots that mark the phi features of person and number. These roots never serve as subjects or direct objects; only pronominal arguments, as in (14), appear in these positions. The person-deictic roots differ from the pronominal arguments as follows: (a) they appear in sentence initial position, as the lexical head of a main clause; (b) they appear with a determiner, as head of a subordinate nominalized structure; (c) they are exclusively third person in syntax; and (d) they have inherent focus. Their distribution is shown in (15):

- (15) a.  $nək^w=yəx^w=∅$                        $cə k^wəniŋ-t-oŋəʔ$   
 YOU=MODAL=3ABS    DET help-TRAN-1pACC  
 'It must be *you*, the [one who] helped us.'
- b.  $k^wəniŋ-t-ŋ=ʔ$                       'ə  $cə nək^w$   
 help-TRAN-PASS=1pNOM    OBL DET YOU  
 'We were helped by the [one who is] *you*.'

Example (15a) shows a person-deictic root as lexical head of a main clause; Lummi has no copula. Example (15b) shows this root with a determiner, as lexical head of an oblique agent adjunct to a passive clause. Oblique agents have focus in Salish (and perhaps universally).

In the following excerpt from a text, the first sentence has a weak second person singular pronoun. This referent is put in focus by the use of a deictic root in the second sentence.

- (16)  $stoməʃ=sə=sx^w$   
 warrior =FUTURE=2sNOM  
 'You will be a warrior.'
- $nək^w=∅$                        $cə$   $stoməʃ$   $ti'ə$  'ən- $sx^w$  'eʔə  
 YOU=3ABS    DET warrior this 2sPOSS-place  
 'It's *you* who will be your village's warrior (the warrior for your village).'  
 (Charles, Demers, and Bowman, 1978)

Winnebago also lacks freestanding pronouns, but employs a somewhat different strategy to mark focus. There are incorporated (morphophonologically complex) pronominal arguments.

- (17) a. *hage* 'I bury him'  
 b. *rage* 'you bury him'  
 c. *ŋe* 'he buries him'

A deictic or demonstrative particle is added to the verb to create a construction with contrastive focus on the subject.

- (18) *ne:-c'ə-ha-na*  
 DEICTIC-instead-1sgSubj-sleep  
 'I slept, instead.' (Lipkind, 1945)

## 11.2 Transitivity as a Functional Head in Pronominal Argument Languages

In the Navajo, Salish, and Winnebago examples, we have seen the verb inflected for both subject and object arguments. A feature commonly seen in pronominal argument (PA) languages is the overt marking of transitivity, and the presence of weak pronouns at functional projections in INFL that mark both the subject and object arguments. In Navajo, valence or transitivity is overtly marked in a functional head, the so-called classifier prefix to the verb root. In (19b), the *-l* classifier marks the verb-sentence as transitive.

- (19) a. *ch'iyáán yíchxǫ'*  
 food 3NOM-ruined  
 'The food is ruined.' (Unaccusative)  
 b. *ch'iyáán yiyí-l-chxǫ'*  
 food 3ACC-3NOM-TRAN-ruined  
 'He ruined the food.' (Transitive)

We do not assume that the weak pronouns undergo movement into their A-positions, but that they are base generated at argument positions introduced by the functional projections where their case is checked. These functional heads correspond to auxiliary or "light" elements that determine argument structure (Jelinek and Willie 1996). McDonough (1990) argues for an incorporated auxiliary in Navajo immediately preceding the verb stem where aspect and the subject are marked together in "portmanteau" elements. The verb stem is composed of the root and the so-called classifier, which marks valence. Objects, McDonough argues, are clitics that are attached more loosely to the Subject/Aux/Verb com-

plex. Aspect is exceptionally rich and complex in Navajo, and there are a number of entailments among values of voice, transitivity, and aspect.

### 11.3 Subject Agreement and Object Clitics

We need to distinguish pronominal argument languages from languages with two other widely distributed features of argument structure: a) subject agreement, and b) object clitics. These latter two features frequently co-occur, producing a kind of subject/object asymmetry that is exemplified in languages such as Spanish, Chichewa (Bresnan and Mchombo 1987), and Egyptian Arabic (Jelinek, in press). In these languages, the verb agrees with both definite and indefinite subjects. However, direct object clitics differ significantly from AGR phenomena in that they never cooccur with *indefinite* NPs. The following examples are from Egyptian Arabic:

- (20) a. *kalt (it)-tiffaaHa*  
ate:1sNOM (DET)-apple  
'I ate (the)/an apple.'
- b. *kalt-aha*  
ate:1sNOM-3fsACC  
'I ate it.'
- c. *kalt-aha, it-tiffaaHa*  
ate:1sNOM-3fsACC the-apple  
'I ate it, the apple, (that is).'
- d. \**kalt-aha, tiffaaHa*  
ate:1sNOM-3fsACC apple  
'I ate it, an apple'

In (20c), an intonation break identifies the definite NP as an "afterthought" adjunct. Example (20d) is excluded, as is (21b), in Spanish.

- (21) a. *La comí, la manzana.*                      b. \**La comí, una manzana.*  
'The apple, I ate it.'                                      [\*an apple, I ate it]

This contrasts with the situation in Navajo and other PA languages, where we do not see this subject/object asymmetry. Third person pronouns, both subject and object, may cooccur with either definite or indefinite NPs:

- (22) a. *bilasáana yíyáá'*  
 apple 3ACC-1sNOM-ate  
 'The apple, I ate it.'
- b. *bilasáana ła' yíyáá'*  
 apple one 3ACC-1sNOM-ate  
 'One/an apple, I ate it.'

The default reading of NPs in Navajo is definite, but they may be given an indefinite reading in certain contexts, i.e. in existential constructions. Complex NPs may be marked indefinite by the inclusion of a cardinality expression, as in (22b). Nominals on either definite or indefinite readings may be linked to third-person subject or object pronouns in Navajo, subject to certain constraints imposed by the Inverse voice, to be specified in section 11.4.3. In pronominal argument languages, arguments (the weak pronouns) may not be dropped, but adjuncts (strong pronouns and nominals) need not be added.

#### 11.4 Nominal Adjunction and Direct/Inverse Voice in Navajo

Like strong pronouns and Wh-words, nominals are adjuncts to the Navajo verb-sentence. Nominals may identify a familiar referent that is "new" in the context. Compare:

- (23) a. *yisisdląąd*  
 3ACC-1sNOM-believed  
 'I believed him/her.'
- b. *bí yisisdląąd*  
 he/she 3ACC-1sNOM-believed  
 'I believed *him/her*.'
- c. *'ashkii yisisdląąd*  
 boy 3ACC-1sNOM-believed  
 'I believed him, the boy.'

Nominal adjuncts are licensed by a coindexed pronominal argument in the verb-sentence; they must match this pronoun in phi-features. Jelinek (1984) and Willie (1991) argue that NP adjuncts, like relative clauses, are predicated of pronominal heads, and that the pronoun + adjunct form a complex discontinuous argumental expression at the level of the interpretation of the sentence.

When a non-third-person strong pronoun and an NP are both added to a transitive sentence in Navajo, either order of the adjuncts is acceptable. The phi-features of the non-third-person pronoun determine coreference. Again, the word order where the strong pronoun is leftmost is preferred, regardless of the grammatical relation of the coreferent weak pronoun.

- (24) a. *shí 'ashkii sétaʔ*  
 I boy 3ACC-1sNOM-kicked  
 'It was *I*, I kicked the boy.'
- b. *shí 'ashkii siztaʔ*  
 I boy 1sACC-3NOM-kicked  
 'It was *me*, the boy kicked me.'

Both strong pronouns and nominals may have strong contrastive focus, marked with a focus particle.

- (25) *'ashkii=ga' yisisdląąd, ni 'é' at'ééd*  
 boy=FOCUS 3ACC-1sNOM-believed you DEM girl
- yisínídląąd*  
 3ACC-2sNOM- believed  
 'It was the *boy* I believed; as for you, you believed the girl.'

The focus particle =*ga*' typically follows the leftmost word. Strong pronouns and nominals may receive additional focus under the scope of an adverbial quantifier.

- (26) a. *t'áá shí t'éiyá 'ashkii yisisdląąd*  
 just I only boy 3ACC-1sNOM-believed  
 'Only *I* believed the boy.'
- b. *t'áá 'ashkii t'éiyá yisisdląąd*  
 just boy only 3ACC-1sNOM-believed  
 'I believed only the *boy*.'

However, a strong pronoun is incompatible with a nominal under the scope of *only*; conflicting focus markers would be present.

- (27) a. \**shí t'áá 'ashkii t'éiyá shédléézh*  
 b. \**t'áá 'ashkii t'éiyá shí shédléézh*

Perkins (1978) gives an analysis of a particle marking contrastive constituent negation in Navajo, and Willie and Jelinek (1996) discuss other focus particles.

We have seen that strong pronouns in Navajo are employed to mark focus, do not show case marking, and do not have a fixed position in the clause marking a grammatical relation. However, there is a construction type in Navajo where the order of NP adjuncts is fixed: transitive sentences with two third-person arguments. Note that it is only with these *exclusively third-person* transitive sen-

tences that contrasts in phi-features will not suffice to fix coreference between the weak pronouns and any NP adjuncts. When two NP adjuncts are present, the sentences are interpreted as follows:

- (28) a. 'ashkii 'at'ééd yiyiitsá  
 boy girl 3ACC-3NOM-saw  
 'The boy saw the girl.'
- b. 'at'ééd 'ashkii yiyiitsá  
 girl boy 3ACC-3NOM-saw  
 'The girl saw the boy.'

This fixed order of the NPs suggests that word order is marking grammatical relations. And the fact that the sentence is grammatical without the nominals has been attributed to "multiple agreement" and pro-drop.

- (28) c. yiyiitsá  
 3ACC-3NOM-saw  
 'She/he saw her/him.'

Evidence against multiple agreement and pro-drop, and in support of the claim that nominals are adjuncts, is provided by the analysis of complex sentences in Navajo. Let us begin with relative clauses.

#### 11.4.1 Relative Clauses in Navajo.

Hale and Perkins (1976), and Platero (1974) pointed out problems raised by the following construction type.

- (29) 'adáá'dáá' 'ashkii 'at'ééd yiyiitsá-néę yidoots'qs.  
 yesterday boy girl 3A-3N-saw-REL 3A-3N-will kiss  
 'The boy who saw the girl yesterday will kiss her.'

In this complex sentence, the arguments of the relative clause and the following main clause are obligatorily coreferential. We could account at least for coreference of the subject arguments, if we assumed that the NP 'ashkii is the main clause subject, and that the relativized and main clause verbs show agreement with this subject. The problem is that both the lexical NPs are internal to the relative clause, which is under the scope of the temporal adverb 'adáá'dáá' 'yesterday'; the main clause has Future time reference. On a "pro-drop" and agreement analysis, we would have to assume an initial *pro* (the head of the relative) that would be coreferential with the NP 'ashkii within the relative clause.

- (30) \*[pro [<sup>S</sup>'ad áá d á á' 'ashkii 'at'ééd yiyiitsá n é é]] pro yidoots'qs.  
O V

This violates Condition C of the binding theory and ought to exclude the reading given. Suppose, however, that the relative clause, a derived nominal, is an adjunct.

- (31) The boy<sub>i</sub> who saw the girl<sub>j</sub> yesterday, he<sub>i</sub> will kiss her<sub>j</sub>.

Now Condition C is irrelevant, and we need to account for coreference of both arguments across the two clauses in some other way. In each clause, the verb is inflected for both arguments. Our claim is that this inflection corresponds to incorporated weak pronouns, discourse anaphors. Within the relative clause, the NPs are adjuncts to the verb-sentence and are coindexed with the pronominal arguments that license them. The entire relative clause, including any NPs present, is in turn an adjunct that provides discourse antecedents for the main clause incorporated pronouns. Hale (1973a, 1983) identified adjoined relative clauses in Australia, and they are common in Native America.

The constraint does not apply if a nominal appears in the second clause, introducing a new referent.

- (32) 'ad áá d á á' 'at'ééd yiyiitsá n é é Baa' yidoots'qs'  
[yesterday girl 3A-3N-saw-REL] Baa' 3A-3N-will kiss  
'The one<sub>i</sub> who saw the girl<sub>j</sub> yesterday, he<sub>i</sub> will kiss Baa'<sub>k</sub>'

The "relativizing" enclitic *-néé* (*-yéé*) can in fact occur with simple nominals and be glossed 'aforementioned'. The following example is from Young and Morgan (1987):

- (33) m á 'ii g a t b á h í y é é y i c h 'í ' d a h d i i l g h a d j i n í  
coyote rabbit afore. 3-to off 3NOM-started to run 4NOM-say  
'Coyote started to run towards (this) aforementioned gray rabbit, it is said/they say.'  
[Coyote, this aforementioned gray rabbit, he started to run towards it, they say.]

Or, it can be used to refer to someone who is deceased:

- (34) *shicheii-yéé*  
my grandfather-former  
'my late grandfather'

The obligatory coreference between the adjoined and main clause arguments that we see in (29) is found in *all* complex sentences in Navajo in transitive clauses with exclusively third-person arguments<sup>1</sup>. An example with an adjoined temporal clause:

- (35) a. *Jáan Kii yiztał=go néidíłts'in*  
 John Kii 3NOM-3ACC-kicked=COMP 3ACC-3NOM-hit  
 'When John<sub>i</sub> kicked Kee<sub>j</sub>, he<sub>i</sub> hit him<sub>j</sub>.'
- b. *yiztał=go néidíłts'in*  
 3ACC-3NOM-kicked=COMP, 3ACC-3NOM-hit  
 'When he<sub>i</sub> kicked him<sub>j</sub>, he<sub>i</sub> hit him<sub>j</sub>.'

This constraint does not apply when an intransitive clause is included. Here, coreference between some argument of the adjoined temporal clause and the pronominal subject of the following main clause is possible but not obligatory.

- (36) *Jáan Kii yiztał=go, yóó'eelwod*  
 John Kii 3ACC-3NOM-kicked=COMP, 3NOM-ran away  
 'When John<sub>i</sub> kicked Kee<sub>j</sub>, he<sub>i,j,k</sub> ran away.'

This looks just like discourse anaphora in languages with subject agreement and object clitics.

- (37) *Cuando Juan le pegó a Pablo, se fué corriendo.*  
 'When John<sub>i</sub> hit Paul<sub>j</sub>, he<sub>i,j,k</sub> ran away.'

The Navajo constraint on coreference exemplified in (29) and (35), which does not apply in Spanish, is stated in (38):

- (38) In sequences of transitive clauses with all third person arguments, there is obligatory coreference between the two pronominal arguments of the first clause and the two pronominal arguments of the second.

In the next section, we argue that this unusual constraint on coreference across clauses in Navajo follows from the "voice split," the well-known *yi-/bi-* alternation in the language. Either one or the other value of the voice alternation must be present whenever the conditions for it are met: in transitive sentences with exclusively *third*-person arguments. The voice alternation is excluded where there is a first-, second-, or "fourth"-person argument, and in intransitive sentences; that is, it occurs only where the phi-features of the weak pronouns will not suffice to fix coreference unambiguously.<sup>2</sup> The voice alternation deter-



mines the topic/focus articulation of the clause, and thus determines the interpretation of a nominal or strong pronoun appearing in the focus position to the left of the verb complex. This makes word order relevant to the interpretation of the sentence, despite the non-argumental status of the nominals.

#### 11.4.2 The Navajo Inverse Voice

The well-known *yi-/bi-* alternation in Navajo, described in a pioneering paper by Hale (1973b), may be identified as a voice alternation. (Gender is an artifice employed here to mark coindexing.)

- (39) a. Q. *haa-sh yít'iid*  
 what-Q 3ACC-3NOM-did  
 'What did she<sub>i</sub> do?'
- b. A. *yiztał*  
 3ACC-3NOM-kicked (Direct)  
 Focus<sub>j</sub>-Topic<sub>i</sub>-V  
 'She<sub>i</sub> kicked him<sub>j</sub>.'
- (40) a. Q. *haa-sh yidzaa*  
 what-Q 3ACC-3NOM-happened  
 What happened to him?
- b. A. *biztał*  
 3ACC-3NOM-kicked (Inverse)  
 Topic<sub>j</sub>-Focus<sub>i</sub>-V  
 ['He<sub>j</sub> was kicked by her<sub>i</sub>.']

In (39b), the agent is topic, and the patient is part of the focus. In (40b), the *bi-* pronoun appears in the Inverse construction, and marks a *topicalized patient*. These sentences do not mean the same, even when no nominals are present. There is a change in the mapping between grammatical relations and topic/focus structure. The inverse is not a passive; it is a transitive with two direct arguments. However, the passive (in brackets in the examples here) is often the "best available" gloss, since the passive and inverse both make the patient topical.

Krifka (1991) identifies a "particularly vexing problem" of analysis in connection with the following construction type:

- (41) *SUE KISSED John*. (TOPIC-COMMENT; Krifka 1991)

Krifka observes: "There is a reading where *Sue* and *kissed* seem to form a simple focus, at least semantically; (41) may be an answer to

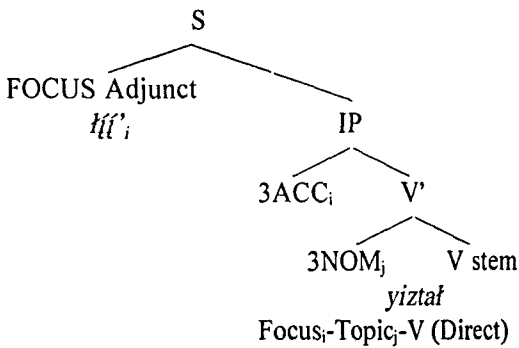
(42) *What happened to John?*

where the focus is equivalent to *was kissed by Sue*" (1991:152). Krifka identifies this sentence type as a Topic-Comment construction, as opposed to a Focus-Background construction, since a comment (the string *Sue kissed* in this example) need not be a syntactic constituent. In contrast, a focus must be a constituent, and a background need not be.

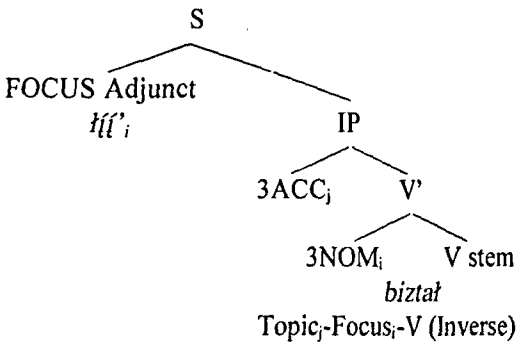
The Navajo inverse, like Krifka's example in (41), makes the patient topical. Krifka also notes that the passive is often the best paraphrase for topic-comment sentences like (41). However, the Navajo inverse and direct do not differ in surface syntactic constituency; they differ only in topic/focus structure, as shown in (39b) and (40b). Partee (1991) notes that in a topic-comment construction, there is a requirement that the topic be established in the discourse. This requirement applies to the referent of the *bi*-object pronoun in Navajo. The inverse construction, like ergative constructions, has a special marked status in universal grammar, since it violates a thematic hierarchy whereby agents are topical in transitive sentences. The Navajo inverse may be regarded as a grammaticalization of a topic-comment construction like (41).

Nominals in Navajo third-person transitive sentences are interpreted as follows. A nominal immediately preceding the inflected verb is in the focus position. Whether this nominal is coindexed with the agent or patient pronominal argument depends upon the *yi-/bi*-alternation.

In both (43) and (44), the nominal *Iff'* is in the focus position. In (43) the following patient pronoun has focus in the verb-sentence, and serves as an anaphor to the nominal. In (44), equivalent to Krifka's example, the focus nominal immediately precedes the *topicalized patient* pronoun, and coreference is excluded. By virtue of its position, the nominal has focus; it cannot be coindexed with the explicitly topicalized pronoun *bi-*, the patient, and by default is coindexed with the focused agent pronoun.

(43) The Direct (*yi-*) Construction

$iff'$  *yiztaf*  
 horse 3ACC-3NOM-kicked (Direct)  
 FOCUS Focus-Topic-V  
 'He kicked it, [the horse]<sub>F</sub>.'

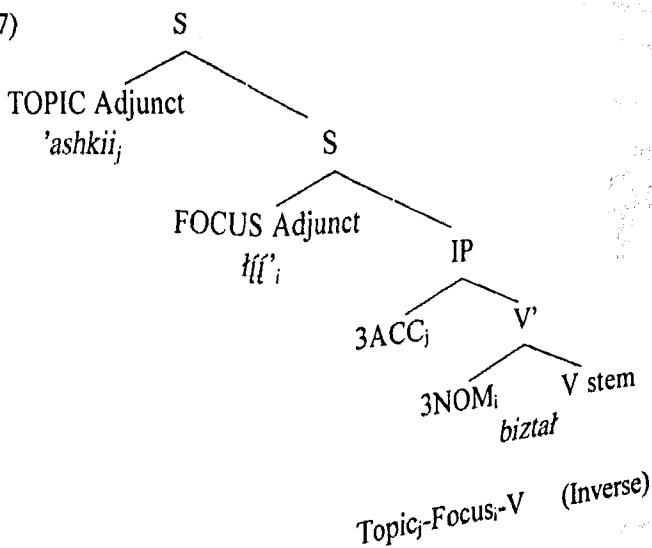
(44) The Inverse (*bi-*) Construction

$iff'$  *biztaf*  
 horse 3ACC-3NOM-kicked (Inverse)  
 FOCUS Topic-Focus-V  
 'He was kicked by it [the horse]<sub>F</sub> / [The horse]<sub>F</sub> kicked him.'

We noted that there is no direct/inverse alternation in constructions that include a non-third-person argument. As shown in examples (7) and (45), the phi-features of non-third-person incorporated pronouns determine unambiguously their coreference with strong pronouns.

- (45) a. *shf sétaf*  
 I 3ACC-1sNOM-kicked  
 '(It was) I, I kicked him.'

(47)

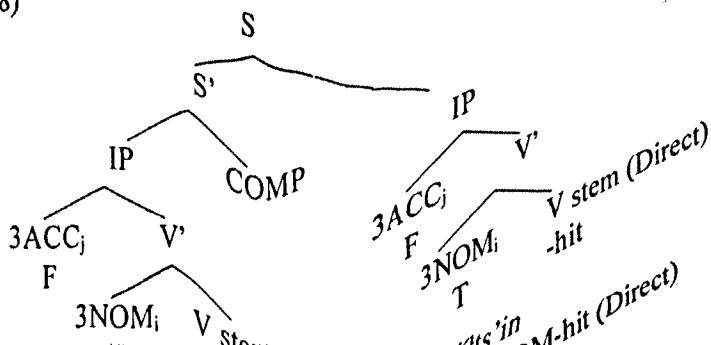


'ashkii iʃi' biztaʃ  
 boy horse 3ACC-3NOM-kicked (Inverse)  
 TOP-ADJ FOCUS Topic-Focus V  
 'The boy, he was kicked by [the horse]<sub>F</sub>.'

"Outer" nominals are coindexed with the topic pronoun, whether agent or patient. In sum: in each voice alternate, the NP in the focus position is coindexed with the focus pronoun of the verb-sentence.

Finally, coindexing across the arguments of a sequence of two third person transitive clauses is as follows. The two pronominal arguments of the first clause (and their adjuncts, if any) must be coindexed with the two pronominal arguments of the main clause, as we saw with Platero's relative clause example (29) above. The voice alternation obligatorily operates over the topic/focus structure of *both* clauses in the sequence. Compare (48), the structure for the complex sentence shown in (35b), where the agent is topic in both clauses, with example (49) where the second clause is inverse.

(48)





tion of the adjoined nominals, even with respect to number, as in (50). (Nouns in Navajo are not marked for number, aside from a half-dozen words referring to humans.)

### 11.4.3 Definiteness and the Inverse

An important property of inverse constructions in Navajo is identified by Willie (1991), who argues that the preferred reading of a Navajo noun is definite (outside of existential contexts, etc.) unless it is overtly marked indefinite. The examples in (51—53) show that in a direct transitive, either argument can be definite or indefinite.

- (51) 'ashkii 'at'ééd yizts'qs  
 boy girl 3ACC-3NOM-kissed  
 'The boy kissed the girl.'
- (52) 'ashkii léi' 'at'ééd yizts'qs  
 boy a girl 3ACC-3NOM-kissed  
 'A boy kissed the girl.'
- (53) 'ashkii 'at'ééd léi' yizts'qs  
 boy girl a 3ACC-3NOM-kissed  
 'The boy kissed a girl.'

(The particle *léi'* can also have a specific reading in some contexts, as with English *a*, *an* (see Diesing 1992), but this is not the reading we are concerned with here.) Compare the inverse forms in (54—56):

- (54) 'ashkii 'at'ééd bizts'qs  
 boy girl 3ACC-3NOM-kissed (Inverse)  
 'The boy, the girl kissed him.'
- (55) 'ashkii 'at'ééd léi' bizts'qs  
 boy girl a 3ACC-3NOM-kissed (Inverse)  
 'The boy, a girl kissed him.'
- (56) \*'ashkii léi' 'at'ééd bizts'qs  
 boy a girl 3ACC-3NOM-kissed (Inverse)  
 ['A boy, the girl kissed him.']

For the inverse, an indefinite reading of the antecedent for the agent pronoun is permitted, but an indefinite reading of the antecedent for the highly presuppositional topicalized patient *bi-* is excluded.

Willie also shows an interesting contrast in the interpretation of Wh-words in the direct/inverse voice alternation. There is no obligatory Wh-movement in Navajo, but there may be focus (leftward) movement of the Wh-word. The particle *-sh* encliticized to Wh-words has inherent focus, and usually occurs after the first word in the sentence.

- (57) a. *háí-sh yizts'qs*  
 who-Q 3ACC-3NOM-kissed (Direct)  
 'Who did he kiss?'  
 b. *háí-sh bizts'qs*  
 who-Q 3ACC-3NOM-kissed (Inverse)  
 'Who kissed him?'

When a Wh-word and a second nominal are adjoined, both adjuncts have focus, and the following ambiguity arises with the direct construction:

- (58) a. *Jáan háí-sh yizts'qs*  
 John who-Q 3ACC-3NOM-kissed (Direct)  
 'As for John, he kissed who?'  
 b. *háí-sh Jáan yizts'qs*  
 who-Q John 3ACC-3NOM-kissed (Direct)  
 1) 'Who was it, that kissed John?' Or:  
 2) 'Who was it, that John kissed?'

In (58a), the first adjunct is a topic, and no focus movement and ambiguity are present. The second reading of (58b) shows optional focus movement of the Wh-word + Q to the leftmost position in the sentence. Now compare (59), the inverse construction with a topicalized patient pronoun.

- (59) *háí-sh Jáan bizts'qs*  
 who-Q John 3ACC-3NOM-kissed (Inverse)  
 'Which one (of you) was it, that was kissed by John?'

A Wh-word coindexed with a *bi-*pronoun is given a presuppositional "which one" reading; the questioned patient in (59) must belong to a presupposed set, which includes the addressee. It is "D-linked", in the sense of Pesetsky (1987). When a presuppositional reading is not intended, the direct form, as in example (58), is employed. The inverse does not permit optional focus movement of the Wh-word:

- (60) a. *Jáan háí-sh bizts'qs*  
 John who-Q 3ACC-3NOM-kissed (Inverse)  
 'As for John, he was kissed by whom?'  
 b. *háí-sh Jáan bizts'qs*  
 who John 3ACC-3NOM-kissed (Inverse)  
 1) 'Which one (of you) was kissed by John?'  
 2) \*'John was kissed by whom/which one?'

The *bi*-pronoun marks a topic/focus inversion that is incompatible with focus movement of the Wh-word.

#### 11.4.4 The Animacy Hierarchy

In most of the examples of the voice alternation that we have seen so far, either the direct or inverse form can be used, depending on which argument is topical. However, if the two third-person referents differ along an animacy scale, it is conventional to make the more animate or human referent the topic. Compare (61, 62):

- (61) a. *ííí' tsé yiztał*  
 horse rock 3ACC-3NOM-kicked (Direct)  
 'The horse kicked the/a rock.'  
 b. *?\* tsé ííí' biztał*  
 rock horse 3ACC-3NOM-kicked (Inverse)  
 ['the rock was kicked by the/a horse']  
 (62) a. *?\* ííí' 'ashkii yiztał*  
 horse boy 3ACC-3NOM-kicked (Direct)  
 ['the horse kicked the/a boy']  
 b. *'ashkii ííí' biztał*  
 boy horse 3ACC-3NOM-kicked (Inverse)  
 'The boy was kicked by the/a horse.'

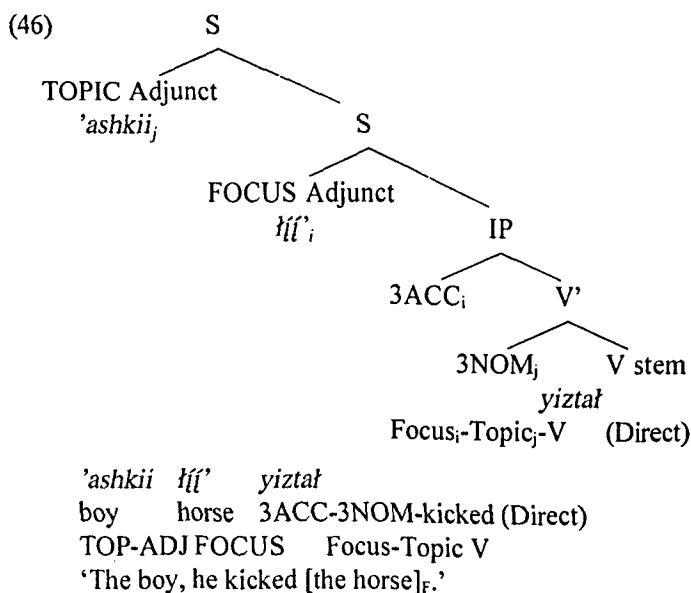
The less animate referents here are typically not topical, are more apt to be new information. Speakers vary in respecting the hierarchy, and its use is declining now under language loss. Making a less animate or volitional patient topical is clearly ruled out when this patient is indefinite or new information, not established in the discourse, since the inverse requires a specific patient. The use of the inverse form here can be understood as a way of ensuring that agents low on the animacy scale are focused as new information, while the high-ranking, definite patient is made the topic.



- b. *shí siztał*  
 I 1sACC-3NOM-kicked  
 '(It was) *me*, he kicked me.'

Nominals in Navajo are never coindexed with first- or second-person pronouns. In (45), the strong pronoun has contrastive focus, whether it is an adjunct to the subject or object pronoun. The pre-verbal position is a focus position, not an object position, for both nominals and strong pronouns.

Now consider sentences with two adjoined nominals, not common in discourse. The position immediately preceding the verb is the focus position. A nominal must be coindexed with a pronominal head. By default, an "outer" nominal must be coindexed with the pronoun that is not coindexed with the inner nominal; it is a "topic-adjunct", or reintroduced topic.



Additional evidence on the adjunct status of nominals is provided by lexical/semantic constraints on the plausible interpretation of sentences that include nominals. When the lexical features of the transitive verb entail an animate agent and an inanimate patient, a focus nominal need not be coindexed with the patient/focus of a *yi-* verb.

- (63) *'ashkii yiyííłta'*  
 boy 3ACC-3NOM-count plural objects  
 'It was *the boy* who counted them.' (*The boy* counted them).

Since inanimate objects do not count boys, this sentence poses no problems of interpretation. An example with a postpositional phrase, where the preceding animate nominal is plausibly interpreted as coindexed with the agent pronoun:

- (64) *'asdzáá yii' yiyííłbéézh*  
 woman 3-in 3ACC-3NOM-cooked  
 'It was the *woman* who cooked it in it.' (e.g., food in a pot)

In these examples, the animacy hierarchy makes it impossible to include a nominal corresponding to the inanimate topic in the position preceding the animate focus nominal, and the use of the direct form is permitted, although it is not preferred. If the preverbal position marked a grammatical relation, an object position, then we might expect (64) and (65) to be ruled out entirely.

There are a few special contexts where the animacy hierarchy and the voice alternation may be set aside. If the sentence makes reference to natural forces endowed with supernatural powers in Navajo culture, such as the lightning or the rainbow, the animacy scale may be irrelevant (Willie 1991; Thompson 1996). And, if a first-, second- or fourth-person possessor argument is present, it can disqualify the sentence as an environment for the voice alternation.

- (65) *shilíí' 'ashkii yiztał*  
 1sPOSS-horse boy 3ACC-3NOM-kicked  
 'My horse kicked the boy.'

Thompson (1996) cites the example shown in (66). In this example also the first person possessor pronoun excludes the voice alternation:

- (66) *díí sis shizhé'é 'áyilaa*  
 this belt 1sPOSS-father 3ACC-3NOM-made  
 'My dad made this belt.'

A comparison of (65 and 66) shows that word order does not mark grammatical relations in these sentences lacking the voice alternation.

#### 11.4.5 The Inverse and Generics

We have seen that in complex sentences with adjoined temporal or relative clauses in Navajo, the constraint stated in (38) applies. In these constructions, the voice alternation can mark a switch across clauses in the topicalized argument. Complex sentences with direct verb forms can be used in generic statements in Navajo:

- (67) *lééchaq̄'i m̄a'ii yił didił=go yiyiithash*  
 dog coyote 3-PP 3NOM-catch=COMP 3ACC-3NOM-bites (Direct)  
 'When a dog<sub>i</sub> catches a coyote<sub>j</sub>, it<sub>i</sub> bites it<sub>j</sub>.'

However, inverse forms cannot be used in generic statements. Since the topicalized patient is definite/specific, it excludes a generic reading. Example (68) is about a specific coyote and a particular event.

- (68) *lééchaq̄'i m̄a'ii yił deezdéeł=go bishxash*  
 dog coyote 3-PP 3-caught=COMP 3A-3N-bit (Inverse)  
 'When the dog<sub>i</sub> caught the coyote<sub>j</sub>, it<sub>i</sub> was bitten by it<sub>j</sub>.'

Constructions with relative clauses cannot be generics in Navajo, whether direct or inverse. Relatives are presuppositional:

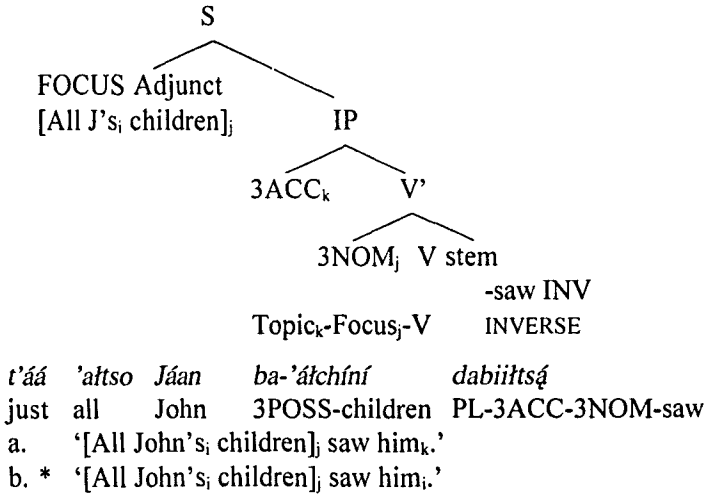
- (69) a. *lééchaq̄'i m̄a'ii yił deezdéeł=yéę*  
 dog coyote 3-PP 3-caught=REL (Direct)  
*yiyiithash*  
 3A-3N-bite DIRECT  
 'The dog<sub>i</sub> that caught the coyote<sub>j</sub>, it<sub>i</sub> is biting it<sub>j</sub>.'
- b. *lééchaq̄'i m̄a'ii yił deezdéeł=yéę*  
 dog coyote 3-PP 3-caught=REL (Direct)  
*biithash*  
 3A-3N-bite INVERSE  
 'The dog<sub>i</sub> that caught the coyote<sub>j</sub>, it<sub>i</sub> is being bitten by it<sub>j</sub>.'

The adjoined relative clause in Navajo refers to a backgrounded proposition, to information and referents established in the discourse: "aforementioned." The relative need not be past time, but it is presupposed, familiar information.

## 11.4.6 Coreference and Possessive Noun Phrases

A second constraint on anaphora in complex sentences in Navajo is exemplified in (70).<sup>3</sup>

(70)



This constraint is stated in (71):

- (71) Coreference between possessive arguments internal to a complex NP and the pronominal arguments of a following verb-sentence is excluded.

For most speakers, coreference of this kind is impossible; for others, it is strongly dispreferred. What prevents the noun internal to the complex NP in (70) from serving as the discourse antecedent for an incorporated pronoun in the verb-sentence? This would be a perfectly natural reading for an apparently parallel construction in a language like Spanish, with subject agreement and object clitics:

- (72) *Todos los hijos de Juan lo vieron.*  
 '[All John's<sub>i</sub> children]<sub>j</sub> saw him<sub>i,k</sub>.'

Compare a passive gloss for the inverse construction in (70):

- (73) [all John's<sub>i</sub> children]<sub>j</sub>, he<sub>k</sub> was seen by them<sub>j</sub>.  
 FOCUS Adjunct Topic Focus

The passive gloss points up the fact that the patient argument of the inverse verb is the topic. Although the complex possessive NP is higher on the tree than the weak pronouns, it cannot provide discourse antecedents for both of them. It is necessarily an adjunct to one of the verbal arguments, and use of the inverse marks the complex POSS NP as disjoint in reference with the topicalized patient of the following verb sentence. The inverse cannot treat the two arguments of the POSS NP as it would the two pronominal arguments introduced at functional projections in an adjoined clause. POSS NPs have internal arguments, but unlike clauses, they do not have topics—and the inverse marks a switch in the mapping between grammatical relations and topic/focus structure.

It follows from the generalization in (71) that anaphora involving third-person arguments in “picture nouns” in Navajo is excluded. In “psych” verb constructions in Navajo, the Experiencer is typically a postpositional object (Jelinek and Willie, 1996). A sentence corresponding to:

- (74) a. [*Pictures of John*<sub>i</sub>]<sub>j</sub> please him<sub>j</sub>.  
 b. [*Pictures of himself*<sub>i</sub>]<sub>j</sub> please John<sub>j</sub>.

would be expressed as a complex event.

- (75) *Jáan* 'abi'diilkeed=go *bił* *nizhóní*  
 John 3-PASS-pictured=COMP 3-with 3-good  
 'When John<sub>i</sub> is photographed, it pleases him<sub>i,j</sub>.'

There are no simple nouns corresponding to ‘picture’ or ‘photograph’. Since the first clause in (75) is an intransitive, the direct/inverse alternation cannot apply, and reference of the Experiencer postpositional object *bi-* is not fixed (this is an intransitive clause, and *bi-* does not mark the inverse here). The deictic “fourth” person can be used to force coreference.

- (76) 'aho'diilkeed=go *hwił* *nizhóní*  
 4-PASS-pictured=COMP 4-with 3-good  
 'When that person<sub>i</sub> is photographed, it pleases that person<sub>i</sub>.'

The fourth person in Navajo, like first and second, cannot enter into the direct/inverse alternation, and is employed in a variety of discourse contexts. It is often used as an impersonal, and does not ordinarily cooccur with an NP, but may do so in certain construction types that resolve ambiguities or force coreference. The fourth can be used in this way with complex possessive NPs:

- (77) *Jáan t'áá 'áitsoní ha-'áitchíní dahoołtsá*  
 John just all 4POSS-children PL-4ACC-3NOM-saw  
 'John<sub>i</sub>, just all that person's<sub>i</sub> children<sub>j</sub> saw that person<sub>i</sub>.]'  
 (All John's<sub>i</sub> children<sub>j</sub> saw him<sub>i</sub>.)

The fourth-person pronouns, both subject and object, are exclusively definite and refer primarily to humans, as with the *bi*-pronoun.<sup>4</sup>

## 11.5 Reflexives and Reciprocals

Anaphors that are bound within the verb-sentence in Navajo appear in the verb prefix array. They are invariant as to person or number, and the resulting inflected verb is overtly marked intransitive by the use of the *d-* or *l-*classifier. There are no independent pronouns or nominals that are coreferent with a reflexive or reciprocal that may be adjoined to the sentence—that is, there are no free-standing 'self' or 'each other' forms. Any constituents of this kind would be blocked by the case filter, since the verb is morphologically intransitive.

### 11.5.1 Reflexives

The reflexive prefix *'adi-* can occur with both singular and plural subjects. The following examples show the contrast between forms with a third person object and a reflexive.

- (78) a. *yoolóós*  
 3ACC-3NOM-guide  
 'He is guiding it.' (Transitive)
- b. *na'ádidlóós*  
 around-REFL-3NOM-guide  
 'He is guiding himself around.' (Intransitive)  
 (as with a blind person feeling his way)

The *d-* classifier is overt in (78b), the intransitive form.

### 11.5.2 Reciprocals

When the reciprocal anaphor *'ahi-* is used, the subject is necessarily two or more in number.

- (79) *'ahiidleesh*  
 RECIP-1d1NOM-painting  
 'We two are painting each other.'

Since the reflexive and reciprocal prefixes derive intransitive constructions, Navajo has no way to place contrastive focus on the incorporated "self" argument. Adding a freestanding pronoun simply places focus on the agent, which is of course coreferent.

- (80) *t'áá shí 'ádéshgish*  
 just I REFL-1sNOM-cut  
 'I'm the one who cut myself/me.' (Intransitive)  
 [\*I cut myself/me]

### 11.5.3 Logophoric Anaphors

Reflexive or reciprocal possessors may appear as arguments of nominals in the preverbal focus position. Examples from Young and Morgan (1987):

- (81) *'ádáyi'* *ni'sétsi*  
 REFL POSS-throat-in around-1sNOM-poked  
 'I swabbed my [self's] throat.'  
 [I poked around in my throat]

A reciprocal with a first-person dual subject:

- (82) *'alkék'eh* *yiiltsá*  
 RECIP POSS-foot way 3ACC-1d1NOM-saw  
 'We saw each other's footprints [path].'

In (83), with all third-person arguments, the higher, leftmost nominal is the antecedent for a reciprocal possessive pronoun in the focus nominal.

- (83) *tsídi* *'ahitsiits'iin* *néniitash*  
 bird RECIP POSS-head 3ACC-3NOM-peck  
 'The birds are pecking each other on the head.'  
 [The birds, each other's heads, they are pecking them.]

These "logophoric" anaphors differ from the true reflexive anaphors given in (78) to (80). Example (81) contains an oblique adjunct. The verbs in (82) and (83) are transitive, with a third person object; thus, they permit a complex nominal

adjunct containing a possessor argument in the focus position. Young and Morgan note that this construction type is confined primarily to body parts and related items such as clothing and footprints.

Logophoric possessor anaphors pose a number of problems for the binding theory. Partee and Bach (1981) argue that the correct generalization is that pronouns are disallowed, and anaphors required, only when the anaphor and its antecedent are coarguments of the same lexical head. Reinhart and Reuland (1993) and Pollard and Sag (1992) come to the same conclusions concerning the problems raised by anaphors that appear to be exempt from Principle A—that is, do not require a local binder. These problem cases, including anaphors in “picture” NPs, and possessor reciprocals, they classify as logophoric anaphors, which need only to have a discourse antecedent, and do not require to be A-bound, as in the following:

- (84) *John was furious.*  
*The picture of himself in the museum had been mutilated.*

Consider the following example from Japanese, where the suffix *-wa* marks a constituent as a topic. In double topic constructions, it is possible to have a logophoric anaphor in the “lower” topic.

- (85) *Sakenomi-tachi-wa otagaino kuruma-wa dameni shita.*  
 drunkards-TOP each other's cars-TOP wrecked  
 (Speaking of) the drunkards, (as for) each other's cars, they wrecked them.

The possessor pronouns in the Navajo examples in (81) to (83) are not arguments of the verb, but of the nominal. Their syntax is consistent with that of the class of anaphors across languages that require only discourse antecedents. The Navajo reflexives that are A-bound are incorporated into the verb-sentence, like the other pronominal arguments.

## 11.6 Summary on Nominal Adjuncts and Focus in Navajo

We have considered the following lines of evidence bearing on the claim that nominals in Navajo are not in A-positions but are adjuncts ordered according to the focus structure of the complex sentence:

- (86) a. Adjoined clauses provide discourse antecedents for weak pronouns in the following main clause.



- b. Independent "strong" pronouns can appear in the focus position immediately preceding the verb-sentence, whatever the grammatical relation of the coindexed Pronominal Argument.
- c. Coindexing in the direct/inverse is focus-to-focus, both with simple nominals and adjoined clauses.
- d. Optional focus movement of Wh-words produces a word order that does not correspond to putative grammatical relations.
- e. True reflexive/reciprocals are A-bound within the verb-sentence.
- f. Lexical semantic features of verbs and nominals place constraints on plausible construals.

These features provide evidence that Navajo is a Pronominal Argument language, where nominals are ordered according to topic/focus structure.

### 11.7 Adverbial Quantification in Navajo

Some recent work on quantification in natural language (Bach et al. 1995, Jelinek 1995a) demonstrates an association between quantifier type (determiner versus adverbial) and argument type across languages. In Navajo, weak quantifiers appear as predicates.

- (87) *táá' niilt'é*  
 three IpNOM-be  
 'We are three (in number).'

Strong quantifiers are unselective adverbials (Lewis 1975).

- (88) *'altso 'iishíí'*  
 all [*'a-*]-1s-dyed black  
 'I finished dyeing (black).' (Activity complete)

The verb in example (88) includes underlyingly the prefix *'a-*, said to mark an indefinite object. This prefix derives an intransitive construction which describes an activity, an "anti-passive" form that excludes a referential object. In contrast, example (89) contains a third-person object pronoun.

- (89) *'altso yiishíí'*  
 all 3-1s-dyed black  
 'I finished dyeing it/them black.'  
 Or: 'I dyed all of it/them black.'

These examples illustrate the variable scope of the adverbial quantifier.

In (88), the activity construction, there is no object pronoun that the quantifier may have scope over; it takes scope over the action (scalar interpretation). In (89), the quantifier may have scope over either the action or over the object argument. Faltz (1995) argues that Navajo quantifiers are “floating”—that is, not in construction with nouns, and constituting adjuncts in their own right.

For example (70), the preverbal string containing the quantifier can be construed as one or two complex nominals. Example (90) shows the one nominal construal that we have been looking at above. Example (91) shows the reading with two nominals.

- (90) [t'áá 'altso Jáan ba-'átchíní ] dabiiltsá  
 [just all John 3POSS-children] PL-3ACC-3NOM-saw  
 Focus Adjunct Topic-Focus-V  
 'He<sub>k</sub> was seen by [all John's<sub>i</sub> children]<sub>j</sub>.'

- (91) [t'áá 'altso ] [Jáan ba-'átchíní ] dabiiltsá  
 [just all ] [John 3POSS-children] PL-3ACC-3NOM-saw  
 Topic Adjunct Focus Adjunct Topic-Focus-V  
 'They all<sub>k</sub> were seen by [John's<sub>i</sub> children]<sub>j</sub>.'

When the string is interpreted as two nominals, the first is an adjunct to the topicalized patient, as in (91). If the quantifier is immediately before the verb-sentence, a different reading is possible.

- (92) [Jáan ba-'átchíní ] [t'áá 'altso ] dabiiltsá  
 [John 3POSS-children] [just all ] PL-3ACC-3NOM INV  
 Topic Adjunct Focus Adjunct T-F-V  
 '[John's<sub>i</sub> children]<sub>j</sub> were seen by all of them<sub>k</sub>.'  
 (They all<sub>k</sub> saw John's<sub>i</sub> children<sub>j</sub>.)

Related ambiguities arise with the direct forms.

Determiner quantification is absent in Navajo. Determiner quantification in lexical argument languages such as English precludes the ambiguity in quantifier scope seen in Navajo, but requires the presence of syntactic constituents (NPs) that do not correspond to the constituent structure of the associated tripartite semantic structure; NPs with a determiner quantifier contain both the quantifier and the restriction on that quantifier. This association between quantifier type and argument type has been claimed to be present in Straits Salish, Navajo, Mohawk, and Asurini do Trocara (Bach et al. 1995). Whether this association holds generally across languages is an empirical question yet to be answered.

## 11.8 Concluding Remarks

Baker (1996) argues that the “macro-parameter” underlying polysynthesis is the requirement that every theta role of a head be related to a morpheme in the word containing that head. The goal here has been to go beyond stating that the presence of weak pronouns in INFL in Navajo is obligatory. We identify these pronominal arguments as discourse anaphors and show how they fit into the topic/focus articulation of the Navajo clause. We have argued that “polysynthetic” or more generally Pronominal Argument languages—a class that includes languages with AUX or INFL clitic strings, such as Warlpiri and Straits Salish—are discourse configurational languages.<sup>5</sup> We do not assume that the weak pronouns undergo movement to their argument positions in INFL, but that they are base generated at the functional projections where their case is checked. In contrast, nominals have no grammatical or direct case and are excluded from the subject and object argument positions introduced at the functional projections.

For many polysynthetic languages, word order is said to be “free”; what is meant by “free” is that nominals are not ordered according to grammatical relations. A summary of the evidence on Navajo as a discourse configurational language was given in (86). If two disjoint nominals appear in a transitive sentence in Navajo, the first is in the topic position and the second is in the focus position. The direct/inverse voice alternation always coindexes focus-to-focus, but in the inverse clause, there is a switch in the mapping between grammatical relation and focus structure. In early transformational treatments of Navajo syntax, the inverse was called “subject/object inversion.”

- (93) a. 'ashkii 'at'ééd yizts'qs  
 boy girl 3ACC-3NOM-kissed (Direct)  
 'The boy kissed the girl.'
- b. 'ashkii at'ééd bizts'qs  
 boy girl 3ACC-3NOM-kissed (Inverse)  
 'The girl kissed the boy.'

The problem here is that the glosses given are inadequate. We know the truth conditions, we know who got kissed, but we don't know how to use (93b) appropriately in context. More accurate glosses would be:

- (94) a. 'ashkii 'at'ééd yizts'qs  
 boy girl 3ACC-3NOM-kissed (Direct)  
 'The boy kissed the girl.'
- b. 'ashkii at'ééd bizts'qs  
 boy girl 3ACC-3NOM-kissed (Inverse)  
 'The girl kissed the boy.' (Krifka's example)

There is a change in the topic/focus structure of the verb-sentence from (94a) to (94b). The patient (*bi-*) is the backgrounded topic in (94b). This produces a switch in the coindexing of nominals, which always appear in topic, focus order.

Navajo differs from some Northern Athabaskan languages, where NPs are in argument positions. Dogrib (Saxon 1984) and Slave (Rice 1989) have incorporated object pronouns which are mutually exclusive with all object NPs, definite or indefinite. There are cognates of the *yi-/bi-* object pronouns in these languages; however, their function and distribution varies along with argument structure (Saxon and Rice 1992, Thompson 1996). In Babine-Witsuwit'en, object clitics are excluded only with *indefinite* object NPs (Gunlogson 1995). This is reminiscent of the situation in Spanish or Arabic. These Canadian Athabaskan languages have determiner quantification, while Southern Athabaskan does not.

There are language universal links between grammatical relations and topic/focus structure that underlie correspondences and parametric variation of this kind across languages. In the default topic/focus articulation of the clause in universal grammar, subjects are typically old information that is presuppositional and backgrounded. In contrast, objects are part of the focus, the new information, either as indefinites or as definites that are "new" in the context (Diesing 1992). In languages with subject agreement, familiar subjects can be adequately identified by their phi-features, and we see "pro-drop." There is less discourse motivation for dropping objects, part of the new information, than in "subject drop." Some languages permit the dropping of object NPs in lexical contexts where they are largely predictable, as in cognate object constructions. Diesing and Jelinek (1995) argue that pronouns are presuppositional elements that must be raised out of the VP before logical form, in order to avoid a type mismatch. Pronominal Arguments are a syntactic option that a language may select in order to place pronouns at functional projections in INFL, so that the distribution of pronouns in the overt syntax corresponds to positions that they must assume by LF.

If word order differences are employed exclusively to show the topic/focus articulation of the clause, then grammatical relations must be marked in a different component of the grammar—via the case-marked pronominal arguments. A system with weak pronouns in A-positions co-occurring with nominal adjuncts which are ordered according to the topic/focus structure of the clause produces a certain amount of redundancy. Compare the situation in Czech and Hungarian. In these languages, nominals are in A-positions, as shown by their overt case marking, but they "scramble" or are reordered to reflect topic/focus relations. There is subject agreement and object clitics. In such a grammar, there is no need for incorporated weak pronouns, since case marking on the arguments suffices to identify grammatical relations.

The redundancy seen in pronominal argument languages is the price paid for using word order exclusively to mark focus and backgrounding. This "dual representation," the presence of coindexed pronouns and nominals, has been claimed to be simply an areal feature. However, pronominal argument systems

appear in many language areas and show features that can be accounted for in terms of a particular grammaticalization of topic/focus structure.

## Notes

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1. Speas (1990) analyzes this coreference in complex sentences in Navajo as parallel processing and attributes it to universal principles of discourse anaphora.

2. In contexts where the voice alternation is excluded, *bi-* is the ordinary object and possessor pronoun.

3. We thank Ken Hale (personal communication) for drawing our attention to the problem posed by sentences like example (71).

4. Willie (1991) gives an extended treatment of the syntax and discourse functions of the fourth person in Navajo.

5. The term "head-marking," as we understand it, also does not include second-position clitic strings.

## References

- Bach, Emmon, Eloise Jelinek, Angelika Kratzer, and Barbara Partee (eds.). 1995. *Quantification in Natural Languages*. Dordrecht: Kluwer.
- Baker, Mark. 1996. *The Polysynthesis Parameter*. New York: Oxford University Press.
- Bresnan, Joan and Sam Mchombo. 1987. Topic, Pronoun and Agreement in Chichewa. *Language* 63:741-82.
- Charles, Al, Richard Demers, and Elizabeth Bowman. 1978. Introduction to the Lummi Language. Unpublished manuscript. University of Arizona.
- Diesing, Molly. 1992. *Indefinites*. Cambridge, Mass.: MIT Press.
- Diesing, Molly, and Eloise Jelinek. 1995. Distributing Arguments. *Natural Language Semantics* 3:123-176.
- Escalante, F. 1990. Voice and Argument Structure in Yaqui. Ph.D. dissertation, University of Arizona, Tucson.
- Faltz, Leonard 1995. Towards a Typology of Natural Logic. In Bach et al. (eds.).
- Gunlogson, Christine. 1995. Pronominal Prefixes in Babine-Witsuwit'en. Master's thesis, University of Washington.
- Hajičova, Eva, Barbara Partee, and Petr Sgall. 1995. Topic-Focus Articulation, Tripartite Structures, and Semantic Content. Unpublished manuscript. Charles University, Prague.
- Hale, Kenneth. 1973a. The Adjoined Relative Clause in Australia. In R. M. W. Dixon (ed.), *Grammatical Categories in Australian Languages*, N.J.: Humanities Press.
- Hale, Kenneth. 1973b. A Note on Subject-Object Inversion in Navajo. In B. Kachru et al. (eds.), *Issues in Linguistics: Papers in Honor of Henry and Renee Kahane*, 300-309. Chicago: University of Chicago Press.

- Hale, Kenneth. 1983. Warlpiri and the Grammar of Non-Configurational Languages. *Natural Language and Linguistic Theory* 1:5–47.
- Hale, Kenneth, and Ellavina Perkins. 1976. *The Structure of Navajo: Course Notes*. Tucson: University of Arizona.
- Jelinek, Eloise. 1984. Empty Categories, Case, and Configurationality. *Natural Language and Linguistic Theory* 2:39–76.
- Jelinek, Eloise. 1989. Argument Type in Athapaskan: Evidence from Noun Incorporation. Paper presented at the AAA-CAIL, Washington, DC.
- Jelinek, Eloise. 1995a. Quantification in Straits Salish. In Bach et al. (eds.).
- Jelinek, Eloise. 1995b. Pronoun Classes and Focus. Paper presented at the Workshop on Focus, University of Massachusetts, Amherst.
- Jelinek, Eloise. In press. Agreement, Clitics and Focus in Egyptian Arabic. In Ur Shlonsky and Jamal Ouhalla (eds.), *Studies in Semitic Syntax*.
- Jelinek, Eloise, and Fernando Escalante. 1991. Focus and clitics in Yaqui. Paper presented at the Uto-Aztecan Conference, University of California, Santa Cruz.
- Jelinek, Eloise, and MaryAnn Willie. 1996. Psych Verbs in Navajo. In Jelinek, Eloise, Sally Midgette, Keren Rice, and Leslie Saxon (eds.), *Athabaskan Language Studies: Essays in Honor of Robert Young*, Albuquerque: University of New Mexico Press, 15–34.
- Kiss, Katalin E. Identificational vs. Information Focus. *Language* 74:245–273.
- Krifka, Manfred. 1991. A Compositional Semantics for Multiple Focus Constructions. In S. Moore and A. Wyner (eds.), *Proceedings from Semantics and Linguistic Theory I*, (Cornell Working Papers in Linguistics, No. 10), 127–158.
- Lewis, David. 1975. Adverbs of Quantification. In E. L. Keenan (ed.), *Formal Semantics of Natural Language*, Cambridge: Cambridge University Press.
- Lipkind, W. 1945. *Winnebago Grammar*. New York: King's Crown Press.
- McDonough, Joyce. 1990. Topics in the Phonology and Morphology of Navajo. Ph.D. dissertation, University of Massachusetts, Amherst.
- Partee, Barbara. 1987. Noun Phrase Interpretation and Type-Shifting Principles. In J. Groenendijk, D. de Jongh, and M. Stokhof, eds., *Studies in Discourse Representation and the Theory of Generalized Quantifiers*, GRASS 8, Foris Dordrecht.
- Partee, Barbara. 1991. Topic, Focus and Quantification. In S. Moore and A. Wyner, eds, *Proceedings from Semantics and Linguistic Theory I*, (Cornell Working Papers in Linguistics, No. 10), 159–188.
- Partee, Barbara, and Emmon Bach. 1981. Quantification, Pronouns, and VP-Anaphora. In J. Groenendijk, T. Janssen, and M. Stokhof (eds.), *Formal Methods in the Study of Language*. Mathematisch Centrum. Amsterdam University.
- Perkins, Ellavina. 1978. The Role of Word Order and Scope in the Interpretation of Navajo Sentences. Ph.D. dissertation, University of Arizona, Tucson.
- Pesetsky, David. 1987. Binding Problems with Experiencer Verbs. *Linguistic Inquiry* 18:126–140.
- Platero, Paul. 1974. The Navajo Relative Clause. *International Journal of American Linguistics* 40: 202–246.
- Pollard, Carl, and Ivan Sag. 1992: Anaphors in English and the Scope of the Binding Theory. *Linguistic Inquiry* 23(2):261–304.
- Reinhart, Tanya, and Eric Reuland. 1993. "Reflexivity" *Linguistic Inquiry* 24:657–720.
- Rice, Keren. 1989. *A Grammar of Slave*. Berlin: Mouton de Gruyter.

- Saxon, Leslie. 1984. Dogrib Pronouns. Ph.D. dissertation, University of California, San Diego.
- Speas, Margaret. 1990. *Phrase Structure in Natural Language. Studies in Natural Language and Linguistic Theory*. Dordrecht: Kluwer.
- Thompson, Chad. 1996. The History and Function of the *yi-/bi-* Alternation in Athabaskan. In Jelinek, Eloise, Sally Midgette, Keren Rice, and Leslie Saxon (eds.), *Athabaskan Language Studies: Essays in Honor of Robert Young*, Albuquerque: University of New Mexico Press, 81-100.
- Willie, MaryAnn. 1991. Navajo Pronouns and Obviation. Ph.D. dissertation, University of Arizona, Tucson.
- Young, Robert, and William Morgan. 1987. *The Navajo Language: A Grammar And Colloquial Dictionary*, Revised edition, Albuquerque, N.M.: University of New Mexico Press.

**I.5 Jelinek, Eloise (2006) The pronominal argument parameter. In Peter Ackema (ed) *Arguments and Agreement*. Oxford Oxford University Press. pp 261-288**

This paper argues for a distinction between the set of pro-drop languages in the world and the subset of those languages that are pronominal argument (PA) languages. In particular it presents 3 syntactic characteristics that differentiate PA languages from pro-drop languages: (1) The absence of pro-drop agreement/syntax in PA languages (2) DPs in PA languages may only be marked with lexical, not grammatical, Case and (3) PA languages totally lack determiner quantification effects. It concludes by pointing out that the 3 syntactic characteristics of PA languages are bundled together and occur in a wide range of genetically unrelated languages: This is taken as conclusive evidence for a PA parameter.



# The Pronominal Argument Parameter

ELOISE JELINEK

## 9.1 Introduction: defining the parameter

The goal of this chapter is to distinguish a class of Pronominal Argument (PA) languages from the larger class of pro-drop languages. There is considerable typological variation across languages with respect to the distribution of subject and object agreement and clitics (Alexiadou, Chapter 5 above; Alexiadou and Anagnostopoulou 1998: 493–5). One variety is found in Egyptian Arabic, where the verb agrees in person and number with the subject, permitting pro-drop of subject NPs.

- |     |    |                     |    |               |
|-----|----|---------------------|----|---------------|
| (1) | a. | il-walad daras      | b. | daras         |
|     |    | DET-boy 3ms:studied |    | 3ms:studied   |
|     |    | 'The boy studied'   |    | 'He studied.' |

Subject NPs never occur without agreement but may be omitted in context, when definite and familiar. There is no object agreement; object clitics alternate with full DPs in object positions.

I dedicate this chapter to the memory of Ken Hale, his contributions to linguistic theory, and his work to preserve minority languages. Earlier versions of some of the material here are presented in Hale et al. (2003). I thank the members of the organizational committee for the Workshop on Agreement in Argument Structure held at the University of Utrecht in 2001—Peter Ackema, Patrick Brandt, Maaïke Schoorlemmer, and Fred Weerman—for inviting me to the workshop, and for their kind hospitality. This chapter could not have been written without the help of Mary Willie. I am grateful to Mark Baker, David Basilico, Andrew Carnie, Richard Demers, Helen de Hoop, Barbara Partee, Montserrat Sanz, Elly van Gelderen, Robert Young, and particularly Andrew Barss and Heidi Harley, for their help and counsel. I thank the anonymous reviewers for this volume for their very helpful comments.

- |                                                                                 |                                                             |
|---------------------------------------------------------------------------------|-------------------------------------------------------------|
| (2) a. šuft-aha<br>1sg:saw-3fsg<br>'I saw her'                                  | d. šuft bint<br>1sg:saw girl<br>'I saw a girl'              |
| b. šuft il-bint<br>1sg:saw DET girl<br>'I saw the girl'                         | e. *šuft-aha bint<br>1sg:saw-3fsg girl<br>*'I saw her girl' |
| c. šuft-aha, il-bint<br>1sg:saw-3fs DET girl<br>'I saw her, the girl (that is)' |                                                             |

Examples (2b, d) show that object DPs may occur without coreferent clitics. In this language type, there is a subject–object asymmetry: there is no co-occurrence of object clitics and object DPs, unless the latter are definite, and occur in a kind of ‘afterthought’ adjunct position (2c). The right-adjoined, non-argument DP in this construction type is called an ‘anti-topic’ by Lambrecht (1994: 203).

(3) He’s a nice guy, your brother

There are languages such as Spanish, where there is subject agreement, and object clitics may co-occur with some—but not all—object DPs; an animacy hierarchy plays a role. Other kinds of agreement include that seen in sign languages; Van Gijn and Zwitserlood (Chapter 7 above) show that, in the Sign Language of the Netherlands, it is not the  $\varphi$  features of person and number that play a role in the verbal agreement system, but rather the features of gender and location.

What I want to consider here is yet another parametric type of agreement system. These are languages where there is *no* subject–object asymmetry with respect to agreement, and both subject and object are always represented by some overt pronominal element (either affix or clitic). Coreferent DPs may be present for either argument, but need not be if reference is unambiguous in the context. An example from Navajo:

- (4) a. Yiyiiltsà  
3sObj:3sSubj:saw  
'He saw him'
- b. (Diné) ('ashkii) yiyiiltsà  
man boy 3sObj:3sSubj:saw  
'(The man,) (the boy,) he saw him'

The subject–object pronominal inflection is absolutely necessary for grammaticality, while the adjoined nominals are present only when the speaker

judges that they are needed to establish reference. Either or both DPs may be omitted; the Navajo sentence typically has at most one DP. Thompson (1996: 95) found in a count of sentences in printed material that only one out of a sample of 294 Navajo transitive sentences had more than one DP. Since the pronouns are obligatory for the sentence, while the DPs are not, it is arguable that the former are the arguments, while the latter are topic-like adjuncts. Languages of this type, with *no* DPs in A-positions, are what I have called 'Pronominal Argument' languages (Jelinek 1984: 43–4; 1995: 487–8); and Baker (1996: 21–2; 1995b: 83–9) has designated 'polysynthetic'. Pronominal Argument languages are found in various language families, including Athabaskan, Salish, and Pama-Nyungan. This chapter will focus on data from Navajo (Southern Athabaskan) and Lummi (Straits Salish) to provide evidence in favour of this typological contrast. I present three lines of evidence on the Pronominal Argument parameter—data that demonstrate how this class of languages differs from the class of pro-drop languages.

Navajo and Lummi differ in many important respects. Lummi is a verb-initial language, Navajo is verb-final. Both have inflectional clitic strings where various functional categories are marked. In Lummi these strings are in the 'Wackernagel' second position; in Navajo they are prefixed to the verb at spell-out. The subject and object pronouns are included in these inflectional strings. A major feature of inflectional elements in Pronominal Argument languages is that they are *all* backgrounded and discourse-anaphoric; in order to emphasize a semantic feature in the domain of tense/aspect or modality, it is necessary to use a 'periphrastic' expression, a lexical item that can be focused. In Lexical Argument (LA) languages, on the other hand, both pronouns and DPs serve as arguments, and any constituent can be given focus via intonation—'light' verbs or auxiliaries, modals, even some affixes, can have contrastive stress (*RE-copy*, *UN-tie*). If there are any DPs at all in A-positions, then the language does not fall into the Pronominal Argument category.

Neither Lummi nor Navajo shows noun incorporation; since there are no NPs in object position, it is impossible for DPs to move from this position to the verb. Both these languages have a small closed list of noun roots (typically referring to body parts etc.) that may take part in complex verb formation. In Lummi grammar they are termed 'lexical suffixes', and often do not correspond morphologically to a semantically equivalent free root. In Navajo they are even more limited (see Hale et al., 2003). In contrast, some pro-drop languages—those that have both object clitics and object DPs in alternation—do show Noun Incorporation.

I propose that this parametric contrast has to do with the nature of the mapping between argument structure and information structure—the

organization of old versus new information in the clause in these languages. Old information is topical; new information has focus.<sup>1</sup> In Pronominal Argument languages, morphosyntactic status directly reflects information status: pronouns are topical, unstressed discourse anaphors referring back to a referent earlier in the clause or in the discourse. New information is presented in the form of lexical items—predicates or DPs that carry inherent focus and stress. Consider the following construction:

- (5) Niiłtsá (Navajo)  
 1sgObj-1sSUBJ-saw  
 'I saw you'

In this sentence, the affixed pronouns are both familiar and topical; both are backgrounded and unstressed as old information. In a comparable construction in English, either pronoun may be stressed.

- (6) a. *I* saw you  
 b. I saw *you*

How do languages like Lummi and Navajo solve the problem of placing focus on a pronominal argument? The only way to produce the equivalent of (6a, b) in Navajo is to add a freestanding contrastive focus pronoun in an A-bar position preceding the verb sentence, as shown in (7). These pronouns always carry a contrastive reading.

- (7) a. Shí niiłtsá  
 'I, I saw you'  
 b. Ni niiłtsá  
 'You, I saw you'

Note that the inflected verb, with its arguments, does not change when a contrastive independent pronoun is present. It is impossible to produce a verb without its full complement of arguments, inflectional affixes, in Navajo. Focus can be added to an argument only via a Contrastive Focus element. This is the core difference between Pronominal Argument languages and Lexical Argument languages; in a PA language the verb complex always

<sup>1</sup> The terms 'topic' and 'focus' have been used with reference to the information structure of the sentence, as in work by Diesing (1992: 49–53), Hajičová et al. (1998: 102–21), and numerous others. In this tradition, that part of the sentence that is familiar and presuppositional is classed as topical, established in the discourse, while what is new information in the context of the sentence belongs to the focus. Basilico (1998) extends the thematic/categorical contrast to the topicalization of goal arguments within the object array in dative movement.

represents a complete predicate/argument complex, with backgrounded, unstressed pronominal arguments—old information—while the verb stem itself is new information. In contrast, in an LA language such as English, verbs appear without affixed arguments and a pronoun may freely receive contrastive intonation. Intonation is not used to mark argument focus in PA languages. Affixed pronouns are always backgrounded, and lexical roots have normal (default) focus.

Compare the situation in Spanish. Spanish has subject agreement with pro-drop, and object clitics. Independent subject pronouns can be added to the subject-inflected verb to add emphasis, along with stress on the independent pronoun.

- (8) a. Te ví  
       you:OBJ I-saw  
       b. Yo te ví  
           I you:OBJ I-saw  
           ‘I saw you’       (contrastive focus on the subject)

In order to place contrastive focus on the object pronoun, however, it is necessary to add an oblique, *non-argumental* contrastive object phrase:

- (9) c. Te       ví     a tí  
       you:OBJ I-saw (OBL) you  
       ‘I saw you’

Where there is an inanimate DP object, it is impossible to use a coreferent object clitic:

- (10) Léí el mensaje (\*Lo léí el mensaje)  
       ‘I read the message’

PA languages differ in using the ‘add-on’ adjunct strategy to mark contrastive focus with *all* subjects and objects, since the pronominal inflection is always present.

Information structure is a feature of universal grammar; all languages have some means of marking this level of the interpretation of the sentence. Chomsky (2001b) gives Topic and Focus syntactic status as functional projections. In PA languages, DP adjuncts appear at Topic/Focus operator positions, while the pronouns appear at functional projections associated with the subject and object cases.

In LA languages, information structure contrasts are largely expressed in intonation contrasts, and traditionally have been set aside as ‘post-syntactic’. In PA languages the mapping between argument structure and Topic/Focus

articulation is expressed in the morphosyntax, not by intonation. In this chapter, I present three lines of evidence on the PA parameter—data that demonstrate how this class of languages differs from the class of pro-drop languages. These are:

1. *The absence of pro-drop.* PA languages completely lack the agreement relation, involving subadjacency, that licenses pro-drop. Affixed pronouns serve as arguments, and contrastive pronouns and DPs are syntactic adjuncts to the predicate/argument complex. These adjuncts need not occur next to the pronouns.
2. *Contrasts in case marking.* PA languages have distinct sets of case options available to pronouns, on the one hand, versus 'full' DPs, on the other (Jelinek 1998: 339–41; 2000b: 53). The pronouns have the kinds of grammatical case that appears on direct arguments. In contrast, DPs cannot carry grammatical case; they may appear with a lexical case, as oblique objects of prepositions or case particles. DPs in PA languages may also be case-less predicate nouns or topical adjuncts.
3. *The absence of determiner quantification.* PA languages completely lack determiner quantification, which functions to fix quantifier scope to an A-position. Since PA languages have no DP in (direct) A-positions, they rely upon adverbial quantification exclusively. Furthermore, the default reading of nominals in these languages is definite; only in a few marked contexts are indefinite readings possible. Since the restriction on a determiner quantifier is stated in a simple indefinite noun, these quantifiers are excluded in PA languages.

Let us begin with a consideration of the question of pro-drop.

## 9.2 The absence of agreement and pro-drop in Pronominal Argument languages

We will see that, while there are some syntactic agreement relations in these languages, we do not find the kind of relation between terms generally recognized as agreement, where there are matching  $\phi$  features between constituents in a subadjacency relation. In these languages, there are no independent pronouns that perform this function. In Lummi, there are no freestanding pronouns that match the pronominal arguments in the  $\phi$  feature of person. In Navajo there is only the set of contrastive focus pronouns that are limited to A-bar positions. Let us first review argument structure in Lummi.

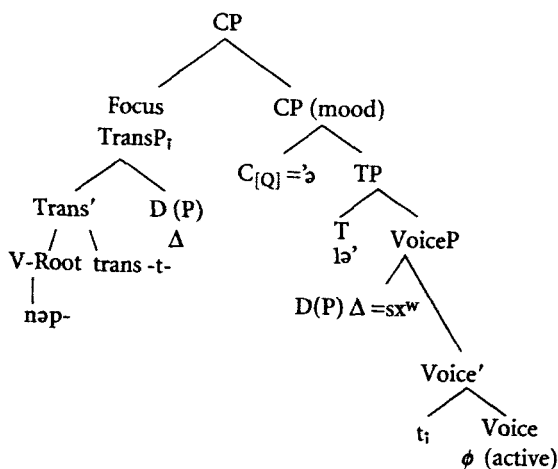


marked as to valence by one of a small closed set of transitivizers (a 'light' verb) at a functional projection where transitive and intransitive constructions are derived. The transitivizer licenses object suffixes. These object suffixes are incorporated into the verb and, according to phonological rules, may sometimes carry the main word stress. There are no freestanding subject or object pronouns that agree in person with these pronominal arguments. Examples:

- (13) a. Nəp-t-ɔŋəs=sx<sup>w</sup>  
 advise-TRANS-1sgACC=2sgNOM  
 'You advise me'  
 b. Nəp-t-ɔŋəl=sx<sup>w</sup>  
 advise-TRANS-1plACC=2sgNOM  
 'You advise us'

In these examples, the main stress of the sentence is on the complex predicate word, including the object pronoun, while the subject is unstressed. This is consistent with the information status of these pronouns: the object is included in the predicate, which is the new information that constitutes the focus; the subject is topical and backgrounded. The predicate (Root + Transitivizer + Object, if any) in a Lummi sentence raises to a Focus position at the head of the clause, in COMP. It is followed by the INFL clitic string, which may include an overt mood marker.

(14)



Nəp-t-0=ʔ=lə'=sx<sup>w</sup>?  
 advise-TRANS-3ABS=Q=PAST=2sNOM  
 'Did you advise him?'



The absolutive, by definition, refers either to an intransitive subject (11e) or to a transitive object (14). There is a case 'split' in Lummi, of the most commonly seen variety: first and second person (the speech act participants) are NOM/ACC, while third person is ERG/ABS (Jelinek 1993). The third-person ERG argument is phonologically overt (-s):

- (15) Nəp-t-s=lə'=0  
 advise-TRANS-3ERG=PAST=3ABS  
 'He advised him' (definite third-person pronominal arguments)

There is a person hierarchy in Lummi. The case split and person hierarchy make it possible for both ACC and ERG to be morphologically internal arguments, suffixed to the verb—note that the ERG argument, like the object suffixes, precedes the tense clitic—and Lummi permits only one internal argument in a transitive sentence. (As we will see, there are no ditransitive constructions.) Therefore, it is impossible to have a construction of the type seen in (16a), where both an ACC and an ERG argument are present, in either order:

- (16) a. \*Nəp-t-s-əŋəł (or: \*nəp-t-əŋəł-s)  
 [\*he advises us]  
 b. Nəp-t-ŋ=ooŋəł  
 advise-TRANS-PASSIVE=1plNOM  
 'We are advised'

Constructions like (16a) are excluded. It is necessary to use the Passive (16b) as an approximate equivalent.

DPs, optional additions to the clause in adjunct positions, may be added only to clauses that contain an ABS or ERG pronoun.

- (17) Ye'=lə'=0                      cə      si'em  
 go=PAST=3ABS                    DET    elder  
 'He left, the elder'

In transitive sentences, two DPs may be added; however, there is ambiguity, indicating that neither DP is in an A-position. They are adjuncts, anti-topics.

- (18) Nəp-t-s=lə'=0                                      cə si'em      cə nə-men  
 advise-TR-3ERG= PAST=3ABS    DET elder    DET my-father  
 'He advised him, the elder, my father'  
 'My father advised the elder' or 'The elder advised my father'

Some Straits languages (e.g. Lushootseed) permit only one DP adjunct to transitive sentences. All Straits Salish languages show ambiguity when two DP

adjuncts are present. In the feature of free word order for any DP adjuncts, the Straits Salish languages may be termed 'non-configurational'.

Without matching freestanding pronouns, there can be no agreement or pro-drop in Lummi. The affixes and clitics are simply incorporated arguments. One could invoke a full set of null subject and object pronouns just in order to 'pro-drop' them—pronouns that would never be visible in any environment—but we would have no evidence on their putative order in the clause, in addition to the other problems raised by such a move.

### 9.2.2 *The contrastive focus demonstratives*

If Pronominal Arguments in Lummi are necessarily backgrounded, how is focus placed on an argument? Lummi solves this problem in an interesting way, which provides evidence in support of the PA parameter. Like all the Salish languages, Lummi is rich in lexical roots that mark various deictic features such as position in time and space. There is a set of demonstrative lexical roots that mark the semantic features of person, which do not carry the grammatical  $\varphi$  feature of person. Significantly, they are *third-person* in syntax, and have inherent focus, like other deictic roots. We may call them pronouns, if we keep in mind that they do not have the grammatical feature of person, only the lexical feature.

|      |        |       |           |          |
|------|--------|-------|-----------|----------|
| (19) | Person | 1     | 2         | 3        |
|      | SG     | 'əs   | nəkʷə     | niʔ      |
|      | PL     | ni,əʔ | nəkʷiliyə | nəniʔiyə |

These words are comparable to deictic expressions like *the former* and *the latter*, which also have inherent focus (Diesing and Jelinek 1995: 170). Like all other roots, they appear either (1) in clause-initial position, to form a clausal predicate followed by the clitic string, or (2) under the scope of a determiner, to form DPs. They cannot occur in either subject (clitic) or object (affixal) positions. They occur only in focus constructions and in oblique adjuncts. Example (20) shows an oblique DP built on a contrastive focus (CF) demonstrative:

|      |                                   |     |       |       |
|------|-----------------------------------|-----|-------|-------|
| (20) | Leŋ-t-ŋ= sɣʷ                      | 'ə  | cə    | 'əs   |
|      | see-TR-PASS=2sNOM                 | OBL | DET:M | BE:ME |
|      | 'You were seen by ME (masculine)' |     |       |       |

The determiner *cə* marks masculine gender. (Gender is not marked in the pronominal affixes and clitics.) Straits Salish employs DPs built on CF demonstratives in constructions requiring first-, second-, or third-person

oblique arguments, as in (20), since the Oblique marker takes scope *only* over Determiner Phrases, producing oblique adjuncts.

Example (21) shows a CF demonstrative,  $nək^wə$  'be you', functioning as a main-clause predicate. This CF demonstrative is followed by an evidential clitic,  $yəx^w$ . There is a null third-person absolutive subject. This clause is followed by a DP with the determiner marked feminine, and the noun *ten* 'mother' preceded by the first-person singular possessive pronoun.

- (21)  $Nək^wə = yəx^w = 0$                        $sə \ nə\text{-}ten$   
 BE:YOU=EVID=3ABS DET:F    1sPOSS-mother  
 'It must be YOU,                      (who are) my mother'

These roots undergo various derivational and inflectional processes.

We have seen that, in non-finite or Subjunctive adjoined subordinate clauses, there is overt third-person subject inflection.

- (22)  $\check{C}te\text{-}t\text{-}\eta = sən$                        $k^wə \ nək^w\text{-}əs$   
 ask-TRANS-PASS=1sNOM    DET    BE:YOU-3SBD SUBJ  
 'I was asked if it was YOU'

- (23)  $X^wən\text{-}\eta$                        $cə \ Bill \ k^wə \ nək^w\text{-}əs$   
 do/act-MIDDLE    DET Bill    DET    BE:YOU-3SBD SUBJ  
 Bill acted for YOU (in your place; acting as you)

Like other lexical roots, they may be transitivized:

- (24)  $Nək^wə\text{-}tx^w = 0$   
 BE:YOU-CAUS:TRANS-3ABS  
 'Make/let it be YOU.' (YOU do it) (Saanich; Montler 1991: 55)

The crucial role of these CF demonstratives is to provide a grammatical mechanism for focusing referents, since the pronominal arguments cannot receive contrastive stress. Compare:

- (25) a.  $Le\eta\text{-}t\text{-}\etaəs = lə' = sən$   
       see-TR-2ACC=PAST=1sNOM  
       'I saw you' (no CF)  
   b.  $Nək^wə = lə' = 0 \ cə \ le\eta\text{-}t\text{-}\eta$   
       BE:YOU=PAST=3ABS DET see-TR-1sSBD  
       'YOU were the one I saw' (CF)  
   c.  $Le\eta\text{-}t\text{-}0 = lə' = sən \ cə \ nək^wə$   
       see-TR-3ABS=PAST=1sNOM DET BE:YOU  
       'I saw the one that was YOU' (CF)

Example (25c) could be used when recognizing someone in a crowd.



Finnish (Vilkuna 1995: 248)) where there is a clause-initial position for contrast. Etxepare (1998: 65–8) argues that Basque has this kind of CF position. Navajo also has this feature, and this sentence-initial CF position is the *only* place where the freestanding pronouns may occur.

- (27) a. Yààłti'                      b. Shí yààłti'  
       1sSubj-spoke                I 1sSubj-spoke  
       'I spoke'                    'I, [I'm the one who] spoke'

The independent contrastive pronouns do not have Case, and may bind any PA that matches in  $\phi$  features. In (27b) the subject argument in an intransitive has contrastive focus. In a transitive sentence, either argument, regardless of grammatical relation, may have contrast.

- (28) a. Shí niisidłąąđ  
       I 2sObj-1sSubj-believed  
       'I, I believed you. (I'm the one who believed you)'  
       b. Ni niisidłąąđ  
       YOU 2sObj-1sSubj-believed  
       'YOU, I believed you (You're the one I believed)'

9.2.3.1 *Navajo contrastive pronouns are not arguments* Evidence for this statement includes the fact that it is impossible to include more than one independent pronoun in a simple sentence. In (29) below, both arguments cannot be given contrastive focus—the two independent pronouns cannot both appear in the sentence-initial position.

- (29) \*Shí ni niisidłąąđ  
       I YOU 2sObj-1sSubj-believed  
       '\*I believed YOU'

We have seen that an independent pronoun must appear first in the clause, in the contrast position, no matter what the grammatical relation of the coreferent pronominal argument. In ditransitives, any argument may be given CF by an independent pronoun. Note that the verb complex following the contrastive pronoun is identical in (30a, b, c), a ditransitive construction where the incorporated PP is leftmost in the complex verb.

- (30) a. Shí nich'i'yíł'aad  
       I 2sg-to-3Obj-1sSubj-sent  
       'I, I am the one who sent him to you'  
       b. Ni nich'i'yíł'aad  
       YOU 2sg-to-3Obj-1sSubj-sent  
       'You, you are the one I sent him to'

- c. B́i nich'i'yí'aad  
 HE 2sg-to-3Obj-1sSubj-sent  
 'He, he's the one I sent to you'

Along with an independent pronoun in the contrastive focus position, a Navajo sentence may contain DP in the topic and focus operator positions.

- (31) a. Sh́i ashkii naaltsoos shich'i' áyíilaa  
 I boy book 1sg-to 3OBJ-3Subj-sent  
 'I, I'm the one, the boy sent the book to me' [*me*]  
 b. \*Ashkii sh́i naaltsoos shich'i' áyíilaa  
 boy I book 1sg-to 3OBJ-3Subj-sent  
 c. \*Ashkii naaltsoos sh́i shich'i' áyíilaa  
 boy book I 1sg-to 3OBJ-3Subj-sent

Examples (31b, c) are excluded. The contrastive pronoun must appear in sentence-initial position, although it is coreferent with the goal argument marked on the dative postposition—*ch'í'* 'to'. (Here the PP is not incorporated.) In (31a) it is the presence of the contrastive pronoun in the sentence-initial position that places focus on the first-person goal; there is no phonological or other focus marking on the PA that is the object of the postposition—the gloss is just marking the interpretation here. I conclude that this is not an agreement relation of the kind that licenses pro-drop, since there is no subjacency relation between the contrastive pronoun and the postpositional object.

The examples in (29–31) provide evidence that the freestanding contrastive pronouns in Navajo, as in Salish, do not occupy A-positions.

9.2.3.2 *DP in the contrastive focus position* There is also a CF particle *ga'* that may be used with a DET P in the sentence-initial CF position.

- (32) At'ééd ga' ashkii naaltsoos bich'i' áyíilaa  
 girl CF boy book 3-to 3OBJ-3Subj-sent  
 'The girl, the boy sent her [*her*] the book'

### 9.3 Case-marking options and 'dative movement'

The second line of evidence on the PA parameter has to do with case assignment. These languages show an interesting distribution of case marking that follows directly from argument type. Since arguments are limited to the morphologically integrated affixes and clitics, and DPs are not (direct)

arguments, we must predict different kinds of case option for PAs and DPs. In languages where both pronouns and 'full' DPs can occupy A-positions, there should be no such difference in case marking. This turns out to be the case. In both Lummi and Navajo (as in all PA languages), case distribution is as follows:

- (33) a. PAs, carry grammatical case, the cases carried by direct arguments.  
 b. Determiner Phrases may carry oblique lexical case, the cases carried by adjuncts, certain prepositional objects and the like.

This contrast constitutes strong evidence for the existence of a typological parameter. In PA languages, animate goals are the crucial case. Lummi and Navajo show a split in the distribution of dative case according to animacy. In effect, we might say that animate goals in these languages undergo 'obligatory dative movement' to the status of direct objects, while inanimate and other non-pronominal goals and destinations do not show 'goal advancement', but appear as obliques. Let us first consider the semantic and syntactic properties of dative movement in universal grammar.

### 9.3.1 *Dative movement*

I use the traditional term 'dative movement' (DM) to refer informally to contrasting sentence pairs of the following kind:

- (34) a. John gave a book to Mary  
 b. John gave Mary a book

In (34a), the goal is syntactically oblique; in (34b) the goal argument, *Mary*, precedes the theme, and there is no oblique marker (the preposition *to* in (34a)). However, it is not always possible to employ DM. Bresnan (1982) and Oehrle (1978) noted the role of animacy in constraints on DM in English:

- (35) a. The lawyer sent a letter to Ellen  
 b. The lawyer sent Ellen a letter  
 (36) a. The lawyer sent a letter to Chicago  
 b. ## The lawyer sent Chicago a letter

While (35b) is fine, (36b) is excluded unless *Chicago* refers to a person or perhaps an institution, a set of people, not a place. Thus, in English only animates can undergo dative movement. Animate goals are typically affected in ways that inanimates are not. Consider the following contexts:

- (37) Q: What happened to Ellen?  
 A: The lawyer sent Ellen a letter

- (38) Q: What happened to Chicago?  
 A: ## The lawyer sent Chicago a letter

In addition, there are other constraints on the Dative in English that appear to be lexical in nature, and less obviously related to animacy. Compare:

- (39) a. They donated a book to the library  
 b. \*They donated the library a book  
 (The goal, *library*, is not affected as an animate would be.)
- (40) a. He whispered a warning to his friend.  
 b. \*He whispered his friend a warning.  
 (The theme, *warning*, is affected by the act of whispering.)

This lexical constraint appears most commonly with verbs of Latinate origin. These verbs have a lexical semantic property in common: they are more specific with regard to the manner of the exchange taking place. The manner of this exchange can imply a particular effect on the theme argument immediately following the verb. Again, goal arguments that do not advance are not significantly affected, as compared to the goal arguments that undergo DM.

Basilico (1998: 542–6) provides an insightful analysis of DM in terms of the relative topicality of the two object arguments. The effect of DM is to make familiar, presuppositional goal arguments ‘topical’ within the object array. Basilico’s analysis puts the ‘advanced’ goal at a transitive functional projection (corresponding to the vP, or VP ‘shell’). Familiar goals are backgrounded with respect to themes, which are in the sentence-final focus position.

In the next sections, we will consider some examples of DM in PA languages. The important point here is that, in these languages, DM is never a free discourse option; that is, the speaker cannot choose between alternative utterances, as in (46), to alter the information structure of the clause.

- (41) a. John gave a book to me  
 b. John gave me a book

In (41b), DM has placed the familiar animate goal in a backgrounded position. Now compare:

- (42) John gave *me* a book

In (42), a shift in the intonation peak has given the goal contrastive focus, ‘overriding’ the effect of DM. Recall that, in PA languages, contrastive intonation is never used to mark focus. In accord with the dative split, the grammar makes use of obligatory goal ‘advancement’ for pronouns. There are no



sentences corresponding to (41a); only the (41b) type appears. This means that PAs have one kind of case, while DPs have another, when they function as goals or destinations. In contrast, while animacy plays a role in the distribution of DM in English, the pronoun/DPs split is not the determining factor; either a pronoun or a DP may be backgrounded.

### 9.3.2 *Datives in Lummi*

Lummi has no ditransitive constructions, no verbs that select for two obligatory objects. Animate goals are obligatorily 'advanced' to the status of direct object. The item exchanged may optionally be identified by adding an oblique nominal. In (47), the root 'oŋəs 'give' appears with the auxiliary verb -t, one of the small closed set of Transitivity markers:

- (43) 'oŋəs-t-s=lə'=0 ('ə cə sčeenəx<sup>w</sup>)  
 give-TRANS-3ERG=PAST=3ABS OBL DET salmon  
 'He gifted them ([with] a/the salmon/fish)'

In the corresponding passive (48), the semantic goal is further 'promoted' to subject:

- (44) 'oŋəs-t-ŋ=lə'=0 ('ə cə sčeenəx<sup>w</sup>)  
 give-TRANS-PASS=PAST=3ABS OBL DET salmon  
 'They were gifted ([with] a/the salmon)'

A second oblique nominal may be added to identify the 'implicit' agent of a passive. Again, neither oblique nominal is in an A-position, and their order is free. Ambiguities are resolved in context: in the next example, the hearer judges it unlikely that the second interpretation is intended.

- (45) 'oŋəs-t-ŋ=lə'=0 ('ə cə sčeenəx<sup>w</sup>) ('ə cə si'em)  
 give-TR-PASS=PAST=3ABS OBL DET salmon (OBL DET chief)  
 a. 'They were gifted with the salmon by the chief'  
 b. ## 'They were gifted with the chief by the salmon'

Nominal adjuncts in Lummi function as anti-topics, occurring after the initial predicate and clitic string. Without a nominal, the sentence is interpreted as having a definite third-person pronominal argument—the absolutive.

- (46) 'oŋəs-t-0=lə'=sx<sup>w</sup> (cə x<sup>w</sup>ləmi)  
 give-TR-3ABS=PAST=2sgNOM DET Lummi  
 'You gifted them, (the Lummi)' [You gave them something.]

In the corresponding passive, the semantic goal argument is subject:

- (47) 'oŋəs-t-ŋ=lə'=0 (cə x<sup>w</sup>ləmi)  
 give-TR-PASS=PAST=3ABS DET Lummi  
 a. 'They were gifted, the Lummi' [They were given something]  
 b. \*They were given, the Lummi [\* they were given away]

There are no oblique pronouns or pronominal objects of prepositions in Lummi (Jelinek 1998: 341). The single oblique marker occurs only with nominals (including the contrastive demonstratives). Inanimate destinations are oblique nominals, optional adjuncts.

- (48) Ye'=lə'=0 ('ə cə swi'iłč)  
 go=PAST=3ABS OBL DET lake  
 'He went (to the lake)'

Crucially, inanimate destinations cannot be 'advanced'. In sum, PAs are backgrounded, oblique nominals are given focus, and the morphological status of these terms reflects their status in information structure.

### 9.3.3 *Datives in Navajo*

Oblique arguments in Navajo are marked with postpositions. Young and Morgan (1987: 26–36) identify some seventy-seven postpositions in Navajo. Young and Morgan (1976: 19–26) recognized two classes: the postpositional enclitics and the (ordinary) postpositions. Postpositional enclitics attach directly to nouns, deriving oblique adjuncts:

- (49) a. 'olta'-dę'ę' b. hooghan-di  
 school-from home-at  
 'from school' 'at home'

The ordinary postpositions differ in requiring a pronominal object as an argument, and form a complex with the inflected verb; they may be phonologically incorporated into the verb word. They mark backgrounded goals.

- (50) a. Yá jilbéézh b. Béeso naa ní'á'  
 3-for 3Obj:3Subj:boils dollar 2sg-to 1sg:gave  
 'He is boiling it for him' 'I gave you a dollar'  
 c. Nich'i'yil'aad  
 2sg-to-3Obj-1sgSubj-sent  
 'I sent him to you'

Example (50a) shows the benefactive; (50b) the dative. Example (50c) shows an incorporated postposition, *ch'i'* 'to, toward', and its object. Willie (1991: 93–5) calls those postpositions (50) which have pronominal objects and may



For a related analysis of the Navajo verb, see Hale (2003: 12). The Navajo verb has more than a dozen prefix positions, including numerous aspectual, modal, and adverbial projections, which we will not attempt to describe here. The grammatical PPs are initial in the verbal complex, whether phonologically integrated into the verb word or freestanding. This postposition–verb complex is the domain of the inverse voice alternation (Willie and Jelinek 2000: 265–78), a major feature of Navajo syntax.

Whether preceding the verb or phonologically incorporated into it, grammatical postpositional phrases are at the topmost argument projection. Other examples of postpositions: the grammatical postpositional phrase *yaa* in (53) marks motion towards a discrete entity.

- (53) 'awéé' jooł yaa yílmáás  
 baby ball 3-to 3ACC-3NOM-rolling  
 'She is rolling the ball to the baby'

The lexical postposition *góó* in (54) marks motion towards an inanimate area.

- (54) Kinláni-góó déyá  
 Flagstaff-to 1sNOM-go:Future  
 'I will go to Flagstaff'

This postposition is not used with an animate individual:

- (55) \*'awéé'-góó jooł yílmáás  
 baby-to ball 3ACC-3NOM-rolling  
 'She is rolling the ball to the baby'

Unless an areal reading is implied:

- (56) Shimá sání-góó déyá  
 grandmother-to 1sNOM-go:Future  
 'I will go to my grandmother's place'

In (57), the verb–postpositional complex contains subject, theme, and goal pronouns. It also contains three DPs; this would occur in a very unusual discourse context, where all the referents need to be identified.

- (57) Asdzání at'ééd naaltsoos yaa yini'ą'  
 woman girl book 3-to 3ACC-3NOM gave  
 'The woman, the girl, the book, she gave it to her'

When more than one DP adjunct is present, as in (57), they must be ordered according to the Navajo animacy hierarchy, not in terms of putative grammatical relations. This hierarchy ranks referents as follows:

- (58) supernatural>adult human>child>infant>large animal>small  
animal>insect>inanimate

If less than the full complement of DPs are present, as is typically the case, the hearer must rely on context and real-world knowledge to decide who gave what to whom. Notice that the PP *yaa* is not adjacent to the DP that the pronoun is coreferent with, *at'ééd*—the PP must precede or adjoin the verb. If only one DP is present, it directly precedes the verb sentence.

- (59) Naaltsoos ya yini'ą'  
book 3-to 3ACC-3NOM gave  
'The book, she gave it to her'

(Navajo pronouns do not mark gender or animacy; the features are used in the glosses here to aid in reference.) Since books do not give or receive, we know that 'book' is the transferred item. Now consider:

- (60) Mary, ya yini'ą'  
3-to 3ACC-3NOM gave  
'Mary, she gave it to her'  
'She gave it to Mary' or  
'Mary gave it to her'

This sentence is ambiguous; the hearer has no way of knowing if the singular DP represents the agent or the goal, since, without the other animate DP, he does not have enough information about the referents to make use of the animacy hierarchy. He is forced to rely on context.

To place focus on an object in Navajo, accusative or dative, there must be a lexical item (NP or contrastive pronoun) in the Focus position before the complex verb. For example, 'wh-words' carry inherent focus, and the answer to a 'wh-question' includes a focused lexical item that supplies the requested information.

- (61) a. Ha'át'íi-sh naa yini'ą'  
what-? 2s-to 3ACC-3NOM gave  
'What did she give you?'  
b. Naaltsoos shaa yini'ą'  
book 1s-to 3ACC-3NOM gave  
'She gave me a book' (focus on the theme)
- (62) a. Háí-sh yaa yini'ą'  
who-? 3-to 3ACC-3NOM gave  
'Who did she give it to?'

- b. At'éd yaa yini'ą'  
 girl 3-to 3ACC-3NOM gave  
 'She gave it to the girl' (focus on the goal)

Wh-words in Navajo occur in the same Focus positions that other nominal operators may occupy. The wh-words in (61a) and (62a) show an interrogative or modal suffix *-sh* that carries contrastive focus. Questions in Navajo do not have a distinct intonation; the question particles *-sh* (second position, or after the first constituent) and *da'* (clause initial) serve this purpose. Note that in (61b) the adjoined nominal is coindexed with the ACC pronoun; in (62b) the nominal is coindexed with the DAT pronoun. The speaker places focus on either argument by adding a lexical item that is coindexed with it—only lexical items have focus. The examples in (61) and (62) are evidence that the focus position preceding the verb–postpositional complex is not an A-position. The speaker cannot alter the focus status of either a pronoun or a nominal, since there is a strict correlation between their information structure status and their morphosyntactic properties.

#### 9.3.4 *Summary on Case options*

In Pronominal Argument languages, where information structure is marked overtly in the morphosyntax, there is no 'optional' dative movement; instead, we find syntactic constraints on the distribution of the dative. In Lummi, goal pronouns are direct objects; only DP may be marked oblique. In Navajo, the structural cases, the accusative plus the (postpositional) dative and benefactive cases, appear with PAs at vP projections, and there is a class of lexical postpositions that derive oblique DP.

- (63) a. In Pronominal Argument languages, the Case options for pronouns and DPs differ, since only pronouns occur in A-positions.  
 b. In Lexical Argument languages, pronouns and DPs show the same range of case markings, since both may appear in A-positions.

In PA languages, nominals appear at topic/focus projections, while the PAs appear at functional projections associated with the subject/object cases. We have seen that these languages show a rigid mapping between information structure and argument structure in the morphosyntax: affixed pronouns are backgrounded or topical, and only lexical items have focus as new information in context.

So far, we have identified two features that PA languages have in common, as opposed to LA languages: (1) the absence of agreement and pro-drop, and (2) the absence of any productive dative movement, along with distinct sets of

case options for PAs and DPs. Finally, I want to turn to the third and most important line of evidence in support of the PA Parameter to be surveyed here: the absence of determiner quantification in PA languages.

#### 9.4 Quantifiers in Lummi and Navajo

Lummi and Navajo show many similarities in the expression of quantificational notions that follow from the fact that they are PA languages. We will identify briefly the salient features wherein languages differ from LA languages in this domain of the grammar.

##### 9.4.1 *Determiner versus adverbial quantification*

Investigations of parametric contrasts in the expression of quantification in natural language (Bach et al. 1995) have shown that, while all languages have adverbial quantification (Lewis 1975), only some languages have determiner quantification. Some examples of this contrast in English:

- (64) a. Determiner quantification: *most children, every child, three children, few children.*  
 b. Adverbial quantification: *always work, never work, work often, just work.*

Languages with PAs have been claimed to lack determiner quantification; Straits Salish (Jelinek 1995: 487–8), Mohawk (Baker 1995: 21–2), Asurini do Trocará (Damaso Vieira 1995: 701–3), and Navajo (Faltz 1995: 283–4; Hale et al. 2003) are examples. Determiners in Lummi and Navajo are restricted to demonstratives that do not mark definiteness, number, count versus mass, or any quantificational notions. Quantification in PA languages is limited to adverbials, predicates, and certain morphological processes marking aspect (Jelinek and Demers 1997: 303).

##### 9.4.2 *'Strong' versus 'weak' quantifiers*

In addition to this contrast in the syntactic expression of quantificational notions, there is a semantic contrast between two classes of quantifiers that is language-universal. This is the 'strong' versus 'weak' distinction (Milsark 1977).

- (65) a. Strong quantifiers range over the members of some presupposed set.  
 b. Weak quantifiers (including cardinality expressions) assign number or numerical size (*few, many*) to the members of a set.

Examples from English determiners:

- (66) a. Strong: *most children, every child*.  
 b. Weak: *three children, many children*.

This semantic contrast has many syntactic reflexes. For example, strong quantifiers cannot occur in existential contexts, while weak quantifiers can.

- (67) a. \*There are most children/every child in the garden  
 b. There are many/three children in the garden

In PA languages, the strong quantifiers are adverbial. In Lummi, the strong quantifiers have a special syntax, not shared by other adverbs.

- (68)  $Mk^w = \text{h}^{\prime} = 0$              $\text{'}\text{əw}'$  t'iləm    cə 'ŋən' ŋənə  
 ALL=PAST=3ABS    LINK sing    DET children  
 'They all sang, the children'

The strong quantifiers are linked to a following predicate by a conjunctive (LINK) particle,  $\text{'}\text{əw}'$ . The quantifier is followed by the second position clitic string.<sup>3</sup> An example of a different adverbial quantifier, showing variable scope, is given in (69).

- (69)  $\text{łe}' = sən$                      $\text{'}\text{əw}'$     t'əm'-t-0  
 AGAIN/ALSO=1sNOM    LINK    hit-TRAN-3ABS  
 'I hit him again/ I also hit him' ('in addition')

Since the strong adverbial quantifiers in Lummi have operator scope over the rest of the sentence, they are subject to interpretations with variable scope of the quantifier. Compare:

<sup>3</sup> An interesting analogue with the syntax of strong quantifiers in Lummi is provided by English constructions such as *I'm good and tired*, and *It's nice and clean*. Here there are quality words, functioning as quantifiers, linked by a conjunction to the following predicate. Because of the external position of the adverbial quantifier with respect to the sentence in Lummi, the surface syntax parallels the 'tripartite structure' defined for the semantic structure of quantified contexts. The tripartite structure contains a quantifier in an operator position, a restriction on the quantifier, and the nuclear scope. In the mapping between this tripartite structure and the syntax, it is universally the case that, in complex sentences, the main clause corresponds to the nuclear scope, and the restrictor to the subordinate clause (Hajičová et al., 1998: 60–72). These authors argue that this tripartite semantic structure reflects the focus component of the grammar. In Straits syntax, the main clause precedes any subordinate clauses, and thus the clause with nuclear scope precedes the restrictive clause in the surface syntax. The syntax of sentences with strong adverbial quantifiers in Straits Salish provides evidence that there are languages where the tripartite semantic structure of these sentences is 'grammaticalized' or overt in the surface syntax.



- (70) Mək<sup>w</sup>= 'əw' p'əq cə speq'əŋ  
 ALL (x) LINK white (x) DET flowers (x)  
 a. 'All the flowers are white'  
 b. 'The flowers are completely white [not parti-coloured]'

This Lummi sentence has the two readings of the English sentence *The flowers are all white*, which is also ambiguous between (70a) and (70b). However, Lummi lacks the distinction between the two sentences (70a, b) without employing complex multi-clause constructions—since the quantifier can occur in only one position.

In Navajo also, strong quantifiers are adverbial, and show variable scope, as in the following example:

- (71) 'aɬso yíshí'í'  
 3OBJ-1sgSUBJ-dyed black  
 'I finished dyeing it/them black' or 'I dyed all of it/them black'

Weak quantifiers never appear as adverbial quantifiers. In both Lummi and Navajo, there are existential verbs or particles that are used to introduce new and indefinite referents into the discourse. Both languages also have predicates marking cardinality. (Lummi has no copula; Navajo does.)

- (72) Čəsə'=<sup>l</sup>  
 two=1pSUBJ  
 'We are two (in number)' (Lummi)

- (73) Táá' niilt'é  
 three 1pSUBJ-be  
 'We are three (in number)' (Navajo)

Faltz (1995: 283–4) argues that Navajo quantifiers are 'floating'—i.e. not in construction with nouns—and constitute adjuncts in their own right. Weak quantifiers in these languages are either clausal predicates or adjectival in function.

Navajo nouns, apart from a few referring to human beings, are not marked for number. If a quantifier appears between two nominals in a Navajo sentence, it may be interpreted with either, evidence that it is adverbial in function:

- (74) Má'jǐ aɬso dibé baayijah  
 coyote all sheep 3Obj-3PlSubj-ran away  
 a. 'The sheep were chased by all the coyotes'  
 b. 'All the sheep were chased by the coyotes'



## 9.5 Concluding remarks

We have identified three major syntactic differences between the class of Pronominal Argument languages, on the one hand, and the class of Lexical Argument languages, on the other.

- (78)
- a. PA languages do not show the agreement relation that licenses pro-drop; some LA languages do. In an LA language, only definite arguments are pro-dropped, and the corresponding agreement elements are backgrounded. Similarly, in PA languages, a PA is backgrounded. PA languages have special contrastive focus elements that make it possible to place contrastive emphasis on a PA.
  - b. In PA languages, there is no 'optional' dative movement. Pronouns and DP differ in case options, since only the former are in (non-oblique) A-positions. In LA languages, these two classes of referring expressions do not differ in case options, since they occupy the same A-positions, and dative movement is freely employed to mark focus.
  - c. PA languages lack determiner quantification, while LA languages do not, since (1) determiner quantification functions to restrict the scope of a quantifier to a particular A-position, and DPs do not occupy A-positions, and (2) there are no simple indefinite nouns to serve as restrictors on determiner quantifiers.

While these features are absent in PA languages, they are present in pro-drop languages: agreement, 'optional' dative movement with the same case options for DPs and pronouns, and determiner quantification. The distribution of these traits clearly differentiates the two language types. There are many other syntactic features shared by PA languages that are outside the scope of this chapter. Some of the major parametric differences are:

- (79)
- a. There is no DP- or wh-movement from A-positions, since these constituents are excluded from A-positions.
  - b. There is no noun incorporation from an object position.
  - c. There are no embedded clauses, only adjoined subordinate clauses; in contrast, in LA languages, embedded clauses are nominalized constructions in A-positions.
  - d. There is no inter-clause raising of subjects and objects.
  - e. Reflexives do not function as emphatics, since they are incorporated pronominal arguments that exclude focus.

- f. There is no V or VP ellipsis, no infinitival verb forms, no control phenomena, etc. A verb always appears with its pronominal arguments.

In sum: the three syntactic features considered here, and the fact that their distribution is the same in genetically unrelated PA languages, provides conclusive evidence in support of the Pronominal Argument hypothesis. Lummi and Navajo represent a parametric option in which the grammar maps information structure directly onto the syntax by requiring pronouns—discourse anaphors that are old information—to be incorporated and unstressed, while lexical items—as items new in the context—have focus. Navajo does not make use of intonation contours in expressing information structure contrasts, but relies on morphosyntactic structure to express the Topic/Focus articulation of the clause. Recent spectrographic work by McDonough (2003: 203–6) shows that questions and other focus constructions do not have distinct intonation contours in the language.

In LA languages, the constraints on dative movement are lexical, having to do with animacy. Freestanding pronouns and DPs are equal under DM. Both pronouns and DPs can have any case or voice role, or any level of focus. We have seen that, in Lummi and Navajo, there is no ‘optional’ DM; rather, animate pronominal goals carry ‘grammatical’ case, while inanimate DP goals carry an oblique lexical case. Finally, the fact that both languages lack determiner quantification is definitive evidence in support of the claim that DPs are excluded from argument positions. These major parametric contrasts follow from differences in the mapping between information structure and morphosyntactic structure in PA versus LA languages. In PA languages, the information structure status of a constituent can be read directly from its morphosyntactic status.

## **PART II: Hierarchies, information structure and semantic mapping**

While many of the papers in this section also deal with PA languages, the focus in this section is on the relationship between hierarchical syntactic structure and semantics. In particular, it builds upon Jelinek's claim that semantic hierarchies (including those dealing with information structure) correlate systematically to the hierarchical structure of the clause. Person Hierarchies, Animacy Hierarchies, Specificity Hierarchies, Voice Hierarchies and Topic/Focus splits all correlate directly to the architecture of the clause, where hierarchy-prominent relations are also structurally more prominent.

- II.1 Jelinek, Eloise** (1987) Auxiliaries and Ergative Splits: A Typological Parameter. in Harris, Martin and Ramat, Paolo (eds.). *Historical Development of Auxiliaries*. Berlin: Mouton de Gruyter. pp. 85-108.
- and*
- Jelinek, Eloise** (1989). "The Case Split and Argument Type in Choctaw." In Maracz, Lazlo K. and Pieter Muysken (eds.), *Configurationality: The Typology of Asymmetries*. Dordrecht: Foris. pp 117-141

These two papers are best taken as a pair. Jelinek (1987) is primarily about Ergative/Absolute Splits in Australian languages; Jelinek (1989) is about case splits in the completely unrelated language Choctaw. However, they demonstrate the strength of the PAH as a means of explaining case splits. In both papers, a distinction between DPs (which are adjoined high up in the sentence) express different Case relations from the actual argument pronouns in the clause. They are early attempts to demonstrate that case splits follow directly from parametric typological differences among languages and from the architecture of the clause more generally.

# Auxiliaries and Ergative Splits: A Typological Parameter<sup>1</sup>

Eloise Jelinek

The development of copular auxiliary verbs from pronominal clitics or affixes has been well documented in many language families – Ancient Chinese, Semitic, and several Native American groups (Li & Thompson 1977). A number of languages, particularly in Africa, have developed negative copular verbs from the fusion of pronominal and NEG elements. Ken Hale (1973) first noted the many parallels in structure and function between the second position AUX clitic cluster (which is almost universal in aboriginal Australia, and in many Native American language families) and auxiliary verbs in language families such as Indo-European. This second position AUX clitic cluster contains elements marking the person and number of the verbal arguments, along with other inflectional categories such as tense, aspect, mood, modality, and sentential polarity or negation. Auxiliary verbs or clitic clusters typically occur with participle-like verbal forms inflected for aspect, voice, or mood.

In Indo-European, it is ordinarily just the subject that is marked in the auxiliary verb, as in Span. *estoy cantando, he cantado*. But in many language families, object arguments may also be marked in the verbal inflection or in AUX, as in Basque, or in the aboriginal languages of Australia and North America that I am primarily concerned with here. The marking of all the verbal arguments in AUX or in the verbal inflection has profound consequences for the syntax. Frequent among these is the presence of ergative features. The dependency between the marking of grammatical relations in the inflectional morphology and the distribution of ergative features across languages will be the focus of this paper.

Attempts at assimilating the phenomena ergativity into a theory of universal or core grammar have been faced with the wide diversity of languages that have been termed 'ergative'. It has frequently been noted in the literature on ergativity (cf. Dixon 1979) that languages that exhibit ergative features are rarely, if ever, 'wholly' ergative; that

is, some morphological or syntactic components of the grammar can be seen as operating on the more familiar accusative pattern. Mixed ergative-accusative patterns within a language are commonly referred to as 'ergative splits'. In another sense, splits may be said to occur within a family of closely related languages; that is, the members of a language family may differ as to their type or 'degree' of ergativity. Anderson (1977) points out that this variation across related languages indicates that languages may become or cease being ergative, and that the study of historical change in such families should shed light on the dependencies between ergativity and other aspects of a grammar, and on what the mechanisms of such changes may be. Within a language, ergative splits may be conditioned by clause type (main vs. subordinate, etc.), by verb type, by tense/aspect or by semantic features of the verbal arguments; this latter is generally referred to as an 'NP split'. Dixon (1979) stresses that the evidence on historical change now available does not suggest that any single kind of split may underlie the numerous and varied kinds of ergative patterns found across languages.

Evidence appears to be accumulating to the effect that for some types of ergative systems, historical origins may be clearly traced; while for other kinds of ergativity, origins are obscure, and conflicting claims as to the nature of historical change have been advanced. Historical connections between passive and ergative constructions have frequently been suggested. Chung (1976; 1977) has documented the development of ergative constructions from passives in Polynesian. Chung notes that in contemporary Pukapukan, accusative, passive, and ergative constructions currently exist side-by-side, and the speaker's choice among them relates to his evaluation of the speech situation along a scale ranging from polite/formal (ACC) to casual/slightly improper (ERG). This would appear to demonstrate change in progress.

Across languages, passives are frequently restricted to certain tense/aspects. Dixon (1979:99) notes a clear association between ergativity of a passive origin and tense/aspect splits, and cites Anderson's (1977) observation that 'passives are semantically close to perfect in that they generally present a state resulting from a completed action.' Ergatives in Indo-Iranian are clearly derived from earlier perfective aspect forms; see discussion in Trask (1977).

It seems clear then that some ergative constructions arise from passives or perfectives, and that these ergatives are predominantly



tense/aspect conditioned. But, as Dixon notes, very little is known about the origins of ergative patterns showing NP splits. In fact, it is just with regard to languages with this type of ergative split that the historical evidence seems contradictory and confusing. In NP splits, the use of an ergative construction is not determined by utterance context or by features such as verb, aspect, or clause type, but rather by the kind of referential elements that appear in the sentence. Silverstein (1976) claimed that NP splits follow a 'hierarchy of [semantic] features' such that elements higher on a scale of agency or animacy will appear in accusative constructions, while lower ranked elements will trigger ergativity. NP splits occur in many areas including Asia and the Americas, but they are almost universal in the Pama-Nyungan family of languages in Australia.

Problems arise with explaining these NP splits with reference to a Silverstein hierarchy, as I will show, and problems arise also in connection with the interpretation of the evidence on historical change. Opposing claims have been advanced concerning the direction of diachronic change in Australia, *ERG* → *ACC* or *ACC* → *ERG*. Early historical speculations assumed that a change from *ERG* to *ACC* in Australian languages was a kind of evolutionary progress towards an Indo-European grammatical type. Hale (1970) argued that the direction of change was the reverse, *ACC* → *ERG*, and that *ERG* constructions evolved from passives, by means of a passive rule that became obligatory. Blake (1977) comments that recent change from *ERG* to *ACC* has been documented, and adds that it is his impression that ergativity is on the decline in Australia at present. We shall turn to recent evidence on this point in sec. 3. Dixon (1977) reconstructs both *ERG* and *ACC* case in Proto-Australian. The reconstructed agentive case marker seems incontestable, and it seems equally certain that *ACC* marking was also present on some pronouns. This lends support to neither of the claimed directions of historical change, *ERG* → *ACC* or *ACC* → *ERG*, and suggests that an NP split was present in Proto-Australian.

I will argue that Proto-Australian was accusative, and I will propose mechanisms whereby both the morphological ergativity that is common in the Pama-Nyungan family and the syntactic ergativity that is rarely found (Dyirbal is a primary example of a language with syntactic ergativity) can have developed from Proto-Australian. These claims will rest on the identification of particular distinctive aspects of the syntax of contemporary Pama-Nyungan languages — specifi-

cally, the constraints upon permitted argument types – and upon evidence from current change in Australian languages as they succumb to pressure from contact with English. In short, I suggest that certain typological features of Proto-Australian can resolve the puzzle of the conflicting historical evidence, can account for the emergence of ergative features, and can also resolve certain other ‘puzzles’ that have often been identified in connection with ergativity. These include: 1) What is the origin of the NP splits? 2) Why is ergativity usually so ‘shallow’ (with the exception of Dyirbal and marginally, a few others)? 3) Why is ERG case invariably homophonous with or closely related to some other case in Australian languages? 4) Why do NPs often receive ‘double’ case marking? 5) And finally, why are passives rarely found in the Pama-Nyungan languages?

## 1. A typological parameter: languages with pronominal vs. languages with lexical arguments

There is a profound typological distinction among languages: those that place constraints upon the class of elements that may serve as arguments, and those that do not. A language may permit a verb (or other predicate that determines the argument structure of a clause) to take only elements that mark just the simple indexical features of person and number (and occasionally, gender) as their arguments. Navajo is an example:

- (1)     yiyiiltsá  
           3ACC-3NOM-saw  
           ‘He saw him’.

Or a language may permit predicates to take full lexical items with any semantic feature whatever to serve as their arguments. English has no constraints upon argument types, and permits both lexical and pronominal arguments.

- (2) a. He saw him.  
       b. David saw Goliath.

This typological contrast may be stated as follows:

- (3) The Argument Type Parameter
- Pronominal Argument languages permit only pronouns and anaphors as arguments.
  - Lexical Argument languages do not restrict arguments; lexical arguments are allowed.

Sentences may serve as arguments to higher verbs in Lexical Argument languages. Pronominal Argument languages lack embedded clauses. Clausal adjunction, with coreference of pronominal arguments across clauses, is found instead.

Pronominal Argument languages permit, under specified conditions, optional adjoined nominals that amplify the information (person and number) given on the referents of the pronominal arguments.

- (4) a. Ashkii yiyiiltsá  
*boy 3ACC-3NOM-saw*  
 'He/she saw the boy'.
- b. At'ééd biiltsá  
*girl bi-3ACC-3-NOM-saw*  
 'The girl saw him/her'.
- c. At'ééd ashkii yiyiiltsá  
*girl boy 3ACC-3NOM-saw*  
 'The girl saw the boy'.
- d. At'ééd ashkii biiltsá  
*girl boy bi-3ACC-3NOM-saw*  
 'The boy saw the girl'.

The change in the *yi-/bi-* pronominal prefix in these examples indicates whether the preceding nominal is an adjunct to the agent or patient pronominal argument (Sandoval & Jelinek in press).

Examples from Warlpiri, a Pama-Nyungan language of Australia, are as follows (Hale 1983: 6–7).

- (5) a. Panti-rni ka  
*spear-NONPAST PRES-3sg.NOM-3sg.ACC*  
 'He/she is spearing it'.
- b. Wawirri ka panti-rni  
*kangaroo PRES-3sg.NOM-3sg.ACC spear-NON3AST*  
 'He/she is spearing the kangaroo'.
- c. Ngarrka-ngku ka panti-rni  
*man-ERG PRES-3sg.NOM-3sg.ACC spear-NONPAST*  
 'The man is spearing him/her/it'.

- d. Ngarrka-ngku ka wawirri  
 man-ERG PRES-3sg.NOM-3sg.ACC kangaroo  
 panti-rni  
 spear-NONPAST  
 'The man is spearing the kangaroo'.

Word order in Warlpiri is free except for AUX, in second position. Pronominal Argument languages permit nominals to be adjoined to the pronominal arguments via rules that refer to the subcategorization of the verb. (Adjunction rules for Warlpiri are given in Jelinek 1984; for Apachean (Navajo) in Sandoval & Jelinek in press). Since nominal adjuncts are optional, no PRO or other empty category is required in the analysis of (1), (4 a, b) or (5 a, b, c). There is nothing 'missing' in these sentences since the argument positions of the verb are filled by the verbal prefixes or AUX elements, in accordance with the Projection Principle (Chomsky 1982); the speaker has simply failed to exercise his prerogative to adjoin all the permitted nominals, since he is confident that in context his hearer will not mistake his intended reference.

A frequently encountered, but non-definitional attribute of Pronominal Argument languages, one which does not follow from the Argument Type Parameter itself, is that in these languages, third person (singular) pronominal is often phonologically null. There are languages that have only pronominal arguments that do have an overt third person pronoun; as in the *bi* prefix in the Navajo example sentence (4b) above. However, if a feature is necessarily marked in a construction, and if that feature is marked by the mutually exclusive members of a paradigmatic set, then one member of that set is often ZERO or phonologically null, and the interpretation, as Hale observes, is by default. If no other member of the pronominal paradigm is present, there is no ambiguity; a fixed third person singular interpretation is present. Since the set of permitted argument types is so constrained in these languages, ZERO arguments are permitted. Note that third person dual and plural are overt:

(6) Warlpiri AUX clitics (Hale 1973: 315–316, 328)

| NOMINATIVE | ACCUSATIVE |         |
|------------|------------|---------|
| -rna       | -ju        | 1st sg. |
| -n(pa)     | -ngku      | 2nd sg. |
| -rlijarra  | -jarangku  | 1st du. |

|             |                       |               |
|-------------|-----------------------|---------------|
| -rli        | -ngalingku (~ -ngali) | 1st & 2nd du. |
| -n(pa)-pala | -ngku-pala            | 2nd du.       |
| -rna-lu     | -nganpa               | 1st pl.       |
| -rli-pa     | -ngalpa               | 1st & 2nd pl. |
| -nku-lu     | -nyarra (~ -nyurra)   | 2nd pl.       |
| ZERO        | ZERO                  | 3rd sg.       |
| -pala       | -palangu              | 3rd du.       |
| -lu         | -jana                 | 3rd pl.       |

Phonologically null third person marking is also found in Lummi, a Pronominal Argument language that belongs to the Coast Salish group of the American Northwest.

- (7) xči-t-ø-s  
*know-TRANS-3ABS-3ERG*  
 'He knows him'.
- (8) ye<sup>?</sup>-ø  
*go-3ABS*  
 'He left'. (Jelinek & Demers 1983: 316)

Example (8) shows a predicate with no added phonological material, that is interpreted only as a finite declarative sentence with a third person argument.<sup>2</sup>

Evidence given in Jelinek (1984) for classifying nominals in Pronominal Argument languages like Warlpiri, Navajo and Lummi as adjoined nominals rather than arguments bearing grammatical relations may be recapitulated briefly here.

### 1.1. Sentential constituency

Nominals in these languages are optional, while predicates never appear in finite clauses without the affixes or AUX elements that mark person, number, and grammatical case. An excellent report on Walmatjari (Hudson 1978) contains the following examples (renumbered).

- (9) Although many examples in this paper contain several phrases, this is not typical of the language. Because of the person-number information contained in the verbal auxiliary

the clause often has only two constituents, the verb and the verbal auxiliary.

- a. nganpayi-wu ma-rna-rla                      jularni wangki- $\emptyset$   
*man-DAT      MRI-1sgS-3sgDAT told      word-ABS*  
 ngaju-ngu  
*I-ERG*

'I told the man something'.

Sentence a) is most likely to be heard as:

- b. jularni ma-rna-rla  
 'I told him'.

For emphasis one phrase may be included:

- c. jularni ma-rna-rla ngaju-ngu  
 'I told him'. (Hudson 1978: 17)

The independent pronoun is included in (9 c) for contrastive referential emphasis.

## 1.2. Absence of grammatical case on nominals

In Navajo, nominals, including free pronouns, carry no case marking, as opposed to the verbal pronominal prefixes, which mark grammatical case. Nominals may be adjuncts to a verb or to an inflected postposition (possessive, locative, directional, etc.). In Lummi nominals carry only oblique case, and the AUX clitics and predicate suffixes are the pronominal elements that carry the grammatical relations. In Warlpiri, the AUX clitic paradigms mark the grammatical cases (NOM/ACC/DAT) and nominals carry lexical case. DAT is both a grammatical and lexical case. ERG/ABS/DAT case on nominals permit them to be co-indexed (interpreted as co-referential) with AUX clitics; other lexical cases (Allative, Elative, Perlative, etc.) cannot be so co-indexed.

## 1.3. Constraints on adjunction

In Pronominal Argument languages there are certain predicates (weather, modals) that exclude nominal adjuncts to their pronominal

subjects; that is, there are no pleonastic subjects. Reflexive and reciprocal anaphors also commonly exclude adjuncts. Other constraints are language particular. In Navajo there is a "fourth" person verbal inflection, the obviate, used to refer to someone the speaker does not wish to name, that is so specific in reference that it excludes adjuncts (Willie, in press).

- (10) a. Tom jiztał  
           3-4-kicked  
           'A certain person kicked Tom'.  
       b. Tom hwiztał  
           4-3-kicked  
           'Tom kicked a certain person'.

Fourth person subject is marked by *ji*, and fourth person object is marked by *ho*. A second nominal may be added to utterances such as these only if a pause and falling contour indicate that they are outside the main clause:

- (11) a. diné, Tom jiztał  
           'The man, he kicked Tom'.  
       b. diné, Tom hwiztał  
           'The man, Tom kicked him'.

#### 1.4. Specialized function of free pronouns as adjuncts

Independent pronouns in Pronominal Argument languages are adjuncts that generally appear only in contrastive referential emphasis, as in example (9 c) above. A Navajo example:

- (12) ni niish'í  
       you 2nd sg.-1st sg.-see  
       'I see you',  
       (13) shí yishááł  
           I 1st sg.-walk  
           'I'm walking'.

These sentences are marked constructions, as compared to those without the emphatic free pronouns.<sup>3</sup>

### 1.5. Absence of 'agreement'

In Navajo, nouns (except for a half-dozen referring to human beings) do not mark number, just as they do not mark case. In Lummi also nominals often do not mark number; nominals are derived expressions based on predicates that may be reduplicated to show plurality of action or actors. In Warlpiri, nominals need not agree in person or number (and of course, case) with the AUX clitic to which they are co-indexed. The following example is from Hale (1983):

- (14) Puyukuyuku-puru, kula-lpa-rlipa-nyanu  
*fog-WHILE NEG-IMPERF-1st pl.(INC)NOM-REFL*  
 yapa- $\emptyset$  nya-ngkarla  
*person-ABSsee-IRREALIS*  
 'We (plural inclusive) cannot see one another (as) person(s)  
 (i. e., our shapes or figures) when it is foggy'.

In this example, the nominal *yapa* 'person', is third person singular ABS, and is coindexed with the anaphor *-rlipa*, which is first person (INC) plural ACC. There is no agreement in case, person or number.

Janet Sharp provides the following example from Manyjilyjarra:

- (15) paa-rninpa-rna- $\emptyset$  tampa- $\emptyset$   
*cook-PRES CONT-1st sg.NOM-3rd sg.ACC damper-ABS*  
 ngurra-ngka-rlu  
*camp-LOC-ERG*  
 'I am cooking the damper in camp'.

This example shows 'double' case marking, to be described in section 2.5. below. *Ngurra* 'camp' has LOCATIVE case followed by ERGATIVE, to indicate co-indexing with the first person singular subject clitic; 'agreement' is absent.

In non-Pronominal Argument languages, nominals are arguments and none of the characteristics outlined here are present: nouns are necessary constituents of sentences; they carry grammatical case; pleonastic subjects occur; agreement may be present (as in English third person singular *-s*) and free pronouns have other uses than simply that of referential contrast.



## 2. Problems and puzzles

I turn now to a consideration of what this understanding of the Pama-Nyungan languages as placing constraints on argument types can contribute to the solution of the 'puzzles' cited above in connection with ergativity in these languages.

### 2.1. The origin of NP splits

Considerable attention has been given to the problem of accounting for the NP splits that are universal in Pama-Nyungan and found frequently also in Asia and the Americas. The explanations for these splits that have been offered heretofore rest on semantic or pragmatic factors. Silverstein (1976) made the significant observation that in languages with NP splits, referential items may be ranked along the following scale:

(16) 1 > 2 > 3 > proper > human > animate > inanimate

(First and second person may fall together, or 2 may outrank 1.) In a particular language, ergativity extends leftward to some point along the scale. (Finer gradations reflecting number, etc. may be present.) Silverstein's explanation for this hierarchy was based on the speaker's and hearer's expectations as to agency; elements higher on the scale were progressively more likely to be agents than lower-ranked ones. Mallinson & Blake (1981) presented text counts (including aboriginal Australian texts) that showed that no association between person and agency was present, and argued that the feature underlying the NP hierarchy was 'topic-worthiness'. DeLancey (1980) claims that the hierarchy can be explained in terms of 'attention flow.'

Comrie (1981) emphasizes that attempts to account for NP splits in terms of agency/animacy/topicality, etc. are irrelevant to the kind of split found in Warlpiri, for example, where the AUX clitics are NOM/ACC and the independent pronouns are ERG/ABS. This split, Comrie notes, is 'orthogonal' to the Silverstein hierarchy, since the clitics and free pronouns mark the same semantic features of person and number. It is highly significant that there are no counterexamples to this distribution; no languages where clitics or pronominal affixes are ERG/ABS, while free pronouns are NOM/ACC, just as there are

no cases where free or bound pronominal paradigms are ERG/ABS while other nominals are NOM/ACC.

### 2.1.1. A referentiality scale

It should be emphasized here that there is a clear association between such semantic and pragmatic factors as agency, animacy, topicality, attention flow, 'old' vs. 'new' information, etc., and pronouns, as opposed to other NPs. But a more central aspect of this ranking of pronouns over other NPs is that of referentiality. In the utterance context, first and second person, speaker and hearer, are uniquely referential in the sentence; third person pronominal is assigned reference in the discourse. Proper nouns and kin terms are also given fixed reference in context. As we go down the NP scale, the specificity of reference diminishes, and ambiguity is increasingly likely; when a new referent is introduced, it must be picked out by the use of some descriptive predicate (or a non-verbal deictic gesture). We make reference more specific by saying 'Jane Brown, not Jane Smith', 'my son the doctor', 'the distant kangaroo', etc.

In Pama-Nyungan there are 'discontinuous expressions' where nominals that form a semantic unit of some kind are separated in the sentence, since their case-marking shows their common link to an AUX argument. The following example is from Walmatjari (adapted from Hudson 1978: 26).

- (17)    *kunyarr-warnti-rlu pa-lu-nya*  
           *dog-PL-ERG           MRI-3PLS-3PLO*  
           *karnanganyja-warnti-∅ pajani malji-warnti-∅*  
           *emu-PL-ABS           bit       male-PL-ABS*  
           *purlka-warnti-rlu ngaju-kura-warnti-rlu*  
           *big-PL-ERG        I-POSS-PL-ERG*  
           'My big dogs bit (caught) the male emus'.

In this example, each nominal adjunct to the third person plural AUX clitic makes the reference increasingly explicit: 'dogs', then 'big' then 'my' so that the order of the dispersed adjuncts is precisely the reverse of the order in the English NP 'my big dogs'. Similarly, 'emus' precedes 'male'.

### 2.1.2. The syntactic basis of the NP split

The referentiality scale reflects a complex of semantic/pragmatic features that are language universal, but not all languages have an NP split. The point is that these semantic/pragmatic factors find varying syntactic expression across languages. In Pronominal Argument languages, the referentiality scale finds formal expression in the constraint placed on argument types: only pronominal elements with simple deictic reference may serve as arguments, and nominals serve as adjoined predicates. This is the syntactic basis of the NP split: arguments have NOM/ACC case, and nominals have lexical ERG/ABS case.

We noted earlier that a feature often encountered in Pronominal Argument languages is phonologically null third person. Among the consequences of this feature often documented in Pama-Nyungan is the development of overt third person pronouns from demonstratives and determiners. These 'borrowed' third person pronouns may retain the ERG/ABS case that reflects their previous non-argumental function. In such instances, the NP split divides first and second person from third person and other nominals.

So far as I have been able to determine, 'NP ergative splits' are found only in Pronominal Argument languages. The crucial feature in Pronominal Argument languages is the absence of an asymmetry in argument structure of the kind found in Lexical Argument languages, where objects are lexical items under a VP node. Typically all the verbal arguments in a Pronominal Argument language are marked in the same word or constituent, the verb or AUX; and even where they are distributed across the verb and AUX, all arguments are present within the inflectional morphology, not in separate constituents. Therefore, Pronominal Argument languages lack the basic subject/predicate division in syntactic structure common to both transitive and intransitive sentences that creates pressure for the grouping of transitive and intransitive subjects into a single Nominative case, as opposed to Accusative and Oblique case for objects. Pronominal Argument languages are non-configurational, and have syntactic structures that are equally compatible with either NOM/ACC case or ERG/ABS case marking on the pronominal arguments. In these languages, transitive and intransitive subjects do not fall together in a syntactic constituent [NP, S] that is distinct from the verb-AUX.



However, when the instrument is an alienable possession, the Comitative case suffix *-jarti* appears before the ERG case marker.

- (21) kunyarr- $\emptyset$  pa- $\emptyset$ - $\emptyset$  pinya nganpayi-rlu  
*dog-ABS MR1-3rd sg.S-3rd sg.O hit man-ERG*  
 mana-jawu-rlu  
*stick-COM-ERG*  
 'The man hit the dog with a stick'.

Examples such as these, adapted from Hudson (1978), demonstrate that an ergative marked nominal need not be coreferential with an AUX clitic, but simply associated with it. This association need not be one of instrumentality:

- (22) ngarrka-ngku ka-ZERO-ZERO  
*man-ERG PRES-3rd sg.NOM-3rd sg.ACC*  
 jarnti-rni karli- $\emptyset$  ngurra-ngka-rlu  
*trim-NONPAST boomerang-ABS camp-LOC-ERG*  
 'The man is trimming the boomerang in camp'.  
 Simpson & Bresnan (1983: 51)

Here is an exuberant example of ergative marking in Walmatjari:

- (23) yinya pa-ja-lu purrku-warnti-rlu  
*gave MR1-1st sg.O-3rd pl.S old:man-PL-ERG*  
 kariampal-jawu-rlu  
*west-COM-ERG*  
 mangarla-jawu-rlu karajarri-jawu-rlu  
*NAME-COM-ERG NAME-COM-ERG*  
 ngaju-kura-rlu jarntu-warnti-rlu  
*I-POSS-ERG countryman-PL-ERG*  
 'The old men from the west, who speak Mangarla and Karadjeri and who are my countrymen gave it to me'.  
 Hudson (1978: 18)

Examples such as these show clearly that ergative is a lexical, not an argumental grammatical case in Pama-Nyungan.

### 2.3. The syntactic 'shallowness' of ergativity

Comrie (1978) identifies the syntactic 'shallowness' of ergativity as the 'real puzzle' and Blake (1976) emphasizes that (aside from Dyrbal, to

which we will return) ergativity is generally 'superficial'. Where ERG/ABS case serves simply to coindex nominals with AUX arguments, we would not expect syntactic principles and processes to show ergative patterning. For example, the phenomena that have been labeled 'control' in Warlpiri (Simpson & Bresnan 1983) operate on an accusative basis, not an ergative one. Infinitival clauses in Warlpiri are complex nominals that carry elements generally labeled COMP that signal whether the infinitival is to be co-indexed with the subject or the object of the matrix clause; thus 'control', or as it has been otherwise described in Australia, switch reference (Austin 1981). Compare the following, adapted from Simpson & Bresnan (1983):

- (24) Ngarrka-ngku ka- $\emptyset$ - $\emptyset$   
*man-ERG PRES-3rd sg.NOM-3rd sg.ACC*  
 purlapa- $\emptyset$  yunpa-rni [karli- $\emptyset$   
*corroboree-ABS sing-NPAST boomerang-ABS*  
 jarnti-rninja-karra-rlu]  
 trim-INF-LOC-ERG  
 'The man is singing a corroboree, while trimming a boomerang'.
- (25) kurdu-ngku ka- $\emptyset$ - $\emptyset$  karnta- $\emptyset$   
*child-ERG PRES-3rd sg.NOM-3rd sg.ACC woman-ABS*  
 nya-nyi [ngurlu- $\emptyset$  yurpa-rninja-kurra- $\emptyset$ ]  
*see-NPAST seed-ABS grind-INF-LOC-ABS*  
 'The child sees the woman grind mulga seed'.

Warlpiri infinitival clauses are case-marked just as any other nominal expression is, to provide for coindexing with an AUX pronominal. The case suffixes *karra* and *kurra* are locative lexical cases that mark the preceding non-finite verb as oblique adjuncts; these locative phrases are then 'double' case marked ERG or ABS to provide for co-indexing with an AUX clitic. There is an interesting parallel between *karra/kurra* and the archaic English *a'*, said to derive from locative *at*.<sup>4</sup>

- (26) The man *a'* trimming a boomerang is singing a corroboree.  
 The child sees the woman *a'* grinding mulga seed.

The elements in an infinitival expression may be discontinuous, as with any other complex nominal (adapted from Nash 1980):

- (27) Ngarrka-ngku ZERO- $\emptyset$ - $\emptyset$   
*man-ERG PAST-3rd sg.NOM-3rd sg.ACC*  
 marlu- $\emptyset$  marna-kurra luwa-rnu nga-rninja-kurra  
*kangaroo-ABS grass-LOC shoot-PAST eat-INF-LOC*  
 'The man shot the kangaroo eating the grass'.

An example of a discontinuous purposive expression from Walmatjari (Hudson 1978):

- (28) kuyi-wu pa- $\emptyset$  paryani mana-nga  
*animal-PURP MRI-3rd sg.NOM climbed tree-LOC*  
 wanyjirri-wu lan-u-purru  
*kangaroo-PURP spear-NOMINALIZER-PURP*  
 'He climbed a tree to spear a kangaroo'.

(Purposive case in Walmatjari has the variants *wu* and *purru*.) In this discontinuous expression, the general common noun *kuyi* 'animal' precedes the more restrictive *wanyjirri* 'kangaroo'. The fact that the elements of a non-finite expression can be interleaved with other sentential constituents in 'discontinuous' expressions is evidence that the syntactic status of infinitival clauses is the same as that of other nominals, and that with both nominals and infinitivals, coindexing with AUX arguments as signaled by case particles is the basis of coreference.

#### 2.4. Passives in pronominal argument languages

In a Pronominal Argument language, the position of a nominal in the clause does not reflect its grammatical relation, since nominals do not carry grammatical relations. Therefore, NP movement rules such as PASSIVE do not apply.<sup>5</sup> A lexical passive (an intransitive construction marked passive in the verbal morphology) is found in some Pronominal Argument languages such as Navajo. But there would seem to be little pragmatic motivation for a passive in a language like Warlpiri, where a speaker may place focus or emphasis on either a patient or an agent by placing a nominal adjunct to the verbal argument in sentence initial position, the focus position before AUX. Or an AUX subject or object argument may be focused by adjoining the independent pronouns that are used for emphasis.

### 3. Dyirbal and historical change in Pama-Nyungan

We turn now to the interesting case of Dyirbal, a language apparently unique in the Pama-Nyungan family in its 'degree' or syntactic depth of ergativity. Dyirbal has an anti-passive construction that may be informally described as converting a transitive clause into a derived intransitive, with an underlying agent appearing in ABSOLUTE case and the underlying object DATIVE.

- (29)    *ɲuma*           *banaga-nʷu*  
*father-ABS returned*  
 'Father returned'.
- (30)    *yabu*           *numa-ɲgu*   *buɾa-n*  
*mother-ABS father-ERG saw*  
 'Father saw mother'.
- (31)    *ɲuma*           *banaga-nʷu*   *buɾal-ɲa-nʷu*           *yabu-gu*  
*father-ABS returned   saw-ANTIPASSIVE mother-DAT*  
 'Father returned and saw mother'. (Dixon 1979)

This change in grammatical relations makes deletion under identity possible in conjoined clauses such as those in (31). Here we see major syntactic processes crucially referring to ERG/ABS case, a situation quite different from that in Warlpiri and the majority of Pama-Nyungan languages. The significant typological feature that distinguishes Dyirbal is that it is not a Pronominal Argument language; it has no AUX constituent. Dyirbal has lexical arguments; nominals are not adjuncts but verbal arguments, and ERG/ABS are grammatical, syntactically relevant cases.

Dyirbal has an NP split. First and second person pronouns are NOM/ACC and as Dixon (1972) notes, there are properly speaking no third person pronouns. There are 'noun markers' that mark the four noun classes, and agree with the noun in case. These noun markers have complex paradigms that express semantic features such as animacy, gender, proximity and visibility and usually occur with a noun, although either the noun or the marker may occur alone; in the latter instance the marker is comparable in function to a pronoun.

The majority of Pama-Nyungan languages have "cross-referencing" pronouns in AUX or post-cliticized to the verb, and an NP split where first and second or all the clitic pronouns are NOM/ACC. Hale (1973) claims that in Warlpiri the clitic pronouns are derived from former independent pronouns. Blake (1979) notes that the



direction of change seems to have been from no bound pronouns to having bound pronouns. A historical process whereby pronouns lose word stress and become second position (AUX) clitics has been widely documented across languages.<sup>6</sup>

My proposal here is that Proto-Pama-Nyungan was a wholly accusative Pronominal Argument language with independent first and second person NOM/ACC pronouns, and ZERO third person pronouns, as is overwhelmingly the case in the daughter languages today. Nominals in Proto-Pama-Nyungan were adjuncts, adjoined predicates, with lexical cases, including LOCATIVE and INSTRUMENTAL. Most of the daughter languages developed clitic pronouns; a few, including Dyirbal, did not. INST (or LOC) case came to mark nominals coreferential with agent pronouns, as evidenced in the distribution of these cases at present. Dyirbal developed the 'noun markers' which express deictic or other very general semantic notions; these 'markers' are followed by another nominal which makes reference more explicit, as we have seen in the order of adjuncts in other Pama-Nyungan languages. Originally Dyirbal nominals were adjuncts, usually to a third person ZERO pronoun. Evidence for ZERO third person would be the fact that an utterance consisting of a verb alone (in certain tense/aspects) is unambiguously interpreted as having third person arguments; this is the case in many Pama-Nyungan languages today. The complex Dyirbal nominals (marker + noun), in the absence of an AUX constituent encoding the verbal arguments, acquired argumental status, and thus ERG/ABS case became grammatical cases. Hence the syntactic 'depth' of ergativity in Dyirbal, where we see syntactic processes such as subordination and control operating on an ergative system. Blake (1976: 303) observes:

'It seems difficult to imagine a language developing a case [ERG] that has no syntactic basis, much more likely that the ergative marker is a vestige of a once functioning ergative system.'

But, as we have seen, ERG case is clearly related to INST and LOC cases that have no syntactic functions (i. e., do not mark grammatical relations) and aside from Dyirbal and a few marginal examples we see no instances of ergative syntax.

The crucial feature proposed here for Proto-Pama-Nyungan was a constraint upon argument types, such that only (independent) first

and second person pronouns could serve as arguments, along with phonologically null third person singular.

An interesting transitional case with respect to the development of AUX clitics is Warramunga (Hale 1973), where there are two sentence types, those with independent pronouns and those with unstressed clitic arguments; but the 'free' and 'bound' arguments do not cooccur, as they do elsewhere. Janet Sharp (personal communication) reports similar restrictions on the distribution of free and clitic pronouns in Ngaanyatjarra.

The NP split universal in Pama-Nyungan today reflects the earlier status of the proto-language as an accusative Pronominal Argument language; in some of the daughter languages, Instrumental/Ergative case spread to nominals that acquired the syntactic function of arguments, moving into the 'vacuum' of a phonologically null third person marking. It is generally agreed that third person forms in Pama-Nyungan are so variable that no proto-forms can be reconstructed, unlike first and second person forms.

#### 4. Contemporary evidence

Recent findings on language change in Australia as the aboriginal languages suffer influence from English, and in many cases move towards extinction, lend support to the interpretation of the function of ergativity in these languages that has been suggested here. Annette Schmidt (1985) in a paper titled 'The fate of ergativity in dying Dyirbal' finds that in the Jambun community under study, the speakers of traditional Dyirbal were 35 or over, while a few younger people spoke an English-influenced Dyirbal. Each of these speakers had his own idiosyncratic 'grammar'. ERG case marking is first made morphologically simpler, then is lost as SVO word order emerges. Syntactic ergativity then declines. The loss of ERG case on nominals means that the NP split is no longer present, and syntactic processes can no longer be organized on an ergative basis. In Dyirbal we see free word order and syntactic ergativity decline along with ERG case marking, since in traditional Dyirbal ERG was a grammatical case that appeared on lexical (third person) arguments.

In a paper presented at the 1984 LSA meetings, titled 'Change in Progress in Warlpiri: cross reference clitics in the auxiliary', Bavin &

Shopen report that the language of young Warlpiri speakers shows the simultaneous loss of ergative case, free word order, and the AUX clitics. The simultaneity of these changes reflects the interdependence of these features in Warlpiri as a Pronominal Argument language. It appears that Warlpiri is moving towards the status of a Lexical Argument language. As nominals become arguments, AUX is redundant ('cross-reference' or 'agreement') and ERG case on nominals and free word order decay as nominals assume governed positions in the clause. The evidence suggests that as Warlpiri continues to decline, it will become a non-Pronominal Argument, accusative, configurational language before it finally becomes extinct. A Lexical Argument language does not need AUX pronominal clitics nor an NP ergative split.

## 5. Concluding remarks

The typological parameter proposed here contrasts languages like English that permit any referring expression to serve as a verbal argument with languages such as Warlpiri that permit only pronominal arguments. I suggest that the term 'cross-referencing' is a misnomer for these languages, where nominal expressions are optional adjuncts. The contrast between the argumental function of bound pronouns vs. the non-argumental functions of nominals is often reflected in an ergative NP split frequently found in Pronominal Argument languages distributed around the world and almost universal in Pama-Nyungan.

## Notes

1. It is a pleasure to thank Janet Sharp for sharing her knowledge of Australian languages with me, and for many hours of fruitful conversation on these topics. I also want to thank MaryAnn Willie, especially for her patient explanation of some aspects of Navajo to me. I am greatly indebted to Ken Hale and I also benefited from discussions with Peter Culicover, Richard Demers, Ann Farmer, Chisato Kitagawa, Adrienne Lehrer, and Susan Steele.
2. See Kinkade (1983) for an analysis of arguments and adjuncts in Salish.
3. See discussion in Willie (in press).

4. I do not intend to obscure the contrast between *karra* that identifies the nominal as an adjunct to the main clause subject, and *kurra* that identifies the nominal as an adjunct to the main clause object; I intend just to emphasize that both are locative cases. ERG (and ABS) case following these locative cases is optional, perhaps since it is redundant.
5. It is of interest that a rule altering grammatical relations in AUX is present. In Warlpiri, there is obligatory 'advancement' of first and second person goal arguments in ditransitive sentences to ACC case; first and second person are never marked DAT, only third person can be DATIVE. See discussion in Jelinek (1984).
6. See discussion in Steele et al. (1981).
7. In Jelinek (1984) I argued against the designation 'pro-drop' for languages like Spanish. Spanish restricts subjects to pronominal inflection in the verb, and thus there are no pleonastic subjects; there are nominal adjuncts to the subject pronominal inflection, not 'pro-drop'. Arabic also has constraints upon subjects, not upon objects. (See Jelinek 1981; 1983.) When a language is 'mixed' with respect to the argument type parameter, it is always the subject argument that is restricted, while the objects are not. For other kinds of restrictions upon subjects, see Jelinek & Demers (1982).

## References

- ANDERSON, STEPHEN R. 1977. On mechanisms by which languages become ergative, in: *Mechanisms of syntactic change*, ed. by Charles N. Li, 317–363. Austin and London: University of Texas Press.
- AUSTIN, PETER. 1981. Switch reference in Australia. *Lg.* 57.309–334.
- BAVIN, EDITH L., and TIMOTHY SHOPEN. 1985. Change in progress in Warlpiri: cross-reference clitics in the auxiliary. Paper presented at the 1984 LSA meeting.
- BLAKE, BARRY J. 1976. Introduction to Sect. D., in: *Grammatical Categories in Australian Languages*, ed. by R. M. W. Dixon, 485–494. New Jersey: Humanities Press.
- BLAKE, BARRY J. 1977. Degrees of Ergativity in Australia, in: *Ergativity*, ed. by Frans Plank, 291–305. London/New York: Academic Press.
- CHOMSKY, NOAM. 1982. *Some concepts and consequences of the theory of Government and Binding*. Cambridge, Mass.: MIT Press.
- CHUNG, SANDRA. 1976. *Case marking and grammatical relations in Polynesian*. Ph. D. dissertation, Harvard University.
- CHUNG, SANDRA. 1977. On the gradual nature of syntactic change, in: *Mechanisms of syntactic change*, ed. by Charles N. Li, 3–55. Austin and London: University of Texas Press.
- COMRIE, BERNARD. 1981. *Language universals and syntactic typology*. Chicago, Ill.: University of Chicago Press.
- DELANCEY, SCOTT. 1980. *An interpretation of split ergativity and related patterns*. Bloomington: Indiana University Linguistics Club.
- DIXON, R. M. W. 1973. *The Dyrirbal language of North Queensland*. Cambridge: Cambridge University Press.

- DIXON, R. M. W. (ed.). 1976. Grammatical categories in Australian languages. New Jersey: Humanities Press.
- DIXON, R. M. W. 1977. The syntactic development of Australian languages, in: *Mechanisms of syntactic change*, ed. by Charles N. Li, 366–415. Austin and London: University of Texas Press.
- DIXON, R. M. W. 1979. Ergativity. *Lg.* 55.59–138.
- HALE, KEN. 1970. The passive and ergative in language change: the Australian case, in: *Pacific Institute Studies in Honor of Arthur Capell*, ed. by Stephen A. Wurm & Donald C. Laycock, 757–781. Canberra: ANU.
- HALE, KEN. 1973. Person marking in Warlpiri, in: *A festschrift for Morris Halle*, ed. by Stephen R. Anderson & Paul Kiparsky, 308–344. New York: Holt, Rinehart and Winston.
- HALE, KEN. 1983. Warlpiri and the grammar of non-configurational languages. *Natural language and linguistic theory* 1.5–47.
- HUDSON, JOYCE. 1978. The case of Walmatjari grammar. Australian Institute of Aboriginal Studies, Canberra. New Jersey: Humanities Press.
- JELINEK, ELOISE. 1981. On defining categories: AUX and PREDICATE in colloquial Egyptian Arabic. University of Arizona dissertation, University Microfilms, Ann Arbor.
- JELINEK, ELOISE. 1983. Person-Subject marking in AUX in Egyptian Arabic, in: *Linguistic categories: auxiliaries and related puzzles*, ed. by Frank Heny & Barry Richards, 29–46. Dordrecht: Reidel.
- JELINEK, ELOISE. 1984. Empty categories, case, and configurationality. *Natural language and linguistic theory* 2.39–76.
- JELINEK, ELOISE, and RICHARD DEMERS. 1982. An agent hierarchy and voice in some Coast Salish languages. *IJAL* 42.167–185.
- JELINEK, ELOISE, and RICHARD DEMERS. 1983. On the absence of empty categories in Lummi. *Working Papers for the 18th International Conference on Salish and Related Languages*, Vancouver B. C.
- KINKADE, M. DALE. 1983. Salish evidence against the universality of 'noun' and 'verb'. *Lingua* 60.25–40.
- LI, CHARLES N., and SANDRA A. THOMPSON. 1977. A mechanism for the development of copula morphemes, in: *Mechanisms of syntactic change*, ed. by Charles N. Li, 419–444. Austin and London: University of Texas Press.
- MALLINSON, GRAHAM, and BARRY J. BLAKE. 1981. *Language typology*. Amsterdam: North-Holland.
- NASH, DAVID G. 1980. *Topics in Warlpiri grammar*, unpublished MIT dissertation.
- SANDOVAL, M., and ELOISE JELINEK. In press. The *bi*-construction in Apachean. To appear in: *Working papers in Athapaskan*, ed. by Keren Rice & Eung Do Cook. Berlin: Mouton.
- SCHMIDT, ANNETTE. 1985. The fate of ergativity in dying Dyirbal. *Lg.* 61.378–394.
- SILVERSTEIN, MICHAEL. 1976. Hierarchy of features and ergativity, in: *Grammatical categories in Australian languages*, ed. by Robert Malcolm Ward Dixon, 112–171. New Jersey: Humanities Press.
- SIMPSON, JANE, and JOAN BRESNAN. 1983. Control and obviation in Warlpiri. *Natural language and linguistic theory* 1.49–64.
- STEELE, SUSAN M. et al. 1981. *An encyclopedia of AUX: A study in cross-linguistic equivalence*. LI Monograph 5. MIT Press.

TRASK, R. L. 1979. On the origins of ergativity, in: *Ergativity*, ed. by Frans Plank, 385–404. London and New York: Academic Press.

WILLIE, MARYANN. In press. Why there is nothing missing in Navajo relative clauses in: *Working papers in Athapaskan*, ed. by Keren Rice & Eung Do Cook. Berlin: Mouton.

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# The case split and pronominal arguments in Choctaw\*

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Warlpiri, along with many other Australian languages of the Pama-Nyungan family, presents an interesting problem for case theory and government: a 'case split' whereby the second position AUX clitics that mark the person and number of the clausal arguments show a NOMINATIVE/ ACCUSATIVE case system, and the independent nominals (including free-standing pronouns) show an ERGATIVE/ABSOLUTIVE case system. In an earlier paper (Jelinek 1984) I argued that these distinct case systems in Warlpiri reflect the distinct syntactic functions of the clitics vs. the free nominals. The obligatory clitics occupy the clausal argument positions, and the Projection Principle applies in Warlpiri as in other languages; NOM/ACC are the *grammatical* cases. The nominals, that are optional (not necessary for sentencehood) and have no fixed order in the sentence, are adjuncts, and their ERG/ABS *lexical* case provides for coindexing with the argumental clitics.

The Muskogean language Choctaw has an equally interesting case split, as follows: various sets of person-marking verbal affixes show an 'active' case system, where subjects may show any one of three cases, Nominative, Accusative, or Dative. The optional free pronouns and nominals are marked in a different case system, with only a Subject/Oblique contrast.<sup>1</sup> Thus the free nominals appear to show grammatical relations more directly than the pronominal verbal inflection, a reversal of the situation in Warlpiri.

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This has been taken to be evidence that the free nominals are clausal arguments in Choctaw, and that the sets of person marking affixes on the verb are mere 'agreement'. In what follows, I argue that the pronominal affixes are argumental, that nominals are adjuncts in Choctaw, just as in Warlpiri, and that the case split in Choctaw provides evidence in support of, rather than against, the analysis of Choctaw as a Pronominal Argument (PA) language. Before looking at the evidence from Choctaw, it will be useful to clarify the relationship between configurationality, argument type, and case splits across languages.

*Argument type and configurationality.* A conspicuous typological contrast, and one that is clearly associated with configurationality, is that of argument type. There are languages, such as English, where only free lexical items, nominals and independent pronouns, can serve as the clausal arguments, as opposed to languages where there are morphologically bound person-marking elements (clitics and affixes) that fill the clausal argument positions. Languages of the latter type, Pronominal Argument languages, are abundantly represented in the Americas, Africa, Asia and Australia (Jelinek 1984, 1985). English and other languages without pronominal inflection or clitics, such as Japanese, are Lexical Argument (LA) languages. The definitional property of PA languages is that the pronominal arguments are *obligatory* (in at least main clauses), as opposed to the nominals that are 'optional' (that is, discourse controlled) constituents of the clause, and are adjuncts. In a PA language, nominals may be *adargumental* adjuncts, where their function is comparable to that of relative clauses or the adjoined nominals in an English sentence such as:

- (1) He, *the doctor*, tells me, *the patient*, what to do<sup>2</sup>

The adjoined nominals in (1) are coreferential with the free pronouns, and I assume that at some level of description, the coindexed elements form a complex expression. Or, nominals may be *adsentential* adjuncts:

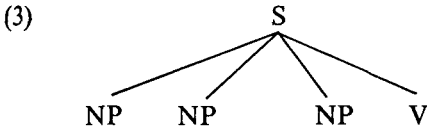
- (2) a. I met him *yesterday*  
 b. I saw him *here*

In (2), the underlined nominals are not coreferential with a pronoun, but are optional non-argumental additions to the clause. Oblique adjuncts are (VP or) sentence adjuncts (*on the table, with a knife*) and may or may not be required by the verb. Across languages, some oblique adjuncts are adpositional phrases, while others are case-marked NPs.

The defining feature of a configurational structure is the presence of one argument, that of the clausal subject, that differs from all other



arguments in being the *external* argument, the sole argument that is immediately dominated by the S-node [NP,S]. The clausal objects are under the VP node [NP,VP] and are the internal arguments. When the Subject is a Pronominal Argument, a verbal affix or a clitic, there is no lexical item to serve as [NP,S] and the resulting structure is non-configurational. However, there may be other sources of non-configurationality, unrelated to the question of argument type. Configurationality requires the presence of a unique [NP,S]. If all the clausal arguments are [NP,S], in a flat structure of the kind that has been proposed for Japanese (Farmer, 1984, Kitagawa, 1982):



Then again there is no contrast between internal vs. external arguments at the level of S-structure, and configurationality is absent.

Following Hale (1983), I assume that for every language, the distinction between internal and external arguments must be recognized in at least some levels of description (lexical structure and/or logical form). But the typological contrast that is of interest here is that languages may differ as to how this configurationality that is universally present at lexical or semantic structure is mapped into S-structure. While some languages maintain the internal/external argument contrast at all levels of structure, some do not, producing constructions that are non-configurational, by virtue of having either no [NP,S] or more than one [NP,S].

*Two kinds of 'splits' in argument type.* Crucially, languages are frequently 'split' or mixed, with respect to argument type. Examples such as English and Warlpiri, where there is no mixture of argument types, although very common, represent the extremes. Splits in argument type are of two kinds: a) splits with respect to a hierarchy of grammatical relations, and b) splits with respect to a person hierarchy. Splits with respect to grammatical relations conform to the following: if in a language only one of the clausal argument positions is necessarily filled by a pronominal argument, it is the Subject. These are the so-called *Pro-drop* languages (Spanish, Arabic) where independent pronouns referring to the Subject appear only in marked constructions where they are used for referential contrast, while Objects may be either lexical or clitics/ affixes. If more than one grammatical relation is necessarily marked by a PA, the verbal objects are included. These are the so-called 'cross-referencing' languages such as Warlpiri or Georgian. Because of the frequency of 'Dative Movement' or 'goal

advancement' across languages, indirect and direct objects seem to be nearly equally common as PAs. As far as I am aware, it is only in the Apachean languages (Southern Athabaskan) that *all* nominals that appear in a clause must be licensed by (coindexed with) some pronominal inflection, as in

- (4) Bill Sam yich'í yááłti'  
       3-to 3-spoke  
       'Bill spoke to Sam.' (Navajo)<sup>3</sup>

The hierarchy of grammatical relations seen in argument splits is:

- (5) Subject > Objects > Obliques

As we will see below, in Choctaw Subject, Object, Dative and Benefactive arguments are pronominal, appearing as verbal affixes.

The second type of split in argument type reflects a person hierarchy. Since in the discourse context first and second person are uniquely referential, additional descriptive material in the form of nominals and relative clauses is not necessary to aid in reference. However, reference to more than one third person can be made, and additional predicational material may be needed to pick out one of these. One of two functional strategies may be employed: a nominal may be adjoined to a third person pronominal, as in Warlpiri; or there may be a choice between pronominal or lexical arguments in the third person. This permits the speaker to select a pronominal argument if he is confident that his referential intent is clear, or a lexical argument if there is some possibility of confusion or to introduce a new referent. Nisgha, a Tsimshian language of the American Northwest, is an example of a language with pronominal first and second person arguments, and both pronominal and lexical arguments in the third person (Jelinek, 1986).

The presence of these two kinds of splits in argument type means that a language may be split with respect to configurationality also. That is, a language may manifest both configurational and non-configurational structures (Hale 1985). The Uto-Aztecan language Yaqui has incomplete sets of subject and object clitics, and thus is mixed both with respect to argument type and configurationality (Jelinek and Escalante, 1986).<sup>4</sup>

*Agreement.* It seems useful to define agreement as a condition across elements such that they match in some feature – person, number, gender. It is clear that when independent pronouns occur with person-marking affixes, that such matching is generally present. But this isn't always true with other nominals and pronominal inflection, as shown in example (1) above and in the following:

- (6) a. Las mujeres tenemos esperanza.  
 the women 1pl-have hope  
 'We women have hope.'  
 b. Las mujeres tenéis esperanza.  
 the women 2pl-have hope  
 'You women have hope.' (Spanish)

Such lack of agreement between AUX pronominal clitics and adjoined nominals is common in Warlpiri (Jelinek 1984).

Clear cases of agreement are phenomena such as the matching in number and gender seen with nouns and adjectives in Spanish, or the verbal suffix *-s* seen English.

- (7) She often speaks of him.

Agreement is clearly absent in languages that have pronominal inflection and *no* independent pronouns that this inflection could 'agree' with. This is the case in Winnebago, Coast Salish, Nisgha and Breton.<sup>5</sup> And when pronominal and lexical arguments are mutually exclusive, as with objects in Egyptian Arabic (Jelinek, 1981):

- (8) a. šuft-uh  
 'I saw him'  
 b. šuft il-walad  
 'I saw the boy'  
 c. šuft-uh, il-walad  
 'I saw him, the boy' ('Afterthought')  
 d. il-walad, šuft-uh  
 'The boy, I saw him' (Topic)  
 e. ana šuft il-walad  
 'I saw the boy' (Contrastive)

It is clear that the object suffix (*-uh*, 3sgm) is not functioning as agreement.

But when coreferential nominals and pronominal inflection are both present, the question is whether adjunction or mere agreement is present - which of the two is argumental in function. Does the NP simply 'trigger' a change in the shape of the verb, as in the English example (7), or is the verbal affix argumental, with the nominal either in apposition or in topic function (8)?

Bresnan and Mchombo (1987) discuss this question with reference to Chichewa, and show 'clear syntactic differences between agreement and the morphological incorporation of pronouns' in this language. Chichewa resembles Spanish in that the subject is always marked in the verbal

morphology, whereas objects may be either lexical and pronominal. Bresnan and Mchombo describe object marking as 'optional' and demonstrate convincingly that when object marking and an 'object' NP are both present, that NP is a topic – that is, adjoined to the sentence. Object marking in Chichewa is thus always argumental in status. These authors claim further that since subject marking is obligatory (always present), that in constructions with no 'subject' NP, the subject marking is pronominal (argumental); and, that in constructions where a subject NP is also present, the subject marking is *functionally ambiguous* – that is, can be taken as either argumental or agreement.

This indeterminacy in grammatical relations, though perhaps an unwelcome result, may be the fact of the matter in some languages; I will not address this question here.<sup>6</sup> However, I do want to argue that in some languages where coreferential NPs and pronominals occur, and the latter are obligatory, that there is evidence that the pronominal inflection is always argumental in status. Evidence of this kind includes:

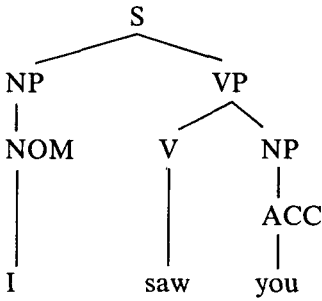
1. The optionality of NPs (that is, their presence is discourse controlled, and not a matter of sentence grammar). Clitics/affixes receive  $\theta$ -roles and occupy argument positions.
2. The specialized function of independent pronouns to show referential contrast. Independent pronouns occur in *marked* constructions.
3. The presence of construction types where independent pronouns are excluded (no pleonastic subjects). Some PA languages have 'fourth' person or impersonal pronominal affixes that also exclude nominal adjuncts, since referentiality either need not or cannot be amplified (Jelinek and Demers, 1985; Willie, 1987).
4. The absence of an adjacency condition on NPs and pronominal inflection. In Warlpiri, the order of nominal adjuncts is free. Where the order of nominals is not free, Pronominal Argument languages are always either verb final or verb initial, never 'SVO' – that is, nominals are not ordered adjacent to the inflected verb, in accordance with configurationally defined government relations (Jelinek, 1984).
5. The presence of 'non-standard' case and case 'splits'.

I turn to a discussion of this last point in the following sections.

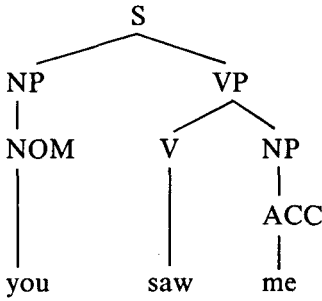
*Non-standard case and argument type.* In a lexical argument language such as English, with exclusively configurational structures, case is not a syntactic

primitive. Syntactic case is assigned at S-structure, and follows from more central notions such as government and adjacency.

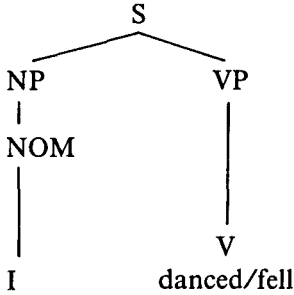
(9) a.



b.



c.



In these examples, case, along with grammatical relation, can be read off the tree, and the case of an NP follows directly from its position in the hierarchical structure.

Compare the following examples from Choctaw:

- (10) a. *chi-pjsa-li-tok*  
2sgACC-see-lsgNOM-PAST  
'I saw you.'
- b. *is-sa-pjsa-tok*  
2sgNOM-lsgACC-see-PAST  
'You saw me.'
- c. *hilha-li-tok*  
dance-lsgNOM-PAST  
'I danced.'
- d. *sa-ttola-tok*  
lsgACC-fall-PAST  
'I fell.'

In these one-word sentences, consisting of an inflected verb, there are pronominal affixes from a Nominative set and an Accusative set. We need information about the case set that a pronominal argument belongs to in order to interpret the sentence, since we can't read case off the structure – that is, there is no universal dependency between a particular position in the structure and a given case assignment.

In the absence of configurationality, as in these Choctaw examples, case is not an epi-phenomenon, but plays a crucial role in specifying the grammatical relations within a clause. It is of particular interest that it is just in languages with Pronominal Arguments that we see non-standard or 'exotic' case marking. By 'exotic' case I mean ergative, 'active' case, 'inverse' case (as seen in Algonquian and Apachean), and the 'positional' case found in Winnebago.<sup>7</sup> Where subjects do not always occupy a unique [NP,S] position, and where case assignment is not derivative from such a configuration, the relationship between case and grammatical relation may be more complex. Intransitive subjects may be marked differently from transitive ones, as in an ergative case system. As long as the subject is specified uniquely for each clause type, and there is no configurational pressure to assign all subjects the same case, subjects of different clause types can receive different case marking, cases that reflect other syntactic or semantic attributes of these subject types. In the 'active' case system seen in Choctaw, intransitive subjects may be marked either Nominative, Accusative, or Dative. Since intransitive clauses have only one argument, that argument is necessarily the Subject, and case may serve other functions. In Choctaw, there are some associations between case and semantic or  $\theta$ -role, and case contrasts can be used to mark volitionality on the part of the subject:

- (11) a. sa-ttola-tok  
lsACC-fall-PAST  
'I fell.'
- b. ittola-li-tok  
fall-lsgNOM-PAST  
'I fell (on purpose).'
- c. sa-habishko-h  
lsgACC-sneeze-PRED  
'I sneezed.'
- d. habishko-li-h  
sneeze-lsgNOM-PRED  
'I sneezed (on purpose).'

We will return to this topic below. The point I want to make here is just that while in configurational structures case follows directly from the position of an argument in the hierarchical structure, this is not true of non-configurational constructions, and therefore non-standard or 'exotic' case systems may appear.

*Case splits.* In languages with exclusively pronominal arguments, where nominals are always adjuncts (adargumental or adsentential), the pronominal arguments and free nominals may (but need not) exhibit different systems of case marking, reflecting their distinct syntactic functions. The simplest kind of such a case split is seen in Navajo and Papago (O'odham) where nominals (including free pronouns) have no case marking at all, in accordance with their non-argumental status. In Papago, where the nominal adjuncts are freely ordered and optional, there is considerable ambiguity in sentences with all third person arguments (Zepeda, 1983). Apachean, on the other hand, uses word order to provide for coindexing between nominal adjuncts and pronominal arguments (Sandoval and Jelinek, 1987).

Where case marking does appear on nominal adjuncts, it functions to provide for coindexing with the pronominal argument it is linked to. The case split seen Warlpiri is an excellent example. The Warlpiri pronominal clitics (Subject, Object, and Oblique) carry Nominative, Accusative, and Dative case. The verb and AUX are the only required constituents of the Warlpiri main clause. The optional freely-ordered nominal adjuncts carry Ergative, Absolutive and Dative case that provides for coindexing with the clitic arguments, and other kinds of Locative and Directional case that distinguishes nominals that cannot be coindexed.<sup>8</sup>

Case splits are not a necessary feature of pronominal argument languages. Basque has ERG/ABS case on both AUX clitics and free nominals, and Cupeño (Hill 1973) has NOM/ACC case on both pronominal arguments

and adjoined nominals. A case split is seen in four of the languages discussed in this volume: Navajo, Warlpiri, Georgian, and Choctaw. What is of interest here is that while case splits are not a necessary feature of pronominal argument languages, they are a feature that is clearly associated with languages of this type.

Note that in Warlpiri, the case of a pronominal argument (AUX clitic) reveals only its grammatical relation, while the case of a nominal adjunct gives two kinds of information:

- (12) a. Which pronominal argument it is to be coindexed with, if any (adargumental adjuncts coindex, adsentential ones do not).  
 b. Some semantic or thematic information.

All the lexical cases (ERG/ABS and LOCATIVE, etc.) in Warlpiri have thematic content. This semantic content is easily recognized in the LOCATIVE cases that appear on adsentential adjuncts, and is present also in the lexical cases that provide for coindexing; Ergative nominals refer to canonical *agents*, transitive subjects. (It should be noted in this connection that Ergative case in Australia is universally homophonous with, or identical to, some oblique case: Instrumental, Locative 'by', etc.) Absolutive nominals refer to canonical *patients* or *themes*: intransitive subjects and transitive objects.

*The Choctaw case split.* The focus of this paper is on the question of argument type and the case split in Choctaw. Choctaw is an ideal example of what I have described as a Pronominal Argument language; the verb is inflected for as many as four grammatical relations (Subject, Object, Indirect Object, and Benefactee). These grammatical relations are marked in sets of obligatory verbal affixes, and nominals are optional.<sup>9</sup> Yet Choctaw differs significantly from Warlpiri in the association between grammatical relation, case, and thematic role. The pronominal arguments (verbal affixes) in Choctaw show a non-standard 'active' case system, as we saw in the examples given earlier (10a-d). A list of the possible case arrays seen on the Choctaw verb given by Davies (1986) is as follows:

- (13) Class 1: bali:li 'run', NOM  
 2: laksha 'sweat', ACC  
 3: palammi 'suffer', DAT  
 4: bashli 'cut', NOM-ACC  
 5: a: 'give', NOM-ACC-DAT  
 6: paya 'call', NOM-DAT  
 7: yimmi 'believe', NOM-ACC & ACC-ACC  
 8: shilli 'comb', NOM-ACC & NOM-DAT



- 9: noksho:pa 'fear', NOM-DAT & ACC-DAT  
 10: ihaksi 'forget', NOM-DAT & DAT-ACC

Choctaw nominals and free-standing pronouns mark only a two-way contrast, that has been described as Nominative/Oblique. Furthermore, these nominal cases in no way resemble in phonological shape the case contrasts seen in the verbal affix sets:

- (14) a. anakosh           chi-bashli-li-tok  
 I-FOCUS-NOM 2sgACC-cut-1sNOM-PAST  
 'I cut you.' (I am the one who cut you.)  
 b. anakɔ           is-sa-hottopali-tok  
 I-FOCUS-OBL 2sNOM-1sACC-hurt-PAST  
 'You hurt *me*.' (I am the one that you hurt.)

Whatever the case of an *intransitive* subject affix, the case of an adjoined nominal is Nominative. Compare (14b) with (15b).

- (15) a. anakosh           ikhana-li-h  
 I-FOCUS-NOM know-1sgNOM-PRED  
 'I am the one who knows '  
 b. anakosh           sa-yimmi-h  
 I-FOCUS-NOM 1sgACC-believe (it)-PRED  
 'I am the one who believes (it) '  
 c. anakosh           am-ahwa-h  
 I-FOCUS-NOM 1sgDAT-think-PRED  
 'I am the one who thinks '

The fact that the free focus pronoun in all three of the examples in (15) is marked Nominative, as opposed to the Oblique focus pronoun in (14b), appears to be the basis for the analysis of (15b,c) as simple intransitives, and not as sentences with a phonologically null third person Nominative pronominal subject. The fact that the case on the morphologically bound first person marker in (15) can be either NOM, ACC, or DAT exemplifies the case 'split'.

The Case Compatibility Rules given for Warlpiri in Jelinek (1984) provide a simple algorithm for coindexing between the NOM/ACC clitics and the ERG/ABS nominals. ERG case is compatible with NOM case in transitives; ABS case is compatible with ACC case in transitives, and NOM case in intransitives. The problem in Choctaw is as follows: If the verbal affixes are argumental, as I claim, and the nominals only adjuncts, then why does the case marked in a pronominal affix not correspond uniquely to its grammatical relation, while the case that appears on a nominal adjunct

may be only Nominative/Oblique, apparently marking the grammatical relation of Subject uniquely? It appears that the verbal affixes are giving semantic/thematic information, while the nominals are showing grammatical relations. The situation appears to be opposite of that seen in Warlpiri. Let us examine these relationships between case and argumental status in more detail.

*Pronominal arguments in Choctaw.* The four sets of pronominal affixes that appear on the Choctaw verb are as follows:

(16) *Nominative*

|          |     |            |     |
|----------|-----|------------|-----|
| li       | lsg | il-/i-     | 1pl |
| ish-/is- | 2sg | hash-/has- | 2pl |
|          | ∅   |            | 3   |

(17) *Accusative*

|           |     |        |     |
|-----------|-----|--------|-----|
| (s)a-/si- | lsg | pi-    | 1pl |
| chi-      | 2sg | hachi- | 2pl |
|           | ∅   |        | 3   |

(18) *Dative*

|               |        |               |     |
|---------------|--------|---------------|-----|
| (s)am-/ (sə)- | lsg    | pim-/pi-      | 1pl |
| chim-/chj-    | 2sg    | hachim-/hachj | 2pl |
|               | im-/i- |               | 3   |

(19) *Benefactive*

|         |      |          |     |
|---------|------|----------|-----|
| (s)ami- | lsg  | pimi-    | 1pl |
| chimi-  | 2sg  | hachimi- | 2pl |
|         | imi- |          | 3   |

First person singular NOM is the only suffix; all the others are prefixes. The unmarked order of the prefixes is NOM-BEN-DAT-ACC. Nominative and Accusative third person are phonologically null, as is very frequently seen in pronominal argument languages; when neither first nor second person is marked, third person is the 'default' interpretation (Hale, 1983).

We have seen that there is no one-to-one correspondence between the case marking of a pronominal and its grammatical relation (Cf. (11) and (15) above; note also the possible case arrays given in (13)). Because of the exceptionless dependency between case and grammatical relation seen in standard case systems, as in English, many linguists working on Choctaw have chosen not to identify the pronominal affix sets with standard case labels. Heath (1977) calls set (16) above *Agentive*, set (17) *Patientive*, and set (18) *Dative*. Nicklas (1974) calls the sets *Actor*, *Patient* (or *Passive*)

and *Dative*. Munro and Gordon, whose work is primarily on the closely related language Chickasaw, differentiate among the sets by number: I, II, III. However, since I am using primarily Davies' examples, and commenting upon his analysis in particular, I will retain the NOM/ACC/DAT labels he has chosen, in order to avoid further confusion.

Previous writers on Choctaw have called the affix sets 'agreement'. (Nicklas uses the less technical term 'echoes'.) Heath (1977) is alone in calling the affixes 'pronominal'; he notes also that verbs plus their affix arrays '...can function as complete sentences without independent nominal or pronominal *adjuncts*' (p. 205; emphasis mine). While Davies calls the affixes 'agreement', and calls Choctaw a *Pro-drop* language, he notes (p. 38n.) 'Free standing pronouns generally occur overtly only for emphasis in Choctaw.' Similar observations on the contrastive function of independent pronouns in Choctaw are frequent in the literature. Choctaw nominals do not inflect for number but the verb may do so. The fact that a Choctaw noun need not agree either in number or in case with the verbal affix it 'triggers', and the fact that the inflected verb alone is a grammatical sentence, strongly suggest that the pronominal affixes have syntactic functions other than simple agreement.

*The case marking of Choctaw subjects.* How does a Choctaw speaker know what kind of case marking a pronominal subject receives (or is 'triggered' by a *pro*-dropped nominal)? Recall the case arrays given in (13) above, schematized here for convenience:

- (20) Class 1: NOM  
 2: ACC  
 3: DAT  
 4: NOM-ACC  
 5: NOM-ACC-DAT  
 6: NOM-DAT  
 7: NOM-ACC & ACC-ACC  
 8: NOM-ACC & NOM-DAT  
 9: NOM-DAT & ACC-DAT  
 10: NOM-DAT & DAT-ACC

Heath (1977) takes these case arrays to be lexical features of the verb, and Munro and Gordon (1982) argue convincingly that this is the situation in Chickasaw. Davies (1984) provides a full-scale treatment of Choctaw within the framework of Relational Grammar. He argues against interpreting the Choctaw case arrays as lexical features, and treats any construction with non-Nominative subject 'agreement' as a derived construction, with multiple levels of grammatical relations. Davies assumes that whenever the standard correspondences

- (21) SUBJECT   → NOMINATIVE  
 OBJECT       → ACCUSATIVE  
 OBLIQUE      → DATIVE

between case and grammatical relations do not hold, that the surface 'agreement' type reflects a grammatical relation present at some earlier stage of a complex derivation. That is, Subjects with Accusative agreement were earlier Objects (in accordance with the Unaccusative Hypothesis); Subjects with Dative agreement were earlier Obliques, etc.

Davies' crucial evidence in support of these multi-level derivational structures is surface case assignment itself, and it is difficult to see how the proposed derivations save us from assigning case arrays to a Choctaw verb as a surface lexical feature. In so far as these derivations (with Promotions, Retreats, and Inversions) are relatively productive, they can be given the status of syntactic processes. We saw earlier that there are a few minimal pairs where the speaker can choose between different case assignments in order to express volitionality (Cf. (11) above; 'sneeze' vs. 'sneeze on purpose', etc.) But the speaker does not ordinarily have such options, and Davies notes that for many of the alternations seen in transitive verbs, he was unable to elicit or observe any differences in meaning or use, despite repeated efforts. In many instances, then, assignment of case to an affix seems not to be motivated by semantic features or thematic roles. The example sentences in (15) above show that the verb *ikhana* 'know' takes a NOM affix, the verb *yimmi* 'believe' takes an ACC affix, and *ahwa* 'think' a DAT one, despite the semantic parallels present. Nicklas (1974, p. 33 and p. 67) shows that verbs with NOM pronominal subjects in the affirmative take ACC pronominal subjects in the negative and in the jussive mood (except for first person plural). The copula takes ACC subjects, and numerals and quantifiers NOM subjects. It appears that case and  $\theta$ -role are not always associated in a transparent way.<sup>10</sup>

The task of the child acquiring Choctaw may or may not be mediated by internalized representations of multi-level structures of the sort postulated by Davies; it would be interesting to see the results of psycholinguistic experiments designed to investigate this question. But it is clear that the Choctaw learner, as he acquires the knowledge that enables him to use a verb in a grammatical sentence, learns a) the subcategorizational features and case arrays associated with the verb, and b) the dependencies between argument position and thematic roles it exhibits. The task of the child acquiring English, as in

- (22) a. I like him.  
 b. He pleases me.  
 c. I forget the answer.

- d. The answer escapes me.
- e. Peter sent me a letter.
- f. I received a letter from Peter.
- g. I bought a car from him.
- h. He sold me a car.

is also to learn the subcategorization of the verb and the dependencies between thematic role and argument position. But in English the dependencies between argument position and *case* assignment are fixed; English is configurational. This fixed relationship between case and grammatical relation in English means that the speaker cannot employ contrasts in case assignment to the Subject to signal volitionality, as we saw in the Choctaw examples in (11) above. However, the English speaker can choose between different verbs, as in (22) above, to mark differences in volitionality or in the perspective of the speaker.

A primary problem, in the absence of a unique dependency between case and grammatical relation, is the identification of the Subject, or in Davies' terms, to specify the kind of case 'agreement' a given *pro*-dropped Subject triggers. Davies' solution is a set of disjunctive rules that make reference to multiple levels of grammatical relations. These rules are:

- (23) [8] Verb Agreement (final version)
- a. Nominals that head 3-arcs determine dative agreement.
  - b. Nominals that head 2-arcs determine accusative agreement.
  - c. Nominals that head 1-arcs determine nominative agreement.
  - d. Nominals that head Ben arcs determine benefactive agreement.

Applying (8a-d) disjunctively in the order specified to each nominal in a clause accounts for the agreement facts discussed in Chapters 2-6. (Davies 1986, p. 152) Davies is assuming the kind of case hierarchy suggested by Heath (1977) for Choctaw.

- (24) NOM > ACC > DAT

Davies' ordered disjunctive rules mean that the surface case of an affix is the lowest ranking case it carried at some earlier level in the derivation.

When we examine more closely the Choctaw verb classes and associated case arrays given in (13) and (20) above, we find that the task facing the language learner is not nearly so difficult as it might seem at first inspection. The following dependencies between the subcategorization of the verb, the associated case array, and grammatical relations are clearly evident:

- (25) 1. Ditransitive verbs (Class 5) have NOM/ACC/DAT case only. These verbs have NOM subjects.  
 2. Intransitive verbs (Classes 1, 2, 3) may have NOM, ACC, or DAT single arguments. This single argument is necessarily the subject.

There remain only the verbs with two arguments. Here again certain verb classes present no problems; these are the verbs with a single possible case array.

- (25) 3. Verbs with two arguments and a single case array (Classes 4,6) have NOM subjects.

This leaves us only classes (7-10) where two possible case arrays must be learned. For all these verbs, at least one case array permits a NOM subject:

|      |          |                   |          |           |
|------|----------|-------------------|----------|-----------|
| (26) | Class 7: | NOM-ACC & ACC-ACC | yimmi    | 'believe' |
|      | 8:       | NOM-ACC & NOM-DAT | shilli   | 'comb'    |
|      | 9:       | NOM-DAT & ACC-DAT | nokshopa | 'fear'    |
|      | 10:      | NOM-DAT & DAT-ACC | ihaksi   | 'forget'  |

In fact, verbs of Class 8 have a NOM subject in both possible arrays, and appears to be the kind of transitive/intransitive alternation commonly seen across languages.<sup>11</sup> This leaves only the non-standard case arrays for certain verbs, largely 'psychological predicates' where the subject is experiencer. These verb classes are not large in membership, and verbs with these special alternative case arrays must be so marked in the lexicon, just like the varieties of intransitives.

We are now ready to complete our set of generalizations on the case marking of Choctaw subjects. It turns out that for each of the non-standard arrays shown in (26) – the underlined arrays without a NOM affix – that the prefix closest to the verb is the Subject. The rule for specifying the subject in a Choctaw sentence is a simple disjunction:

- (27) a. The pronominal affix with NOM case is the Subject  
 b. If there is no affix with NOM case, the prefix that appears immediately before the verb is the Subject

As far as I have been able to determine, this rule works for all the example sentences in the literature on Choctaw.

Note that when we have identified the Subject, we have identified all the arguments, since ditransitives have the standard NOM/ACC/DAT case

array, intransitives have only one grammatical relation, and transitives have only two, so that the argument that is not Subject is an Object. Benefactives are always Benefactives, and do not enter into the algorithm. In order to show that the rule in (27) works, we need to have some independent tests for subjecthood. Munro and Gordon (1982) identify several such tests, and Davies employs those that work specifically for Choctaw. The test that will be useful for our present purposes will be the phenomena of switch reference.<sup>12</sup>

*Switch reference.* Munro (1983) gives the following examples of switch reference in Chickasaw (p. 223):

- (28) [1a] hi'lha-cha            talowa  
           danced-CD=SS sing  
           'He<sub>i</sub> danced and he<sub>i</sub> sang.'  
       [1b] hi'lha-na            talowa  
           dance-CD=DS sing  
           'He<sub>i</sub> danced and he<sub>j</sub> sang.'

[CD means that these clauses are coordinate. SS = same subject; DS = Different Subject.]

- (29) [2a] hilha-kat            ithaana  
           dance-SBR=SS know  
           'He<sub>i</sub> knows that he<sub>i</sub> danced.'  
       [2b] hilha-ką            ithaana  
           dance-SBR=DS know  
           'He<sub>i</sub> knows that he<sub>j</sub> danced.'

[SBR means that the first clause is subordinate; the change in the verb *dance* from (28) is conditioned by the suffix.]

Munro observes concerning these examples (p. 226):

'In sentences like (1) and (2) above, like subjects trigger the use of same subject markers, while unlike subjects trigger the use of different subject markers. Given one clause whose subject is known, the subject of a second clause in a syntactic relationship with the first is that argument of the second clause which, if it has the same referent as the subject of the first clause, will trigger the appearance of same-subject marking.'

According to Davies, there are certain multi-clause constructions where speakers may vary or disagree as to whether to employ same or different subject marking. These constructions involve Dative subjects. There are certain sentence types that across languages are typically *sui generis*, that

is, typically show syntactic structures that are unlike basic or central sentence types in the language. John Lyons (1967) in an insightful paper on this point, notes that possessive, existential and locative sentence are commonly 'exceptional' in this way, and that there is clear evidence that (p. 390):

'... in many, and perhaps in all, languages possessive and existential sentences derive (both synchronically and diachronically) from locatives.'

This appears to be the case in Western Muskogean. Heath (1977) gives the following examples from Choctaw (pp. 208-209):

- (30) [4] ka:h+at  $\emptyset$ -hikj:ya-h  
 car+Subj 3A-stand-PRES  
 'There is a car.'
- [5]  $\emptyset$ -a:-hikj:ya-h  
 3A-1sgD-stand-PRES  
 'I have it (car).'
- [6a] ka:h+at  $\emptyset$ -j-hikj:ya-h  
 car+Subj 3A-3D-stand-PRES  
 'He has a car.'
- [6b] hattak-at  $\emptyset$ -j-hikj:ya-h  
 man-Subj 3A-3D-stand-PRES  
 'Man has it (car).'
- [7] hattak+at ka:h(-at)  $\emptyset$ -j-hikj:yah  
 man+Subj car(+Subj) 3A-3D-stand-PRES  
 'Man has car.'

(In these examples, D = Dative, and A = Agentive, what Davies calls Nominative case). The locative verb 'stand' appears in both possessive and existential sentences. Note that the nominal adjuncts referring to both the possessor and the possessed item can carry the Subject case marking.

There are many typologically interesting aspects of Muskogean syntax that I do not have space to discuss here. Among these are Possessor Raising, whereby a possessor argument may be raised to subject status. Inalienable possession is marked via ACC case in these languages, and alienable possession via DAT case. Munro (1983, p. 228) defines Possessor Raising as follows:

'Possessor Raising converts a III argument into the new subject of a verb whose original I or II subject was possessed by the new III subject.' [Munro's I, II, III are Davies' NOM, ACC, DAT.]



Munro gives the following examples of the process (p. 229):

- (31) [16a] Dorisj-hattak-at        chaaha-hootokot ayoppa  
 Doris3III-man-SUBJ tall-because=SS happy  
 'Because Doris's husband is tall, he is happy.'
- [16b] Doris-at    j-hattak-at        in-chaaha-hootokot ayoppa  
 Doris-SUBJ3III-man-SUBJ 3III-tall-because=SS happy  
 'Because Doris has a tall husband, she is happy.'

Munro and Gordon (1982) identify Possessor Raising as one of several productive processes whereby original non-subjects may become subjects in Chickasaw. This class of processes includes 'III-Subjectivalization.' Munro (1983, p. 228) makes the following highly significant observation:

'In the types of sentences to which Possessor Raising and III-Subjectivalization apply, the original subjects are nouns which are often inanimate and normally not highly volitional. The III possessors and Dative arguments in these sentences which are subjectivalized... however, are virtually always human, and may be first or second person. Both rules tend to create preferred types of subjects... which are more appropriate topics of conversation in a given discourse context. Often the effect of applying these rules seems to be to create strings of same-subject clauses with a unified topic.'

The typical Western Muskogean utterance is a string of subordinate clauses ending with a main clause; coreference across these clauses is established via same-subject marking. And it is in such contexts that derived Dative subjects appear, to provide for continuity, as Munro tells us in the insightful passage quoted above.

It is of interest that not all Choctaw speakers agree on same or different subject marking in such contexts, as noted by Davies. Whether these are dialect differences, or individual differences, is not clear. Munro (1983) gives several very interesting examples where contrasts in same or different subject marking produces clear differences in the meaning of complex sentences.

*Case marking on Choctaw nominals.* The observant reader may have noticed an interesting feature of the case markers that appear on nominals: the parallels with same and different subject marking. There are several pairs of same/different subject markers in Choctaw, in all of which different subject is marked via some nasal feature, while same subject marking does not show nasality. (See examples (28) and (29) above, for equivalent markers in Chickasaw.) According to Nicklas, these suffixes on nominals are actually articles and demonstratives, and are present on the independent pronouns in an emphatic variety, since whenever independent pronouns appear, their function is contrastive. He lists the basic articles as follows:

- |      |         |             |          |
|------|---------|-------------|----------|
| (32) | -at     | -a          | 'the, a' |
|      | -mat    | -ma         | 'that'   |
|      | -pat    | -pa         | 'this'   |
|      | Subject | Non-Subject |          |

Compare the temporal same and different subject markers:

- (33) a.  $\emptyset$ -alah-mat       $\emptyset$ -impa-tok  
 came-when:SS ate-PAST  
 'When he<sub>i</sub> arrived, he<sub>i</sub> ate.'
- b.  $\emptyset$ -alah-ma,       $\emptyset$ -impa-tok  
 came-when:DS ate-PAST  
 'When he<sub>i</sub> arrived, he<sub>j</sub> ate.'

(Examples from Jacob, Nicklas and Spencer, p. 148.) Compare case marked nominal adjuncts:

- (34) a. hattak-mat       $\emptyset$ - $\emptyset$ -pisa-tok  
 man-that:SS 3NOM-3ACC-see-PAST  
 'That man saw him.'
- b. hattak-ma       $\emptyset$ - $\emptyset$ -pisa-tok  
 man-that:DS 3NOM-3ACC-see-PAST  
 'He saw that man.'

It is evident that the 'case' marking on Choctaw nominals is in fact performing the same function that same/different subject marking performs in complex sentences: to establish coreference. By virtue of marking coreference, it appears to mark case, since it marks nominals as either coindexed with the subject of the following verb, or as not so coindexed.<sup>13</sup> Further evidence for this is the fact that when a noun appears in isolation, without a following verb, then it does not show 'case' (=same/different subject) marking. Nicklas (1974, p. 98) gives the following examples:

- (35) a. Katak osh      chinki?  
 who FOCUS your-father  
 'Who is your father?'
- b. Hatak ma.  
 man that  
 'That man.'
- c. Hatak mat      anki.  
 man that:SS my-father  
 'That man is my father.'

The response to a question shown in (35b) carries neither SS nor DS marking, since there is no following predicate, while (35c) shows SS marking on 'that man' in order to coindex it with the predicate. (The copula is overt in Choctaw except in *third person present* forms; a third person past copular sentence would have a *tok* '3-be PAST' following the predicate noun.)

Relative clauses across languages are nominalized clauses -- referring expressions, like simple nominals. The use of the same/different subject markers on relative clauses forms a natural bridge for the extension of same/different subject marking to simple nominals, if this is what has occurred. The following examples are adapted from Jacob, Nicklas, and Spencer (pp. 190-191).

- (36) a. hattak ish-pjsa-kat                      a-nakfi  
           man 2sgNOM-see-REL:SS lsgACC-brother  
           'The man that you see is my brother.'
- b. hattak ish-pjsa-ka                      ikhana-li-h  
           man 2sgNOM-see-REL:DS know-lsgNOM-PRED  
           'I know the man that you see.'

It was noted above that Accusative case marks inalienable possession on Choctaw nominals, and Dative case marks alienable possession. These parallels with verbal inflection, the fact that the third person present copula is zero, and the fact that the independent pronouns also require articles, suggests that an analysis that treats nominals as predicates that are nominalized by suffixed determiners might give us a unified account of SS/DS marking in all their occurrences.<sup>14</sup> In any event, it seems clear that the kind of 'case' marking seen on Choctaw nominals does not serve to mark grammatical relations, but signals co- and disjoint reference between nominal adjuncts and the argumental pronominal affixes, just like the lexical case that appears on Warlpiri nominals.<sup>15</sup>

*Concluding remarks.* My purpose here has been to demonstrate how the case split in Choctaw, like the case splits seen in other Pronominal Argument languages, reflects the distinct syntactic functions of the argumental affixes as opposed to the nominal adjuncts. In Choctaw as in Warlpiri, the 'case' on nominals serves to mark coreference between arguments and their adjuncts. If we classify the nominal/determiner suffixes not as case, but as co- and disjoint reference markers, there still remains a case split in Choctaw, in the sense that there is in Navajo, where nominal adjuncts show no case contrasts at all, in keeping with their non-argumental status.

Also frequently seen in Pronominal Argument languages are other kinds of non-standard or 'exotic' case, such as the Active/Stative case appearing

on the Choctaw pronominal arguments. These varieties of case are found in languages where syntactic case is not uniquely determined by the position of an argument in a hierarchical configurational structure, and there is no structural pressure for all subjects, transitive and intransitive, to have the same case marking (usually phonologically null).<sup>16</sup> In Warlpiri, the  $\theta$ -grid of a verb appears separate from it, in the second position AUX, where the Subject, Objects and TENSE/ASPECT/MODALITY appear. In Choctaw, the  $\theta$ -grid of the verb is attached to it; all clausal arguments (except 1sg NOM) are prefixed to the verb, with NOM first, if there is a NOM argument. TENSE/ASPECT/MODALITY are verb (and sentence) final. Warlpiri, like O'odham and other non-configurational languages of its kind, have free word order except for AUX. Choctaw, and Navajo, Nisgha, Salish, and other non-configurational languages of its kind, have the verb either first or last. In contrast to both of these types of non-configurational languages, in English the subject is not adjacent to the verbal objects at any level of description; at S-structure the English verb governs its objects, and the VP governs the subject. While it appears that all languages show differences between internal and external arguments at the level of LF or lexical structure, there is parametric variation at S-structure in this respect that can be traced to differences in argument type and the morphology/syntax boundary.

## NOTES

1. Linguists working on Western Muskogean have used a number of different names for these case contrasts, as we will see below.
2. Examples such as these do not of course show that English is a pronominal argument language (as Speas 1987 claims), since (a) pronouns are not *obligatory* constituents of all English sentences, with which nominals, when present, *must* co-occur; and b) the English pronouns in this example are fully stressed lexical items, rather than morphologically bound person marking affixes and clitics. (See Jelinek 1984). Speas also borrows the term 'lexically projected' from Saxon (in press) who argues that Slave (Athabaskan) is not a pronominal argument language. The term 'lexically projected' cannot apply to languages like Warlpiri, where the clitic arguments appear in AUX, which not a member of any lexical category; neither can it apply to Navajo, where the clausal arguments appear in the verb + postpositional complex, which is not a lexical category.
3. Young and Morgan (1980) cite a few 'fixed expressions' that are exceptions to this generalization.
4. Yaqui has first and second person subject clitics, and no third person subject clitics. It has third person object prefixes, and no first/second person object prefixes. This split across person reflects the fact that first and second person subjects are typically old information in the discourse context, while a third person subject may be a new referent. First and second person as objects are typically new information, receiving full stress, while third person often is not.
5. Jelinek (1985). In Breton, according to Anderson (1982), there are independent pronouns in topic function, not as subjects. Pronominal objects are marked in 'conjugated prepositions' in complementary distribution with lexical objects.

6. Hale (1986) discusses this issue with respect to Warlpiri.
7. In Winnebago, the imperfective verb is marked as to whether the pronominal subject is 1) standing, 2) sitting, or 3) lying or in motion (the elsewhere case). Adjoined nominals are also marked (1,2,3). With a transitive verb, if the nominal and verb agree, the nominal is a Subject adjunct; if the nominal and verb do not agree, the nominal is an Object adjunct. If an intransitive verb has a nominal adjunct, it must agree in positional marking or the sentence is ungrammatical. The positional markings, like case, serve to coindex pronouns and adjuncts. (Jelinek, 1985). I am indebted to Helene Lincoln, a native speaker, for information on Winnebago.
8. In Warlpiri, ERG, ABS and DAT are Primary Lexical cases that require coindexing of a nominal with a clitic pronoun; the LOC and directional cases are Secondary Lexical cases that exclude coindexing with a clitic, and are equivalent to prepositional phrases in English. Nominals with a Secondary Lexical case (a locative expression) may be subsequently marked with a Primary Lexical case to form complex NPs [man-ERG, camp-LOC-ERG]. = [[man in camp]-ERG]. See Jelinek (1984) for examples.
9. In Choctaw as in other pronominal argument languages, nominals in *adjunct* function are optional (that is, discourse controlled, not a part of sentence grammar) but *predicate* nouns are required constituents of copular, existential, and possessive sentences. Predicate nouns are not arguments, of course. In constructions of this type, the predicate noun and the copular or existential verb can be recognized as forming a complex predicate.

Munro (1987) describes a locative prefix *aa-* as follows: '*Aa-* occurs in agreement with the locative argument; a locative can't be used with verbs like *hilha* 'dance' without an *aa-* prefixed to the verb.' Munro gives the following example sentences:

- i)        *hilha-tok*  
          He danced.
- ii)       *aa-hilha-tok*  
          He danced there.
- iii)      *aboha aa-hilha-tok*  
          He danced in the room.

It seems likely that oblique arguments of this kind are invariably third person in syntax, and that it would be interesting to investigate the possibility that locative arguments are also marked on the Muskogean verb. Other writers have cited comparable instrumental prefixes.

10. Payne (1982) gives an interesting treatment of the kinds of associations seen between thematic role and the case of pronominal affixes in Chickasaw, in an investigation of degrees of transitivity.

11. As in 'He shot the man' vs. 'He shot at the man', reflecting aspect, control or other contrasts.

12. Among other tests for subjecthood are a prefix *hoo-* in Chickasaw that marks plural subjects. Nicklas cites a *ho-* that occurs in polite commands in the plural in Choctaw, but not in declaratives. There are particles *okla* and *tokla* that can optionally be used to mark plural and dual subjects, respectively. Other than switch reference, the test for subjecthood also cited by Munro and Gordon is the case marking that appears on nominals. Since the analysis given here will be based on the identification of same and different subject marking with nominal 'case', we can't use nominal 'case' as a test for subjecthood independent of switch reference.

13. Davies (personal communication) informs me that he has data suggesting that the suffixed 'articles' where same and different subject marking occurs are in fact verbalizing elements. This is a very interesting possibility, since it suggests that the nominal adjuncts are in fact clausal in structure.

14. It would also give us an account of the fact that *two* nominals may be marked with the 'subject' case in possessive sentences. We would no longer have an apparent violation of functional uniqueness, or of the Extended Projection Principle (Chomsky, 1982). We would have two subordinate clauses marked *same subject*, with the extended function of *same topic*, where possessor raising has occurred. These constructions would then be reminiscent of the Japanese 'double subject' constructions, where there is some overlap in function of the *-wa* (Topic) and *-ga* (Subject) markers. The questions of topic, focus, and subject in Choctaw need detailed investigation. Suppose we recognize the free focus pronouns as being in topic, rather than subject function, in examples like those in (15) above, repeated here:

- 15) a. anakosh ikhana-li-h  
I-FOCUS know-1sNOM-PRED  
'I am the one who knows'
- b. anakosh sa-yimmi-h  
I-FOCUS 1sgACC-believe (it)-PRED  
'I am the one who believes (it)'
- c. anakosh am-ahwa-h  
I-FOCUS 1sgDAT-think  
'I am the one who thinks'

Then there would no longer be any motivation for treating (15b,c) as intransitives. An analysis of these sentences as transitives with third person phonologically null NOM arguments, referring to the proposition that is 'believed' or 'thought' would gain us a significant reduction in the number of case arrays, and all intransitive sentences would have NOM subjects. A similar reduction in the case arrays postulated for transitive sentences could be achieved, if we treat the 'psychological' predicates in the same way, as having phonologically null 3 person NOM subjects, and focus pronouns (when present) as in topic function. The result would be an analysis of Choctaw sentences having the standard case arrays:

- i) NOM (Intransitives)  
ii) NOM/ACC (Transitives)  
iii) NOM/ACC/DAT (Ditransitives)

The single problematic case array remaining would be the ACC/ACC case array that can optionally appear with four predicates: *anatoklo* 'doubt'; *anofohka* 'understand'; *yimmi* 'believe' and *banna* 'want' (Davies, p. 64). Remaining problems of analysis would include the change from NOM to ACC case in Negative sentences and the Jussive mood, copular sentences, etc.

15. It was noted above in the section on Agreement that languages with pronominal arguments typically lack pleonastic subjects; this follows from the lack of a requirement for an [NP,S] constituent, and the fact that independent pronouns are freed to take on a specialized function, that of referential contrast. Weather and modal verbs in these languages typically exclude independent pronouns as adjuncts, since no referential contrast is possible. In Choctaw, weather verbs can't take a nominal adjunct, and are described as 'subjectless'. However, these verbs can take SS/DS subject marking, when in complex sentences, as examples given in Nicklas (1974) show.

- i) kapassā chik ą miyah  
[be cold FUT DS say]  
'They say that it will get cold.' (Nicklas, 1974, p. 142)

This example shows that the Choctaw weather verbs are not 'subjectless' but have a third person pronominal subject, and that this subject is not the same as the subject of the main clause verb *miyah*.

16. Dyirbal is a well-known example of a language with an Ergative 'split', that does not have pronominal arguments; Dyirbal has no AUX clitics. However, word order is quite free and thus government does not depend upon configurationality. Dyirbal is atypical of the large Pama-Nyungan language family in lacking the argumental clitics, and it has developed some 'deep' syntactic ergativity, in contrast to the 'shallow' morphological ergativity seen in the rest of the family, for example in Warlpiri. In Warlpiri, the syntax operates on NOM/ACC principles, and ERG/ABS case serves only to coindex nominal adjuncts. In Dyirbal, syntactic innovations have produced a grammar in which NOM/ACC are the grammatical cases for 1 and 2 person, and ERG/ABS are the grammatical cases for nominals. Demonstratives with ERG/ABS case now function as third person pronouns (Dixon, 1972).

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## II.2

**Jelinek, Eloise** (1993) Ergative Splits and Argument Type. *Papers on Case and Agreement. MIT Working Papers in Linguistics* 18: 15 – 42.

This paper expresses for the first time the hypothesis that relational hierarchies -- like those found in the person hierarchies that dominate ergative case splits in Salish -- are a direct consequence of the architecture of the clause, paired with Diesing's (1992) mapping hypothesis. 1<sup>st</sup> and 2<sup>nd</sup> person arguments along with 3<sup>rd</sup> person arguments linked to DP adjuncts are construed as definite and presupposed. They thus can't serve as variables and must move to case positions (Nom/Acc/Absolute) outside the VP. 3<sup>rd</sup> person pronouns marked with lexical ergative case, by contrast, are allowed to be bound by existential closure, and thus remain VP internal. Evidence for the proposal comes from morphology, the (un)availability of determiner quantification and the way in which sentences with one DP are interpreted.



## Ergative "Splits" and Argument Type\*

*Eloise Jelinek*

Ergativity presents a number of puzzles for universal grammar. The initial puzzle may be why ergativity appears at all; what motivates variation across languages in so central a feature as the case systems for the core direct arguments. Another puzzle is the variety of ergative "splits": across languages, ergativity appears in a number of syntactic contexts, and it is rarely distributed uniformly within these domains. These facts suggest that ergative features may be determined by a number of factors. In this paper I give an account of a type of ergative "split" that is seen in certain languages with "rich" pronominal inflection, marking both subjects and objects. I argue that the case splits lend support to the claim that this pronominal inflection is argumental in status, rather than agreement, and I suggest that this parametric feature is associated with ergativity elsewhere. I show how case splits and other aspects of argument structure in these languages relate to a hierarchical ranking of arguments according to definiteness/specificity; this ranking is language universal at logical form, and is parameterized in the syntax (Diesing and Jelinek, in press).

Nominative/Accusative and Ergative/Absolutive case marking systems are defined as in (1).

- |       |                            |                                                                    |
|-------|----------------------------|--------------------------------------------------------------------|
| 1. a. | NOMINATIVE:<br>ACCUSATIVE: | Intransitive subjects and Transitive Agents<br>Transitive Patients |
| b.    | ABSOLUTIVE:<br>ERGATIVE:   | Intransitive Subjects and Transitive Patients<br>Transitive Agents |

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A familiar example of an accusative system is English, where case is visible only on pronouns.

2. a. He (NOM) hit him (ACC).
- b. He (NOM) went away.

The examples in (3) show an ergative case marking system in Lummi, a Straits Salish language:

3. a. t'Em'-t-s=|E'=Ø  
      hit-TRANS-3ERG=PAST=3ABS  
      'He hit him.'
- b. ye'=|E'=Ø  
      go=PAST=3ABS  
      'He left.'

The third person Ergative pronoun *-s* appears in (3a); it is suffixed to the Transitive *-t*. (I mark suffixes with a hyphen, and clitics with the equal sign.) Ergative case is most frequently "split" in distribution with respect to

4. a. Clause type (main vs. subordinate)
- b. Tense/Aspect (Imperfective vs. Perfective)
- c. Person (first/second vs. third)

(See Dixon, 1979.) Splits in Tense/Aspect are prevalent in Indo-Iranian, the languages of the Indian sub-continent, and the Caucasus. Splits across person are prevalent in Australia, Southeast Asia, the Americas, and appear sporadically elsewhere. Clause splits usually appear along with one of the other split types. In this paper, I focus on the very commonly seen type of split across person that produces "person hierarchies", where first and second person are set apart from third person, and ergativity appears only in the third person. The goal of this paper is to provide answers to the following questions concerning this kind of Ergative split:

5. a. Why do Ergative "splits" across person occur?
- b. Why do first and second person "outrank" third person in these splits?
- c. Why do these splits appear in languages with "rich" pronominal inflection – where both subject and object may be marked in the verbal complex?

Previous efforts to explain these splits have appealed to extra-syntactic factors that may be loosely termed "pragmatic"; that is, these explanations have invoked the expectations and beliefs of speakers, and other aspects of communicative contexts. I will point out what appear to be serious flaws in these proposals.

As far as I have been able to determine from the literature, the splits across person are confined to a subset of languages with the feature described in (5c). Not all languages of this type have ergative splits across person and person hierarchies, but the person splits apparently occur only within this type. These languages have the parametric feature

6. [ + Pronominal Arguments]

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(See Jelinek 1984, 1990; Baker 1992.) In this paper, I will give an account of the dependencies between the case splits across person, the feature [+PA] and the Definiteness Hierarchy.

The analysis I propose will be based on recent work in the syntax/semantics interface, having to do with the distribution of arguments in quantified contexts. Here I make use of some results of a cross-language study of quantification in natural language (Bach, Jelinek, Kratzer and Partee, in press). I will also rely on work on indefinites and existential closure by Molly Diesing (1990, 1992), and recent work by Diesing and Jelinek (in press).

The plan of this paper is as follows: an example of an ergative split across person and the associated hierarchy will be given, in order to show how they work. I note some previous "pragmatic" explanations of these splits and hierarchies, and point out why I think they are wrong. Then I examine in some detail these aspects of the syntax of Lummi, a Straits Salish language, and develop an explanation for these phenomena based on certain properties of argument structure in the syntax and at logical form. I close with some comments on the implications of this proposal for universal grammar.

### **1. Person hierarchies and how they work**

The core features of these hierarchies is the fact that the syntax of sentences with first/second person arguments is distinct from that of sentences with third person arguments.

7. First/second person arguments are Nominative/Accusative, and third person arguments are Ergative/Absolutive.

For brevity, I will use the terms "Local" for first and second person arguments, and "Non-local" for third person arguments.<sup>1</sup> Local arguments are said to "outrank" Non-local, since

8. In transitive sentences, certain argument combinations are excluded:  
Non-local agents with Local patients.

\* 3 > 1, 2

An example of the kind of "paradigm gap" or excluded sentence type identified in (8) is seen in Lummi.

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<sup>1</sup> Describing a person hierarchy in Algonquian, Hockett (1966) used the terms "Local" to refer to first and second person arguments, who are the speaker and hearer or the speech-act participants, and "Non-local" to refer to third person arguments, the "outsiders".

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|       |                 |                 |           |
|-------|-----------------|-----------------|-----------|
| 9. a. | xč̣i-t-oNEs=sEn | 'I know you.'   | NOM ACC   |
| b.    | xč̣i-t-∅=sEn    | 'I know him.'   | NOM ABS   |
| c.    | xč̣i-t-s=∅      | 'He knows him.' | ERG ABS   |
| d. *  | _____           | 'He knows me.'  | * ERG ACC |
| e.    | xč̣i-t-N=sEn    | 'I am known.'   | NOM       |

There is no transitive sentence corresponding to (9d), where a Non-Local agent acts upon a Local patient. A Passive construction, (9e), can be employed in its place.

In some languages with person hierarchies, there is also a ranking within Local arguments: either first outranks second, or second outranks first; however, there is no consistent pattern to these rankings across languages, in contrast to the constraint that Non-local cannot outrank Local.<sup>2</sup>

Pragmatically based explanations for person hierarchies. The commonly accepted explanations for person hierarchies have been developed primarily within anthropological linguistics. In an early account of hierarchies of this kind, Michael Silverstein (1976) proposed a "natural explanation" for ergative splits and person hierarchies. Silverstein ranks referring expressions along a scale as shown in (10).

|     |              |       |              |         |           |              |
|-----|--------------|-------|--------------|---------|-----------|--------------|
| 10. | 1 & 2 >      | 3 >   | proper >     | human > | animate > | inanimate... |
|     | pronouns     | nouns | common nouns |         |           |              |
|     | Accusative → |       |              |         |           | ← Ergative   |

For a particular language, the Ergative split will occur somewhere along this scale. Silverstein considers Ergative to be a "marked" case, that appears on arguments when they appear in a "marked" semantic role. "Referents of items to the left in the hierarchy are natural instigators of actions, whereas, as one moves to the right, each class is progressively less likely to occur as transitive subject". Dixon (1979) elaborated these claims, speaking of the natural egocentricity of the human speaker that would lead him to think of himself as the prime mover, as the prototypical agent. Next most likely agent would be the addressee, and so on.

A somewhat different explanation was offered by Mallinson and Blake (1981): the person hierarchies reflect "topic-worthiness", or the "relative center of interest"; the speaker and hearer are more interested in themselves than in other people or things. Similar views were expressed by DeLancey (1981), who sees the person hierarchies as reflecting "attention flow"; the speech act participants direct their attention more to themselves/each other than to outsiders.

The most immediate difficulty with the proposals of Silverstein and others is that contrary to their claims concerning the "naturalness" of certain agents, it is

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<sup>2</sup> Plural pronouns, that may include both Local and Non-local referents, present more variability in person hierarchies.

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not true that the referents of third person pronouns or nouns are statistically less likely to be agents than first or second person referents. In fact, text counts by Wierzbicka (1981) directly contradict these claims.

However, the central problem with non-syntactic (pragmatic or discourse oriented) accounts of this kind is that they deal with probabilities, with a ranking of referents according to whether they are more or less likely to appear as agents -- whether they are "natural" agents, "centers of interest", etc. However, in the person hierarchies we are not dealing with statistical findings that would reflect beliefs and expectations, but with absolute grammaticality. We are faced with hard-edged syntactic facts: defective paradigms, excluded sentence types, and the distribution of voice alternates. Finally, if pragmatic or psycholinguistic factors are the explanation for person hierarchies, then we might reasonably expect them to be language universal, and their association with languages having the typological feature of "rich" inflectional morphology would remain a mystery.

### 2. Lummi (Straits Salish) syntax

In order to consider in more detail the case split and associated person hierarchy in Lummi, we will need to review certain aspects of Salish syntax. A persistent problem in the analysis of Salish is whether these languages show a contrast between noun and verb as lexical categories. I have argued (1993; in press) that this question has not been posed correctly, since the Salish word classes that may be designated "noun" and "verb" on lexico-semantic grounds differ in important ways from these classes as they are generally understood; in particular, there are no lexical classes that are uniquely associated with the maximal projections NP and VP. All open class (inflectable) words, whatever their morphological or lexical features, fall together in a single syntactically defined category, the Predicate. There is no copula (in any paradigm) to derive sentences with a "predicate noun" or adjective, and thus we may say that every sentence contains a verb only if we call all words (except adverbs) verbs.

Predicates and Determiner Phrases. Salish Predicates have the following two properties: a) they take clitic subjects in finite clauses, and (b) they serve as the lexical heads of Determiner Phrases. The default reading of the Determiners is definite, but indefinite readings are also possible in context.

- |        |                                                            |                                                        |
|--------|------------------------------------------------------------|--------------------------------------------------------|
| 11. a. | čey=1E'=sEn<br>work=PAST=1sNOM<br>'I worked.'              | cE čey=1E'<br>DET work=PAST<br>'the (one that) worked' |
| b.     | si'em=sx <sup>w</sup><br>chief=2sNOM<br>'You are a chief.' | cE si'em<br>DET chief<br>'the (one that is a) chief'   |
| c.     | → tčik <sup>w</sup> Es=†<br>tired=1pNOM                    | cE tčik <sup>w</sup> Es<br>DET tired                   |

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- |    |                                                  |                                                                        |
|----|--------------------------------------------------|------------------------------------------------------------------------|
|    | 'We are tired.'                                  | 'the (one that is) tired'                                              |
| d. | leN-t-Ø=sEn<br>see-TR-3ABS=1sNOM<br>'I see him.' | cE leN-t-En<br>DET see-TR-1sNOM<br>'the (one that) I see' <sup>3</sup> |

Any predicate may occur as the lexical head of either a finite clause or an adjoined Determiner Phrase.

- |        |                                                                                    |                                      |
|--------|------------------------------------------------------------------------------------|--------------------------------------|
| 12. a. | k' <sup>w</sup> ey'=Ø<br>hungry=3ABS<br>'He is hungry, (the one who is) my child.' | cE nE-NE nE<br>DET my-child          |
| b.     | nE-NE nE=Ø<br>my-child=3ABS<br>'He is my child, the (one who is) hungry.'          | cE k' <sup>w</sup> ey'<br>DET hungry |

With "psych" predicates, the Experiencer is a Possessor, and the Source is the subject.

- |        |                                                                         |
|--------|-------------------------------------------------------------------------|
| 13. a. | nE-sλ'e'=sx <sup>w</sup><br>1sPOSS-value=2sNOM<br>'I like you.'         |
| b.     | si'em cE nE-sλ'e'<br>chief DET my-value<br>'The one I like is a chief.' |

Determiner Phrases are adjoined subordinate structures that cannot serve as predicates.

- |        |                          |                     |
|--------|--------------------------|---------------------|
| 14. a. | si'em=sx <sup>w</sup>    | 'You are a chief.'  |
| b. *   | cE si'em=sx <sup>w</sup> | [you are the chief] |
| c.     | nE-sλ'e'=sx <sup>w</sup> | 'I like you.'       |

<sup>3</sup> There are two types of "headless" transitive relative clauses, depending upon whether it is the agent or patient argument that is the head of the relative.

- |      |                                                                             |                          |
|------|-----------------------------------------------------------------------------|--------------------------|
| i.   | leN-t-oNEs=sx <sup>w</sup><br>see-TR-1/2sACC=2sNOM<br>'You saw me'.         | Finite transitive clause |
| ii.  | cE leN-t-Ex <sup>w</sup><br>DET see-TR-2SUBORD<br>'the (one that) you saw.' | Patient-headed relative  |
| iii. | cE leN-t-oNEs<br>DET see-TR-1/2ACC<br>'the (one that) saw you/me'           | Agent-headed relative    |

## Ergative “Splits” and Argument Type

- d. \* cE nE-sλ'e'=sx<sup>W</sup> [you are the one I like]

A full DET P cannot occur in the clause initial position. In languages with copular verbs, full NPs may serve as “predicate nouns”, as in the glosses for the ungrammatical (14b,d). I take these facts as evidence against a possible null copula analysis for Salish. Parallel evidence is provided by oblique arguments. There is a single preposition in Lummi, which marks adjuncts oblique. Other locative and directional notions are expressed within the predicate. Oblique adjuncts also cannot serve as predicates.

15. a. čey=sEn 'E cE 'e'1EN  
 work=1sNOM PREP DET house  
 'I work at/in the house.'
- b. \* 'E cE 'e'1EN=sEn  
 PREP DET house=1sNOM  
 [I am at/in the house]

This preposition cannot occur with the pronominal object suffixes, which are confined to the Predicate. Ex. (15b) is ungrammatical because it contains no predicate other than the one bound by the Determiner ; there is no copular verb to build a VP containing a Prepositional Phrase. The generalization is:

16. All open class words in Lummi are predicates.

Therefore, I use the term “Predicate” in this paper rather than “Verb Phrase”. However, I want to emphasize that nothing in the analysis of the ergative split given here in any way hinges upon the question of predicates in Salish; I will return to this point in the last section of this paper. I won't try to ignore this problem in the analysis of Salish by calling the Predicates “verb phrases”, but we may think of Salish Predicates as equivalent to VPs for present purposes, and no harm will be done.

### 2.1 External Arguments and INFL

The Salish languages show a second position clitic sequence marking the Inflectional categories of Mood, Tense, Modality, and the Subject. These unstressed clitics follow the first word in the sentence, the Predicate. These clitics are:

17. The sentence operators
- |                                                                    |                                                                                                                                       |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <p>a. <u>Tense clitics</u></p> <p>=sE' Future</p> <p>=lE' Past</p> | <p>b. <u>Modal clitics</u></p> <p>=yEq Optative</p> <p>=yEx<sup>W</sup> Evidential</p> <p>=č'E' Probability</p> <p>=q Conditional</p> |
| <p>c. <u>Mood</u></p>                                              |                                                                                                                                       |

=’E Interrogative

Tense occurs in both main and subordinate structures; Mood and some of the Modals are confined to main clauses. When no overt Tense marking is present, the temporal reference of the sentence is open.

18. External arguments: the Subject clitics
- |    |                                                                                                             |    |                                                                  |
|----|-------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------|
| a. | Local subjects<br>Nominative case<br>=sEn ‘I’<br>=sx <sup>W</sup> ‘you’<br>=t ‘we’<br>=sx <sup>W</sup> helE | b. | Non-local subjects<br>Absolutive case<br>=∅<br><br><br>‘you pl.’ |
|----|-------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------|

Third person intransitive subjects and transitive objects are phonologically null; this is the Absolutive. All other arguments are overt. Clitic order is:

19. PRED=Q=MODAL=TENSE=SUBJECT

Examples of simple intransitive sentences:

- |        |                                                               |    |                                                               |
|--------|---------------------------------------------------------------|----|---------------------------------------------------------------|
| 20. a. | ye’=E=sE’=sx <sup>W</sup><br>go=Q=FUT=2sNOM<br>‘Will you go?’ | b. | ye’=tE’=sEn<br>go=PAST=1sNOM<br>‘I went.’                     |
| 21. a. | čey=∅<br>work=3ABS<br>‘He/she/they worked.’                   | b. | čey=č’E’=∅<br>work=MODAL=3ABS<br>‘Probably he (etc.) worked.’ |

The null Absolutive provides a default reading for constructions with no overt subject marker. The examples in (21) cannot be interpreted as predicates alone, as anything less than complete functional complexes. They are finite sentences with a *definite* third person Absolutive argument. The null Absolutive has a fixed person value, which is a property of pronouns.

## 2.2 Internal arguments

The Straits Salish predicate contains a root, any derivational affixes, and any internal arguments. Internal arguments include Accusative and Absolutive patients, Ergative agents, and Possessors. These arguments are **morphologically** internal; they are suffixes which precede the clitic string. The clitics are unstressed, and the suffixed internal arguments, which are phonologically integrated into the predicate may receive the main word stress.

22. leN-t-óNEλ =tE =sx<sup>W</sup>  
see -TR-1pACC =PAST=2sNOM  
‘You saw us.’

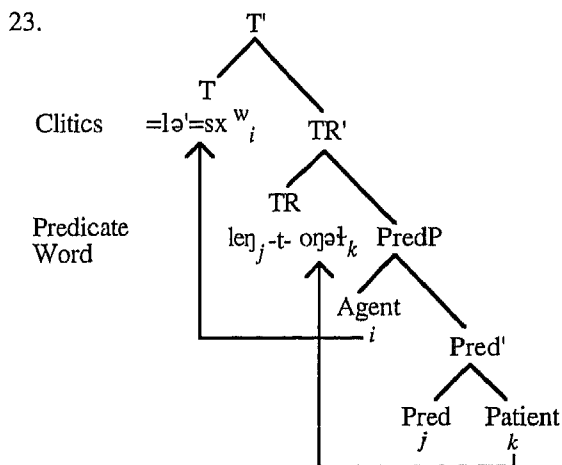


## Ergative "Splits" and Argument Type

The predicate constitutes a phonological word which combines with the unstressed clitic string, to produce a sentence.

Local objects. Note that in transitive predicates, the root is obligatorily followed by one of the Transitivity suffixes (TR), which overtly mark the valence of the predicate.<sup>4</sup> Transitivity is a very productive process in Salish. I follow Murasugi (1992) in assuming that Transitive is an Inflectional head. Kratzer (1992) relates transitivity to a Voice node, and Diesing and Jelinek (in press) assign similar properties to an Aspect node above the VP. The case features (ACC, ERG) are associated with the TR head, which immediately precedes the internal argument. The case features (NOM, ABS) are associated with the T head, which precedes the external argument.

Relevant features of the structure I assume for (22) are shown in (23). Relevant paths of the pronominal arguments are included.



<sup>4</sup> The Salish languages typically have a set of these valence markers, used to mark differences in the degree of agentivity or volitionality assigned to the agent; this feature has traditionally been designated "control" by Salishanists.

- i. t'Em' -t-oNEŋ =sx<sup>w</sup>  
hit-Control:TR-1pACC=2sNOM  
'You hit us on purpose.'
- ii. t'Em' -n-oNEŋ =sx<sup>w</sup>  
hit-Non-Control:TR-1pACC=2sNOM  
'You hit us by accident/finally managed to hit us.'

The "non-control" transitivity can convey inefficiency as well as inadvertence, as the glosses for (ii) suggest. When the Passive -N appears without a preceding Transitivity, it marks the subject as affected, an Unaccusative or Middle.

- iii. hes-N  
sneeze-AFF  
'He sneezed.'

There are no NPs in argument positions, and no NP movement. Two different movement processes are assumed: these are 1) a Pollock (1989) style raising via head movement of the predicate, and 2) the raising of pronouns to incorporate into the elements that govern them -- here I follow Baker and Hale (1990). The Tense clitic, *lE'*, assigns Nominative case to the subject (Agent) pronoun, *sx<sup>w</sup>*. This subject pronoun incorporates into its governor, Tense. The Predicate root *leN* undergoes head movement to adjoin to the Transitivity; the resulting Transitive Predicate assigns ACC case to the internal argument *oNEt*; and this internal argument incorporates into the predicate. Finally, the predicate as a whole, including the internal argument, is a single phonological word which undergoes head movement (Travis 1984) to adjoin to the clitic string, Tense and Subject. These two types of movement produce the observed surface order of the constituents.<sup>5</sup>

The final result of these movement processes is a predicate-clitic complex which contains all the direct arguments, which are exclusively pronominal and inflectional. There are no free-standing pronouns in Lummi, and no NPs in A-positions.<sup>6</sup> A problem to be addressed here is what motivates the attachment of these pronominal arguments to the predicate root.

It follows from (8) above that the transitive object can be Local only if the subject is also Local. The examples in (24) show the Accusative suffix *-oNEs*, which refers either to first or second singular objects, or to second person plural objects.

24. a. *t'Em'-t-oNEs=sx<sup>w</sup>*                      b. *t'Em'-t-oNEs=sEn*  
       hit-TR-1/2ACC=2sNOM                    hit-TR-1/2ACC=1sNOM  
       'You hit me.'                              'I hit you.'

The fact that the Accusative suffix *-oNEs* is underspecified between first and second person produces no problems of interpretation, since the following subject clitic disambiguates the sentence.

Evidence for the raising analysis: serial predicates. There is a serial predicate construction in which predicates are combined into a complex predicate. In this construction, only the first word of the complex predicate raises to join the clitic string. The second word remains in a position following the clitics.

25. a. *'Ey=sx<sup>w</sup> swEy'qE'*                      b. \* *'Ey swEy'qE'=sx<sup>w</sup>*  
       good=2sNOM man                        good man=2sNOM  
       'You are a good man.'

<sup>5</sup> Mood/Modality clitics precede the tense clitic. I assume that Tense raises to adjoin Modality.

<sup>6</sup> There are predicates that are third person in syntax, and may appear with Determiners, that mark the deictic features of person and number typically seen in pronominal paradigms. See Jelinek in Bach et al, in press.

## Ergative "Splits" and Argument Type

The second predicate may be transitive, with an internal argument.

26.        'En'e=|E=sEn        |eN-t-oNEs  
              come=PAST=1sNOM see-TR-1/2ACC  
              'I came to see you.'

Evidence that the serial predicates form a constituent is provided by the fact that the Passive takes scope over the entire complex.

27.        'En'e=|E=sx<sup>w</sup>        |eN-t-N  
              come=PAST=2sNOM see-TR-PASS  
              'You were visited.' ('come-to-see'd')

### 2.3 The Ergative split and the person hierarchy

The case split across person produces the following set of internal arguments in transitive clauses.

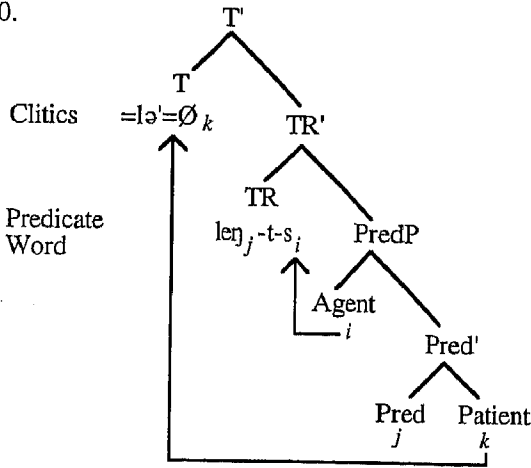
- |                                                                                                                 |                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <p>28. a.     <u>Local</u><br/>                    -oNEs lsg or 2 ACC<br/>                    -oNEt lpl ACC</p> | <p>b.     <u>Non-Local</u><br/>                    NULL 3 Absolutive<br/>                    -s     3 Ergative</p> |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|

If a sentence has at least one Local argument, it has a Local (Nominative) subject, because of the excluded sentence type. The patient in a transitive sentence may be either Local (ACC) or Non-local (ABS). Sentences with only Non-local arguments have a distinct syntax; they are ergative constructions where agents are morphologically internal arguments, and patients (or intransitive subjects) are Absolutive external arguments. The examples in (29), as in (3) above, show sentences with all Non-local arguments.

- |                                                                                                  |                                                                                                                                 |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <p>29. a.     t'ilEm'=Ø<br/>                    sing=3ABS<br/>                    'He sang.'</p> | <p>b.     q'<sup>w</sup>oy-t-s= E'=Ø<br/>                    die-TR-3ERG=PAST=3ABS<br/>                    'He killed him.'</p> |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|

Example (29b) shows the third person Ergative suffix, *-s*. This Ergative suffix marks a third person agent, and is morphologically internal to the predicate. Note that the Ergative pronoun precedes the Tense clitic in (29b). With Local Agents, Tense precedes the Nominative clitic, as we saw in (22,23). The structure I assume for the Ergative construction is indicated in (30):

30.



leN-t-s            =lE' = Ø  
 see-TR-3ERG    =PAST=3ABS  
 'He killed him.'

Murasugi (1992) argues that in an Accusative language, Tense is a strong feature, and thus Nominative case is assigned to the subject; while in an Ergative language, the Transitive feature is strong, and it is the object that receives Nominative case. This results in the movement of NP arguments to Spec positions so as to produce “crossed paths” for Accusative structures, and “nested paths” for Ergative structures. Suppose we amend this proposal so as to apply across construction types in an “ergative split” language, rather than to languages as a whole. In (23) above, the Accusative construction, we saw that raising of the pronominal arguments produced crossed paths; in (30), the raising of the Agent and Patient pronouns produces nested paths. The analysis proposed here differs from that of Murasugi in that I claim that the Ergative agent in Lummi, despite its morphologically internal position, has subject properties. I return to this point in the next section.

Only transitive constructions with all Non-local arguments show Ergative case. The Absolutive is by definition either an internal or an external argument; in Lummi, it is internal only in transitive sentences where the Agent is Local.

31.            q<sup>w</sup>oy-t-Ø =lE' =sx<sup>w</sup>  
 die-TR-3ABS =PAST=2sNOM  
 'You killed him.'

In the example sentences given here, I distinguish also among null arguments, the third person Absolutes, with either hyphens or equal signs. Absolutive arguments are neither suffixes nor clitics; they are the default interpretations, the significant absence in a specified position (internal or external) of an overt argument where some member of a small closed paradigm is required.

## Ergative "Splits" and Argument Type

We have seen that it is in sentences with "mixed" arguments that the excluded sentence type occurs: while [Local > Non-local] is grammatical, the reverse order is not. Note that the excluded sentence type contains only *internal* arguments, suffixes which compete for the same position.

32. a. \* leN-t-oNEs-Es                    or:    b. \* leN-t-Es-oNEs  
       see-TR-1/2ACC-3ERG                    see-TR-3ERG-1/2ACC  
       [he saw you/me]

In lieu of this ungrammatical construction, a Passive sentence may be employed.<sup>7</sup>

33.        leN-t-N=sEn  
       see-TR-PASS=1sNOM  
       'I was seen.'

Constructions of the type shown in (33) are clearly Passive, since they permit an optional oblique agent adjunct.

34.        t'Em'-t-N=sx<sup>w</sup>                    ('E    cE    swEy'qE')  
       hit-TR-PASS=2NOM (PREP DET male)  
       'You were hit (by a/the man).'

The reflexive, as is frequently the case in ERG/ABS systems, is an affix undifferentiated as to person or number. (Affixes of this kind appear in NOM/ACC systems as well.) The Lummi Reflexive suffix, like the Passive, derives an intransitive from a transitive construction which includes a TR marker.

35. a.        leN-t-oNEt    =sEn                    b.    leN-t-oNEt    =∅  
       see-TR-REFL =1sNOM                    see-TR-REFL =3ABS  
       'I look at myself.'                    'He looks at himself.'

Note that in (34b), the Ergative marker does not appear; again, it would be competing for the same position as the reflexive, if the construction were transitive.

---

<sup>7</sup> Leading a linguistically naive Lummi speaker through a paradigm of this kind is very instructive. When asked to produce an ungrammatical transitive, the consultant, who has been flying through a paradigm like (9a-c) above, comes to a halt when he arrives at (9d), appears lost for a moment, and then triumphantly (if uneasily) comes up with the Passive (9e). Frantz (1989), writing on the person hierarchy in Southern Tiwa, where there are portmanteau forms for each argument combination, apologizes for the fact that he cannot produce any excluded (and starred) sentences because there simply aren't any forms for the ungrammatical [\*Non-local > Local] argument combinations.

**4. Definiteness and the person hierarchy**

We have seen that a sentence of the type [\*Non-local > Local] is ungrammatical, since the Accusative and the Ergative are both internal arguments which compete for the same position in the structure. Is the excluded sentence type merely an artifact of the case split, or is the case split a syntactic device for excluding a violation of the hierarchy? I propose that it is the person hierarchy that is primary, and that this hierarchy is motivated by a particular semantic property of pronominal arguments: definiteness. Definiteness enters into the picture as follows.

In a transitive sentence, arguments are necessarily either same or different in locality value. Where they differ in locality,

36. a. Local arguments must be external;  
 b. Non-local arguments must be internal.

If this distribution of arguments is not determined by pragmatic or discourse factors, then we need to find another property of the arguments that is responsible. There is a universal contrast between Local vs. Non-Local arguments with respect to the semantic feature of definiteness.

37. a. All Local arguments are definite;  
 b. All indefinite arguments are Non-local.

That is, some Non-Local arguments are indefinite, but no Local arguments are. (In)definiteness is a semantic property that typically finds overt expression in the syntax, and is central to the quantificational component of the grammar.

I am proposing that the person hierarchy can be identified as a kind of subject/object asymmetry. By excluding sentences where a Non-local argument is subject while a Local argument is object, and requiring a Passive instead, we exclude certain potential sentences with indefinite subjects. It is well known that some languages require subjects to be definite/specific (Diesing 1992). Let us review the paradigm given in (9) above.

|       |                |                 |           |
|-------|----------------|-----------------|-----------|
| 9. a. | xči-t-oNEs=sEn | 'I know you.'   | NOM ACC   |
| b.    | xči-t-∅=sEn    | 'I know him.'   | NOM ABS   |
| c.    | xči-t-s=∅      | 'He knows him.' | ERG ABS   |
| d. *  | _____          | 'He knows me.'  | * ERG ACC |
| e.    | xči-t-N=sEn    | 'I am known.'   | NOM       |

Where all arguments are Local, or where arguments are mixed in locality value, the external argument, the subject, will be necessarily definite. It is only in sentences with exclusively third person arguments that the possibility of indefinite subjects could arise.



This obligatory coindexing between the Absolutive pronoun and the adjunct follows from the fact that the Ergative pronoun is exclusively *definite*, just like the Local pronouns, and thus may not be coindexed with a nominal. The adjunct, which may be given an indefinite reading, can be coindexed only with the Absolutive patient. On the definite reading, the adjunct is a topic; on the indefinite reading, it is predicative, corresponding to an adjoined relative.

There is reason to believe, as some Salishanists have argued, that transitives with two adjuncts represent English language influence (Kinkade 1983). Some Salish languages (cf. Lushootseed) exclude transitive sentences with two adjoined Determiner Phrases. Sentences of this kind are quite marginal in Lummi, and when elicited, the order of the adjuncts is free.

41. ?? k<sup>W</sup>EniN-t-s=Ø sE stēniy' cE swEy'qE'  
 help-TR-3ERG=3ABS DET female DET male  
 'The woman helped the man.'  
 Or: 'The man helped the woman.'

The preferred construction with two adjuncts is the Passive; order of the Direct and Oblique adjuncts is again free.

42. k<sup>W</sup>EniN-t-N=Ø 'E sE stēniy' cE swEy'qE'  
 help-TR-PASS=3ABS PREP DET female DET male  
 'The man was helped by the woman.'

The Ergative as Subject. Languages classed as ergative appear to differ in the subject properties shown by Ergative and Absolutive arguments (Anderson, 1976; Levin, 1983; Marantz, 1981). Bittner (in press) argues that in West Greenlandic Inuit, there is an abstract category of subject that cuts across the morphological case distinctions. Reflexives, a primary test for subjecthood, are highly variable in ergative languages. When transitive, they may be bound by an Ergative argument; Murasugi (1992) identifies this as a problem for her analysis of the Absolutive as subject in Warlpiri.

The Ergative in Lummi has syntactic subject properties, although morphologically it is an internal argument, a suffix (-s) that precedes the clitic string. Since the Salish predicate is always inflected for its subject, there are no control phenomena to demonstrate subjecthood, and reflexives are intransitives. Evidence for subject properties of the Ergative is provided by coreference of arguments across conjoined clauses, where the intransitive Absolutive subject is coindexed with the Ergative:

43. ye'=Ø t'ok'w 'i' yEsoS-t-s=Ø sE stēniy'-s  
 go=3ABS home and tell-TR-3ERG=3ABS DET wife-3POSS  
 a. 'He<sub>i</sub> went home and he<sub>i</sub> told his wife.....'  
 b. \* 'He<sub>i</sub> went home and his wife told him<sub>i</sub> .....





Table 1.

| <u>Sentence Type</u> | <u>Internal Argument</u> | <u>External Argument</u> |
|----------------------|--------------------------|--------------------------|
| Accusative           | Local Object<br>ACC      | Local Subject<br>NOM     |
|                      | Non-Local Object<br>ABS  | Local Subject<br>NOM     |
| Ergative             | Non-Local Subject<br>ERG | Non-Local Object<br>ABS  |

Intransitive Non-local subjects are also Absolutive, but other than in existential or generic contexts, intransitive subjects in Lummi appear to be exclusively presuppositional, definite or specific. New referents may be introduced into the discourse as subjects by the use of existential and presentational sentences. The following example sentence begins a narrative; the gloss was provided by the consultant, Al Charles (Charles, Demers and Bowman, 1978).

44.        *le'*=Ø        ɔ'E    'E cE swelEx    cE    swiqoEɬ....  
               there=3ABS EVID at Orcas Island DET young man....  
               Out on Orcas Island there lived a young man....

The predicate *le'* is one of a number of locative and existential predicates that may introduce indefinite subjects.

To summarize: All Local (Nominative/Accusative) arguments, and Ergative arguments, are definite. Although there are Nominative, Accusative, Ergative and Absolutive arguments of Salish Predicates, only Absolutives may be coindexed with Determiner Phrases, which are subject to indefinite readings. Indefinites are transitive objects, other than in existential or presentational contexts. If we set aside these special contexts, we can generalize as follows for transitive sentences in Lummi:

45. a.        Agents must be subjects;  
       b.        Subjects must be definite.

This gives us a unified account of the case split, the "person hierarchy", and the "One Nominal Interpretation" generalization, which had appeared to be arbitrary and unrelated. These features conspire to produce the following constraint on indefinites.

46.        Only Absolutive arguments (non-subject, third person) are coindexed with Determiner Phrases.

We do not see this kind of constraint on the distribution of NPs in languages with the feature [+ Lexical Arguments], such as English for example.

**5. The Mapping Hypothesis**

The requirement that subjects be definite is familiar to us from other languages. An explanation for this constraint on subjects is provided by the work of Diesing (1990, 1992), who investigates the "mapping" of syntactic expressions into logical representations. Following up on work of Heim (1982) and Kamp (1981), in which definite and indefinite NPs are analyzed as introducing variables within a tripartite semantic structure consisting of an operator, a nuclear scope, and a restrictive clause, Diesing makes an important contribution to our understanding of quantificational structures. This is the Mapping Hypothesis, a proposal that the syntactic representation of a sentence is derived by splitting the syntactic tree into two parts which correspond to the two major parts of a quantificational structure of the sort developed by Heim. This makes the VP the domain of default existential closure.

47. The Mapping Hypothesis (Diesing 1990, 1992)

1. VP maps into the Nuclear Scope (the domain of existential closure)
2. IP maps into the Restriction (on some quantifier).

Assuming some version of the VP-internal Subject Hypothesis, Diesing argues that agents (including indefinite agents) receive their interpretation within the VP, where they are theta-marked, and raise to [Spec, IP]. On Diesing's view, the subjects of Individual Level predicates (Kratzer 1989; Carlson 1977) are assumed to be controlled from [Spec, IP] and thus do not raise from [Spec, VP]. These subjects may not be indefinite:

48. \* A man is tall.

This sentence is acceptable only on a generic reading.

49.            GEN<sub>x</sub>    (x is a man)            (x is tall)  
                          Restrictive clause       Nuclear Scope

The Mapping Hypothesis provides for two possible interpretations of indefinites, which can a) introduce variables which are bound by existential closure, or b) can be introduced in the restrictive clause of some operator. Diesing concludes that

50. a. By LF, indefinite subjects cannot be in [Spec,IP]
- b. By LF, quantificational objects must raise out of VP.

Presuppositional objects undergo quantifier raising to positions adjoining the sentence by LF.

Diesing and Jelinek (in press) note that the constraints stated in (50) lead to a hierarchical distribution in the syntactic tree of arguments defined in terms of definiteness/specificity.

51. By LF, definites must be "higher" in the tree than indefinites.

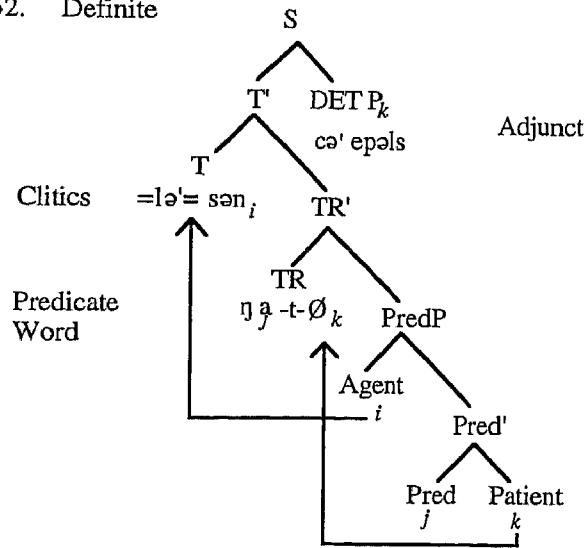
The semantic feature of presuppositionality determines the syntactic distribution of arguments at logical form. In some languages, such as English, this distribution of arguments can be delayed until LF, but other languages appear to apply some constraints of this type in the syntax. These are languages which require (non-existential) subjects to be definite/specific; Salish, as we have seen, is an example.

**6. The Absolutive and existential closure**

The Mapping Hypothesis was formulated with reference to accusative languages, where the internal argument is accusative. In Lummi ergative constructions, the ergative argument is morphologically internal, yet it is the definite subject.

The definiteness hierarchy is based on presuppositionality -- very roughly, leaving aside quantified contexts, raised agents, etc. -- subjects are "old" information, while the predicate is "new" information. In an ergative construction, we do not see the canonical connection between the internal argument position and new information: accordingly, the scope of default existential closure must be different. Consider the definite and indefinite readings of the following sentence.

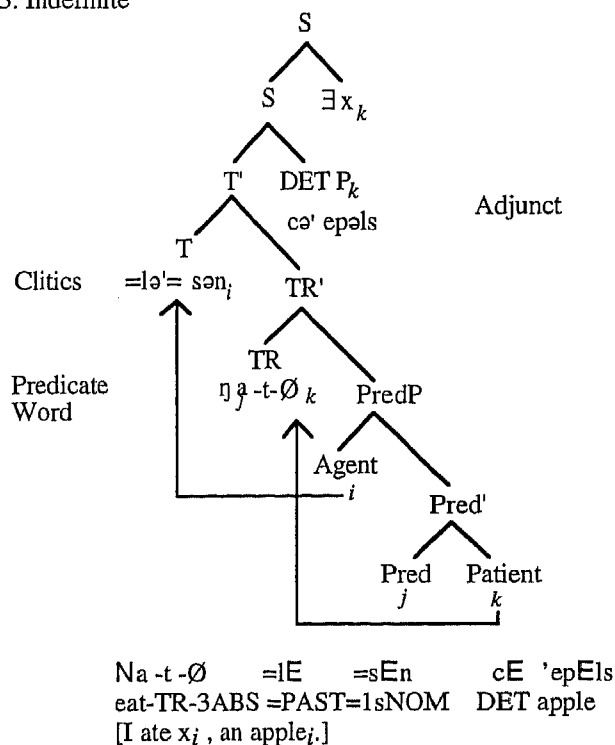
52. Definite



Na -t-Ø    =lE    =sEn    cE 'epEIs  
 eat-TR-3ABS =PAST=1sNOM DET apple  
 'I ate it<sub>i</sub>, the apple<sub>i</sub>.'

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### 53. Indefinite



In (52), the structure for the definite reading, the DET P binds the only Non-local argument in its scope. In (53), the structure corresponding to the indefinite reading, we see the scope of existential closure extending to the top of the tree; only in this position can it bind the variable introduced by the DET P as well as the variable internal argument of the Predicate. This structure appears to be in conflict with the Mapping Hypothesis, which defines the VP as the domain of default existential closure.

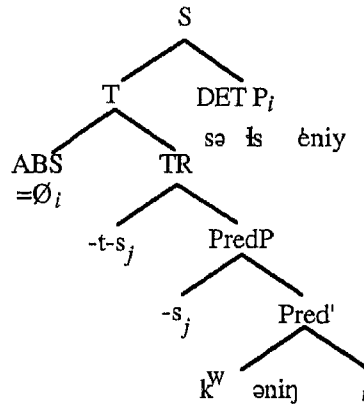
But notice that because of the person hierarchy and case split, only *Local* arguments appear as external arguments in accusative constructions. Therefore, the fact that existential closure must apply higher on the tree does no harm, since in any case, existential closure cannot apply to the presuppositional Local arguments. By excluding sentences of the type [*\*Non-local > Local*], we exclude possible sentences with a variable higher on the tree than a Local E-type pronoun. This means that these variables are in fact bound only in the predicate, in conformity with the Mapping Hypothesis.

Now let us consider the ergative construction, where all arguments are Non-local. On an indefinite reading, the DET P binds the highest Non-local argument on the tree, the Absolutive. Recall that Absolutes can be external arguments IFF there are no Local arguments within the clause. The ergative construction where the patient is the external argument is a kind of inverse of

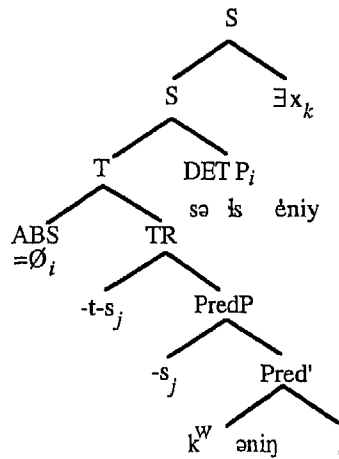
the accusative, and under the indefinite interpretation, there must be existential closure over this external argument. Consider the following ergative sentence, with the definite and indefinite readings of the Determiner Phrase.

54.  $k^w \text{EniN-t-s}=\emptyset$   $sE \text{ steni}'$   
 help-TR-3ERG=3ABS DET female  
 a. 'He helped her, the woman.'  
 b. 'He helped [x], a woman.'

54. a. Definite



54. b. Indefinite



Ergative sentences invert the canonical transitive structure, making the external Patient higher on the tree than the internal Agent; the Patient is thus available for binding by the Determiner Phrase on an indefinite reading. Whether Non-Local Patients are internal arguments in accusative constructions, or external



59.           oNE<sub>s-t-N=sx</sub><sup>w</sup>                   'E   cE si'em 'E   cE  
 sčeenEx<sup>w</sup>  
                   give-TR-PASS=2sNOM PREP DET chief PREP DET salmon  
                   'You were given a salmon by the chief.'

There is also a kind of Applicative (or "Indirective") where the Benefactee is the object (Montler 1986).

### 7. The incorporation of Pronominal Arguments

To review: There is a universal constraint on the distribution of arguments at LF, requiring definites to be "higher" in the tree than indefinites. This distribution of arguments is parameterized in the syntax. The requirement in some languages, including Salish, that (non-existential) Subjects be definite is a familiar example of its syntactic expression. Now I want to explore further the connection between the definiteness hierarchy and the feature [+Pronominal Arguments].

Baker (1991) accepts, with modifications, the idea that Mohawk is a pronominal argument language; he finds that a number of expected subject/object asymmetries are absent in the language, and takes this as evidence that nominals are not in argument positions. On Baker's view of Mohawk, the pronominal inflection licenses small *pros*. Since these *pros* occupy A-positions, NPs cannot do so, and must appear as adjuncts. This proposal does not directly bear on the problem I am concerned with here, which is the question of what motivates the presence of the pronominal inflection in the first place. The critical feature of this kind of syntax is the non-argumental status of nominals, whether the pronominal inflection is argumental in status or AGR that licenses *pros*.

Consider languages that have incorporated object pronouns, such as Egyptian Arabic (Jelinek 1983). There are no free-standing object pronouns in Egyptian Arabic; only verbal suffixes marking person, gender and number of the object. These suffixes are not object agreement, since they are in fact mutually exclusive with object NPs.

- |        |                             |                       |
|--------|-----------------------------|-----------------------|
| 60. a. | šuft walad.                 | 'I saw a boy.'        |
| b.     | šuft il-walad.              | 'I saw the boy.'      |
| c.     | šuft-u(h).                  | 'I saw him.'          |
| d.     | * šuft-u(h) walad/il-walad. | [I saw him a/the boy] |

Diesing and Jelinek (in press) argue that object pronouns in Egyptian Arabic attach to the verb and then raise with it out of the VP, in keeping with their definite status. Within IP, this predicate word, including the object pronoun, raises through various inflectional heads. Pronominal objects in Egyptian Arabic are exclusively definite; in contrast, some NPs are indefinite. Object NPs



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in Egyptian Arabic do not incorporate and raise out of the VP.<sup>9</sup> Diesing and Jelinek also provide evidence from Germanic on the raising of definite arguments, including the leftward "scrambling" of definite NPs, when verb-raising is present.

In Straits Salish, the predicate word corresponds roughly to VP, and the clitic string to IP. The internal pronominal arguments incorporate into the predicate word and raise with it to adjoin Inflectional material in the clitic string, which includes the external argument clitic. In the resulting "flat" surface structure, the definite pronominal arguments have moved out of their original "downstairs" position. The single exception to this is the serial predicate construction, where only the first predicate word can raise to adjoin the clitic string.

In a language with the feature [+PA], A-positions can be occupied only by some member of a pronominal paradigm. When a structural position is obligatory, and can only be satisfied by some member of a small closed set, this paradigm constitutes an inflectional category. Pronominal arguments attach to the element that governs them: objects to a verb, subjects to an INFL head. Attachment of itself of course does not guarantee an escape hatch from the VP; inflected prepositions or postpositions across languages remain within the VP. But in languages with pronominal arguments, where the definiteness hierarchy receives full expression in the syntax, verb or predicate raising produces the characteristic linear morphological structure, where all the pronominal arguments are within the predicate word and/or the clitic string, that we find in languages of this type.

While a language must have the feature [+PA] in order to lack noun/verb contrast, the reverse does not hold. In some languages of this kind, for example Navajo, we see sentences composed of a verb complex, to which NP adjuncts may be added (Willie 1991). In Warlpiri, all direct arguments are marked in the clitic string, which also contains Tense and Modality; the verb and NP adjuncts apparently "scramble" freely (Jelinek 1984). In Salish, we see a predicate word plus a second position clitic string.

Person and "animacy" hierarchies are found also in many other language families with case "splits". Dixon (1979) cites numerous examples. In Algonquian, "inverse" constructions appear where Lummi employs the Passive, to avoid violations of the hierarchy. Related phenomena have also been identified in Athabaskan, Nootka, and Tanoan (Jelinek 1990).

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<sup>9</sup> Incorporated nouns, in contrast to pronominal arguments, are indefinite and non-referential. Noun incorporation is never fully productive, as far as I know, and some varieties of noun incorporation constitute complex predicate formation, a process which may occur with pronominal argument incorporation (Jelinek 1989, erred in claiming that pronominal incorporation was mutually exclusive with all noun incorporation; see Baker 1992). See Mark Baker, "Lexical and Nonlexical Noun Incorporation", McGill University ms., for a discussion of noun incorporation types.

## 8. Concluding remarks

The problem addressed here has been: why do the distributions of certain case and voice systems conspire to place third person pronouns in internal argument positions in constructions where arguments differ in Locality value? The answer to this question was found in certain dependencies that lie at the interface between syntax and semantics.

1. First, there is a dependency between the semantic features of definiteness and locality. That is, pronouns are split with respect to definiteness at just the point where we see the person hierarchies break. Local pronouns are presuppositional, and cannot serve as variables to be bound by a Quantifier or Determiner Phrase, nor can they receive existential closure; only Non-local pronouns can serve as variables.

2. The second dependency is that between definiteness and the distribution of arguments in the syntactic tree. The Mapping Hypothesis (Diesing 1990, 1992) provides a unified account of the distribution of indefinite NPs with respect to the semantic and syntactic partitioning of the sentence into IP and VP: the VP is the domain of default existential closure. Presuppositional elements undergo quantifier raising, and there results a hierarchy of arguments with respect to definiteness/specificity:

61. By LF, definites are higher on the tree than indefinites.

This constraint receives parametric expression in the syntax.

In languages with Pronominal Arguments, pronouns that originate as internal arguments raise with the verb or predicate to adjoin inflectional heads higher in the tree.

3. A third dependency is between the feature [+ Pronominal Arguments] and the presence of person hierarchies. When DET P are adjuncts to the sentence, the scope of existential closure must include them. An ergative split and person hierarchy exclude variables from the subject position in transitive sentences, since subjects are required to be definite. Splits across person and hierarchies are syntactic options for languages where DET P and pronominal affixes have very different syntactic properties.

It appears that languages that confine nominals to A-bar positions also lack Determiner Quantification. D-quantification fixes the scope of some quantifier to a variable introduced by a predicate in a particular argument position, in IP or VP. If we are to determine whether argument type or quantifier type is primary, a question needing investigation at this point is whether there are languages without Determiner Quantification, where NPs are argumental.<sup>10</sup> Data on the possible interpretations of sentences as quantified contexts, and on constraints on the distribution of pronouns/variables in the syntax, lend support to the claim

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<sup>10</sup> See Vieira ms.

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that ergative splits across person and the person hierarchies they produce are an option available to languages where the syntax of pronouns and NPs is distinct in the syntax as well as at logical form.

### References

- Anderson, Stephen R. (1977) On Mechanisms by Which Languages Become Ergative. In Charles Li, ed., *Mechanisms of Syntactic Change*. University of Texas Press.
- Bach, Emmon, Eloise Jelinek, Angelika Kratzer, and Barbara Partee, eds. *Quantification in Natural Languages*. In press, Kluwer.
- Baker, Mark. (1988). *Incorporation: A Theory of Grammatical Function Changing*. University of Chicago Press.
- . (1991). On some Subject/Object non-asymmetries in Mohawk. *Natural Language and Linguistic Theory* 9:537-576.
- . Lexical and Nonlexical Noun Incorporation. Undated ms, McGill University.
- . On the absence of certain quantifiers in Mohawk. In Bach et al, eds., in press.
- and Ken Hale. (1990) Relativized Minimality and Pronoun Incorporation. *Linguistic Inquiry* 21:2 pp. 289-297.
- Bittner, Maria. *Ergativity, Binding and Scope*. In press.
- , and Ken Hale. Remarks on Definiteness in Warlpiri. In Bach, et al, eds., in press.
- Carlson, G. N. (1977). *Reference to Kinds in English*. PhD Dissertation, University of Massachusetts, Amherst.
- Charles, Al, Richard Demers and Elizabeth Bowman. (1978). *Introduction to the Lummi Language*. University of Arizona ms.
- DeLancey, Scott. (1981). An explanation of split ergativity and Related Patterns. *Language* 57.3:626-57.
- Diesing, Molly. (1990). *The Syntactic Roots of Semantic Partition*. PhD Dissertation, University of Massachusetts, Amherst.
- . (1992). *Indefinites*. Cambridge: MIT Press.
- and Eloise Jelinek. (1992). Distributing Arguments. Cornell University and University of Arizona, [to appear in *Working Papers in Scandinavian Syntax* ]
- Dixon., R. M. W. (1976). *The Dyirbal Language of North Queensland*. Cambridge University Press.
- . (1979). Ergativity. *Language* :55.59-138
- Hale, Ken. (1983). Warlpiri and the Grammar of Nonconfigurational Languages. *Natural Language and Linguistic Theory* 1.5-47.
- . (1990). Core Structures and Adjunction in Warlpiri Syntax. Paper presented at the Tilburg Scrambling Conference. To appear in Conference Proceedings.
- Heim, I. R. (1982). *The Semantics of Definite and Indefinite Noun Phrases*. PhD Dissertation, UMassachusetts, Amherst.
- Hockett, C. F. (1966). What Algonquian is really like. *International Journal of American Linguistics* 32.1: 59-73.
- Jelinek, Eloise. (1983). Person-Subject Marking in AUX in Egyptian Arabic. In Frank Heny and Barry Richards, eds., *Linguistic Categories: Auxiliaries and Related Puzzles*, pp. 21-46. Dordrecht, Kluwer.

- . (1984). Empty Categories, Case, and Configurationality. *Natural Language and Linguistic Theory* 2.39-76.
- . (1989). Argument Type in Athabaskan: Evidence from Noun Incorporation. Paper given at the AAA-CAIL, Washington, DC.
- . (1990). Grammatical Relations and Coindexing in Inverse Systems. In Katarzyna Dziwirek, Patrick Farrell, and Errapel Mejias-Bikandi, eds., *Grammatical Relations, a Cross-Theoretical Perspective*, CSLI Stanford.
- . (1993). Languages without Determiner Quantification. Paper presented at BLS; to appear in conference proceedings.
- . Quantification in Straits Salish. In Bach et al, eds., in press.
- Kamp, H. (1981). A Theory of Truth and Semantic Representation, reprinted in J. Groenendijk, T. M. V. Jansen, and M. Stokhof, eds. (1984), *Truth, Interpretation and Information*, GRASS 2, Foris, Dordrecht.
- Kinkade, M. Dale. (1983). Salish evidence against the Universality of "Noun" and "Verb". *Lingua* 60.25-40.
- Kratzer, Angelika. (1989). Stage-Level and Individual-Level Predicates. In *Papers on Quantification*, Department of Linguistics, University of Massachusetts. Emmon Bach, Angelika Kratzer and Barbara Partee, eds.
- . (1992). Towards a Theory of Voice. Ms., UMass, Amherst.
- Levin, Beth. (1983). On the Nature of Ergativity. PhD Dissertation, MIT [Distributed by MITWPL].
- Lewis, David. (1975). Adverbs of Quantification. In E. L. Keenan, ed., *Formal Semantics of Natural Language*, Cambridge University Press.
- Mallinson, G. and B. J. Blake. (1981). *Language Typology*. North Holland, Amsterdam.
- Marantz, A. P. (1981). *On the Nature of Grammatical Relations*. PhD Dissertation, MIT, Cambridge, MA.
- Montler, Tim. (1986). *An Outline of the Morphology and Phonology of Saanich, North Straits Salish*. Occasional Papers in Linguistics, University of Montana, Missoula.
- Murasugi, Kumiko G. (1992). *Crossing and Nested Paths: NP Movement in Accusative and Ergative Languages*. PhD Dissertation, MIT [Distributed by MITWPL].
- Pollock, Jean-Yves. (1989). Verb Movement, Universal Grammar, and the Structure of IP. *Linguistic Inquiry* 20.3:339-364.
- Rosen, Carol. (1990). Rethinking Southern Tiwa: The geometry of a triple-agreement language. *Language* 66:4 pp. 669-713.
- Silverstein, M. (1976). A hierarchy of features and ergativity. In R. Dixon, ed., *Grammatical Categories in Australian Languages*. Humanities Press, N.J.
- Travis, Lisa. (1984). *Parameters and Effects of Word Order Variation*. PhD Dissertation MIT [Distributed by MITWPL].
- Vieira, Marcia Damaso. Dissertation in preparation, State University of Campinas, Brazil.
- Wierzbicka, Anna. (1981). Case Marking and Human Nature. *Australian Journal of Linguistics* 1.43-80.
- Willie, Mary. (1991). *Pronouns and Obviation in Navajo*. University of Arizona Dissertation.

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II.3 Deising, Molly and **Eloise Jelinek** (1995) Distributing Arguments. *Natural Language Semantics* 3: 123-176.

This paper argues that object movement in several languages corresponds to semantic considerations of interpretation. In particular, objects move to establish relative scope and repair type mismatch. Specific objects shift out of VPs, in accordance with Deising's (1992) mapping hypothesis, while NPs inside the VP are closed under Existential closure at LF. Pronouns must shift because they are variables, which explains why they cliticize in Egyptian Arabic. A similar account is given of pronominal object shift in Scandinavian languages. The importance of this paper lies in the fact that it establishes the strict correspondence between argument type, syntactic position and (hierarchy driven) semantic interpretation.

## DISTRIBUTING ARGUMENTS\*

We examine several cases of object movement from various languages, and demonstrate that the syntactic behavior of objects can be derived from certain conditions on LF representations. Conditions on LF relevant to the distribution of arguments are identified as relative scope fixing and type mismatch repair. These two conditions interact with the multiple semantic types that may be assigned to NPs (cf. Partee 1987) to induce movement of certain objects out of the VP, universally by LF and parametrically in the overt syntax. Diesing's (1992b) Mapping Hypothesis combined with the multiple NP types predicts that quantificational NPs in object position will have to undergo movement by LF. This movement is forced by the principles of semantic composition as a mechanism of type mismatch resolution. The existential closure operation over VP is claimed to be genuinely unselective: any NP that introduces a free variable and does not receive an existential interpretation must move out of the scope of existential closure (and thus out of the VP) by LF. Pronouns are variables, limited in semantic type assignment, that by virtue of their definiteness cannot be bound by existential closure and must move out of its scope. In Egyptian Arabic, object pronouns escape from the VP via attachment to a verb that raises to adjoin to an Aspect inflectional head above the VP. The movement of object pronouns and definite/specific NPs in Scandinavian is also associated with verb movement.

## 1. INTRODUCTION

Within the Principles and Parameters framework (Chomsky 1981, 1991, 1992) the idea that specific principles and well-formedness conditions can force movement is pervasive. In this paper we focus on some conditions

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\* The Egyptian Arabic judgments presented here were given by Adel Gamal and Hassan Selim. Jóhannes Gísli Jónsson, Halldór Sigurðsson, and Höskuldur Þráinsson provided Icelandic judgments; and Anders Holmberg, Sten Vikner, and Christer Platzack assisted with the Mainland Scandinavian data. Financial support for the research reported here was provided in part by the Social and Behavioral Sciences Research Institute at the University of Arizona in the form of a Small Grant awarded jointly to both authors, and also by NSF Young Investigator Award DBS-9257144 awarded to Molly Diesing. Earlier versions of this paper were presented in colloquia at Cornell University, the University of Massachusetts at Amherst, MIT, and the University of California at Santa Cruz. We are grateful for the comments provided by the audiences on these occasions, as well as for the input given in the syntax and semantics seminar taught in the fall of 1992 at Cornell. Finally, we wish to acknowledge the comments, suggestions, and encouragement offered to us by Hagit Borer, John Bowers, Vicki Carstens, Gennaro Chierchia, Sandy Chung, Chris Collins, Viviane Déprez, Regina Hauptmann, Irene Heim, Anders Holmberg, Sabine Iatridou, Kyle Johnson, Angelika Kratzer, Bill Ladusaw, Jim McCloskey, Kumiko Murasugi, David Pesetsky, Christer Platzack, Ur Shlonsky, Magui Suárez, Peter Svenonius, and two anonymous *NALS* reviewers. We of course retain responsibility for any remaining errors.

on LF representations which act as a driving force for certain movement processes affecting direct objects in a number of different languages. Our claim is that these LF conditions conspire to redistribute NP arguments in a hierarchy according to their definiteness.

The overall outline of the paper is as follows. In the next section we give the necessary semantic background and illustrate the LF conditions we wish to motivate. Next we focus on pronominal objects in Egyptian Arabic, and show how their syntactic behavior can be accounted for in semantic terms. Then we discuss parallel phenomena concerning direct object NPs in Germanic and end with some generalizations and conclusions.

## 2. BACKGROUND: SEMANTICALLY DRIVEN MOVEMENT

Our proposal concerning semantic conditions which force movement consists of two main parts. First, we assume with Partee (1987) that noun phrases correspond to a family of semantic types, in the sense that multiple types can be assigned to particular noun phrases. Following Partee, we take the basic NP types to be  $e$  (“referential,” in Partee’s terms),  $\langle e, t \rangle$  (“predicational”), and  $\langle\langle e, t \rangle, t \rangle$  (“quantificational”). Second, we propose that the semantic type of an object NP will determine its behavior with respect to two conditions on LF – repairing “type mismatches” and scope fixing. While these two conditions are not generally separated in the literature on the syntax of LF (see May 1977, 1985, for example), we show below that data from German suggest that the two conditions can actually separately force movement at different stages in the derivation.

In addition to the work by Partee, evidence for multiple interpretations for indefinite NPs is given in Diesing (1992b). Indefinite NPs can have a predicational interpretation ( $\langle e, t \rangle$ ) or an essentially quantificational reading ( $\langle\langle e, t \rangle, t \rangle$ ). In Diesing’s approach these two interpretations interact with a process which splits the syntactic tree into two parts which map into the restrictive clause and nuclear scope of the semantic representation (in the sense of Heim 1982 and Kamp 1981), with the result that different interpretations are associated with distinct syntactic positions in the tree. Under this procedure, a “tripartite structure” consisting of an operator, a restriction, and a nuclear scope is derived in the following fashion:

- (1) *The Mapping Hypothesis*
  - i. VP maps into the nuclear scope (the domain of existential closure)
  - ii. IP maps into the restriction (of an operator)

Thus, the VP forms the domain for default existential closure, and the material above VP is associated with a quantifier. The two possible interpretations for indefinites can be represented either as variables which are bound by existential closure (predicational interpretation), or they can be introduced in the restrictive clause of some operator (quantificational interpretation). In other words, at the point of mapping into the semantic representation, existentially bound NPs of type  $\langle e, t \rangle$  will be within the VP, but NPs of type  $\langle \langle e, t \rangle, t \rangle$  will have moved out. There is a third possibility, in which the indefinite is not inherently quantified (that is, not of type  $\langle \langle e, t \rangle, t \rangle$ ), but is construed as the restriction on an operator such as an adverb of quantification or an abstract generic operator rather than being existentially bound. In the discussion below, we will be concerned mainly with the distinction between, on the one hand, indefinites bound by existential closure and, on the other hand, those which function as the restriction on an operator, either inherently (as in the case of the type  $\langle \langle e, t \rangle, t \rangle$  interpretation) or in association with an adverb, and are thereby bound by that operator.

In a broader context, given recent work on phrase structure in which the availability of a VP-internal subject position as well as the VP-external position is assumed (e.g., Kuroda 1988, Pollock 1989), there is the possibility that a sentence will simply map into a nuclear scope, giving rise to an existential interpretation (see Diesing 1992b for a more detailed discussion of this). It is also possible to have multiple operators and associated restrictors, but we will not consider such cases here.

The Mapping Hypothesis can be combined with the multiple NP types to yield a number of predictions. The first is a result of the system of multiple semantic types itself, and is that essentially quantificational NPs in object position will have to undergo movement by LF. This movement is forced by the principles of semantic composition, assuming a bottom-up algorithm for combining semantic types. This is because the NPs of type  $\langle \langle e, t \rangle, t \rangle$  cannot combine with the transitive verb type  $\langle e, \langle e, t \rangle \rangle$  and yield a well-formed derivation. To repair this type mismatch, the quantifier must be syntactically raised via Quantifier Raising (QR; May 1977, 1985) leaving behind a trace, to create a clausal predicate of type  $\langle e, t \rangle$ :

$$(2) \quad [_{IP_2} QP_i [_{IP_1} NP_{subj} [_{VP} V t_i]]]$$

In (2) the raising of the QP creates the predicate  $IP_1$  (the trace acts as a variable) which can combine with the quantificational NP. Given the VP-internal subject hypothesis mentioned above, adjoining to VP will also satisfy the compositional requirements, and in some cases may in fact be necessary (see May 1985 and also Diesing 1992b for discussion of some



of the relevant examples). It is important to note that regardless of the adjunction site – IP or VP – the raised NP is no longer contained within VP (following the assumptions concerning the relations of dominance and containment in adjunction structures proposed in May 1985 and Chomsky 1986). Thus, the principles of compositionality motivate the syntactic movement process of QR (see Heim and Kratzer 1990 for more detailed discussion), which results in inherently quantified NPs being raised out of the VP.<sup>1</sup> This process of type mismatch repair is the first of the semantic conditions which we claim force movement.

In Diesing (1992b) it is claimed that one of the features that distinguishes indefinites with an  $\langle\langle e, t \rangle, t\rangle$  interpretation from those with an  $\langle e, t \rangle$  interpretation is that the former undergo QR while the latter do not appear to undergo the same LF movement process. If QR is essentially a process of type mismatch resolution, it is natural to expect that some such resolution process would be necessary for the interpretation of  $\langle e, t \rangle$  indefinites as well, since the  $\langle e, t \rangle$  type also cannot combine with the  $\langle e, \langle e, t \rangle \rangle$  type of the transitive verb. We take here an alternative approach, extending proposals made by Partee (1987) and Zimmerman (1992) in which certain verbs take  $\langle e, t \rangle$  complements (that is, they denote  $\langle\langle e, t \rangle, \langle e, t \rangle\rangle$  relations). Our claim is that when the existential interpretation arises with an indefinite object, the transitive verb is simply selecting for the  $\langle e, t \rangle$  interpretation. Thus, no type mismatch occurs. This possibility is lexically restricted; with many verbs the  $\langle e, t \rangle$  interpretation of an indefinite object is not possible (see Diesing 1992b for discussion of such lexical variation). We will not address these issues in detail here, but will simply assume that ample evidence for this approach to  $\langle e, t \rangle$  indefinites in object position exists.

A second semantic condition we propose concerns the nature of the existential closure operation. We claim that it is genuinely unselective, in the sense that any free variable within the scope of existential closure (that is, within the VP domain) is existentially quantified. By “free” we mean, roughly, free in the LF of the sentence. Thus, traces left by movement (such as *wh*-traces and NP-traces) will not be free.<sup>2</sup> This means that any

<sup>1</sup> This process of resolving type mismatches roughly corresponds to the notion that quantifiers must (syntactically) bind variables, as expressed in the Government-Binding literature cited above.

<sup>2</sup> As pointed out to us by Irene Heim and Angelika Kratzer, the behavior of various A-bound elements in object position (such as bound variable pronouns and reflexives) is problematic given this notion of “free variable.” In particular, it is predicted that the behavior of bound variable pronouns would differ from that of referential pronouns. While there are differences observable in many languages in the syntactic behavior of referential and bound variable pronouns (see, for example, Montalbetti 1984 and Larson and Lujan 1990), they do not

NP that introduces a free variable and does not receive an existential interpretation must move out of the VP by LF (see also Kratzer 1989 for an early discussion of this idea). In other words, non-existential variables cannot be within the scope of existential closure. With respect to existential closure, this condition will therefore affect only NPs which introduce free variables – those of type  $\langle e, t \rangle$  and type  $e$ . The quantificational NPs ( $\langle \langle e, t \rangle, t \rangle$ ) do not introduce a free variable, and so they are not necessarily affected. We will see below that this condition is a subcase of a more general condition requiring that the relative scope of operators be syntactically fixed.

As mentioned above, these two conditions are commonly collapsed into one under the heading of the rule QR. When considering languages like English, in which both scope and type requirements are apparently not resolved until the abstract level of LF, it is not clear that anything forces us to separate these two conditions. German, however, does allow the two conditions to be distinguished, in that the scope condition must be satisfied at S-structure (via application of scrambling) while the resolution of type mismatches can be “delayed” until LF (and repaired at LF by the abstract syntactic rule of QR). In order to show this we must examine the behavior of both definite and indefinite NPs of the various semantic types.

To demonstrate that the resolution of type mismatches can be delayed until LF in German, we need to consider the case of quantificational NPs (henceforth QPs) in object position. As the examples given below show, object QPs can, but need not, scramble at S-structure. (We give the examples as embedded clauses in order to abstract away from the effects of verb-second.)

- (3) a. . . . weil ich selten **jedes Cello** spiele.  
           since I   seldom every cello play  
           ‘since I seldom play every cello.’
- b. . . . weil ich **jedes Cello** selten spiele.  
           since I   every cello seldom play  
           ‘since I play every cello (only) seldom.’

The scrambled and unscrambled orders are indicated by the position of the object NP relative to the sentential adverb *selten* (‘seldom’). The base

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obviously follow from the analysis outlined here. Also perhaps of relevance are the contrasts between “simplex expression” anaphors and “SELF” anaphors noted by Reinhart and Reuland (1993). We leave the resolution of these matters for future research.

position is to the right of the adverb, as shown in (3a); when the NP appears to the left of the adverb, as in (3b), it has been scrambled. Both orders are grammatical, though there is a difference in the relative scope of the QP and the adverb. Since the QP *jedes Cello* 'every cello' is of type  $\langle\langle e, t \rangle, t\rangle$ , the fact that it can appear in its base position indicates that the type mismatch need not be resolved until LF.<sup>3</sup> The scope of the QP relative to the adverb is fixed at S-structure, however, as indicated by the English translations. In (3a) the QP *jedes Cello* 'every cello' falls within the scope of the adverb *selten* 'seldom', and when the QP is scrambled to the left of *selten* as in (3b) it takes wide scope with respect to the adverb.

Similar facts hold with respect to the interaction of QP objects with sentential negation:

- (4) a. . . . weil ich nicht **eine einzige Katze** gestreichelt habe.  
           since I   not   a single cat           petted       have  
           'since I have not petted a single cat.' (no cats petted)
- b. . . . weil ich **eine einzige Katze** nicht gestreichelt habe.  
           since I   a single cat           not   petted       have  
           'since there is a single cat that I have not petted.'

Here again the QP can remain *in situ* at S-structure, and in this case it will be interpreted as falling within the scope of negation. If it is scrambled, the QP takes scope outside of negation. Thus these examples provide initial evidence that scope fixing and the type mismatch repair operations should be regarded as separate processes. In German, scrambling fixes relative scope relations at S-structure, while QR repairs type mismatches at the later level of LF.

To demonstrate that the scoping operation also affects the existential closure process, we turn now to the instances of NPs which do introduce free variables – those of type  $\langle e, t \rangle$  and type  $e$ . An example of the former is that of a nonquantificational indefinite. The conditions we propose predict that there should be no force which causes obligatory movement of these NPs out of the VP. However, the interpretation of the NPs varies with their syntactic position. If they remain within the VP, they will be bound by existential closure and receive an existential interpretation. This is shown below for a bare plural object NP.

<sup>3</sup> Evidence that the QP does in fact move at LF can be found in antecedent-contained deletion constructions. See May (1985) and Diesing (1992b) for discussion.

- (5) a. . . . weil Elly immer **Lieder** singt.  
           since Elly always songs sings

‘since Elly is always singing songs.’

- b. ALWAYS<sub>t</sub> [time(t)]  $\exists_x$  song(x)  $\wedge$  sings(Elly, x, t)

Notice that not only does the bare plural NP *Lieder* ‘songs’ receive an existential interpretation, it also takes narrow scope with respect to the quantificational adverb *immer* ‘always’. This is expected, given our claim that relative scope is fixed at S-structure in German.

It is also expected that if the indefinite object is scrambled, it will no longer be able to be bound by the existential closure operation, since it will have moved out of its scope. This prediction is in fact borne out. In the scrambled order, the indefinite object NP is bound by the quantificational adverb:

- (6) a. . . . weil Elly **Lieder** immer singt.  
           since Elly songs always sings

‘since, if it’s a song, Elly will sing it.’

- b. ALWAYS<sub>x</sub> [song(x)] sings(Elly, x)

Thus, the surface position of an  $\langle e, t \rangle$  indefinite object is determined only by its scope relative to the existential closure operator. When the object falls under the scope of existential closure it remains in the VP, and when the object takes scope over the existential closure operator it scrambles out of VP. Either way, a well-formed interpretation results.

So far we have seen that S-structure scrambling can fix relative scope relations with respect to overt operators like quantificational noun phrases and adverbs, as well as the abstract operation of existential closure. The next question is whether this scoping *must* take place by S-structure. Here we must look more closely at existential closure to see what happens to variables that cannot felicitously be existentially bound – those introduced by definite noun phrases. We will consider two cases of definite NPs. The first is that of definite descriptions, such as *the Rosamunde Quartet* or *the cat*. Here we follow Heim (1982) in assuming that definite NPs introduce a free variable. If we look at the German data, we see that definite descriptions are quite awkward in VP-internal positions. We use the grammaticality indication ‘\*?’ to indicate markedness in the sense that some contrastive context is required for felicity (see Büring 1993 for a similar claim about the status of these examples). In other words, there is a strong pressure for definite NP objects to scramble in neutral contexts.

- (7) a. \*?. . . weil ich selten **die Katze** streichle.  
           since I   seldom the cat    pet
- b. . . . weil ich **die Katze** selten streichle.  
           since I   the cat    seldom pet  
           ‘since I seldom pet the cat.’
- (8) a. \*?. . . weil ich nicht **das Rosamunde-Quartett** gespielt habe.  
           since I   not   the Rosamunde Quartet   played have
- b. . . . weil ich **das Rosamunde-Quartett** nicht gespielt habe.  
           since I   the Rosamunde Quartet   not played have  
           ‘since I haven’t played the Rosamunde Quartet.’

Our claim is that these definite NPs receive a referential interpretation which is incompatible with an existential interpretation. The reason for this is that binding by existential closure is subject to a *Novelty Condition* (Heim 1982). The effect of this condition is that variables bound by existential closure must be new to the discourse. In order to comply with this condition, the variables introduced by definites (which are “old” information) must move out of the scope of the existential closure operator at S-structure.

The sentences in (7a) and (8a) are not absolutely ill-formed; certain conditions can conspire to make the unscrambled order more acceptable. To see how this works we need to consider the question of whether definite descriptions, like indefinite NPs, allow other interpretations in addition to the referential reading.

Using the absence of obligatory scrambling again as a diagnostic, it appears that definite descriptions allow a quantificational ( $\langle\langle e, t \rangle, t \rangle$ ) interpretation in certain contexts. Consider the examples below:

- (9) a. . . . weil ich selten **die kleinste Katze** streichle.  
           since I   seldom the smallest cat    pet  
           ‘since I seldom pet the smallest cat.’
- b. . . . weil ich nicht **die kleinste Katze** streichle.  
           since I   not   the smallest cat    pet  
           ‘since I have not petted the smallest cat.’

Sentences with unscrambled definite object NPs of the sort given in (9) are in fact grammatical in neutral contexts on a particular interpretation of the definite object in question. In the case of (9) the NP *die kleinste Katze*

'the smallest cat' means roughly "whichever cat is the smallest." (The reading is most clearly brought out by emphasis on the adjective *kleinste* 'smallest'.) In other words, the speaker may not know which cat is the smallest, but simply avoids petting the smallest cat (because it may be delicate, or bite more readily, or whatever). NPs of this sort are examples of what Klein (1980) argues to be typical attributive (rather than referential) definite NPs. *The smallest cat* is a superlative; therefore one can assume such a smallest cat exists without knowing which cat it is. We propose that these attributive definite NPs are actually quantificational (of type  $\langle\langle e, t \rangle, t \rangle$ ), and this enables them to remain in their base (unscrambled) position within the VP. Since they actually do not introduce a bindable variable (unlike the referential definites), there is no problem with them remaining within the scope of existential closure at S-structure.

Finally, we turn to the remaining instance of definite NP, which is of type *e*. This is the pronoun. Since pronouns are definite, it is expected that pronouns in German are unable to remain within VP, as this would violate the Novelty Condition. This is in fact the case.

(10) a. \* . . . weil ich selten **sie** streichle.  
           since I   seldom her pet

b. . . . weil ich **sie**       selten       streichle.  
           since I   her       seldom       pet  
           'since I seldom pet her.'

(11) a. \* . . . weil ich nicht **sie** gestreichelt habe.  
           since I   not       her petted       have

b. . . . weil ich **sie**       nicht gestreichelt habe.  
           since I   her       not       petted       have  
           'since I have not petted her.'

Examples (10–11) show that although pronouns are simply variables (type *e*), by virtue of their definiteness they cannot be bound by existential closure; they must move out of its scope at S-structure. In contrast to the definite descriptions, the quantificational interpretation (which would not require movement at S-structure) is not available for (unstressed) pronouns.<sup>4</sup>

To summarize, we claim that there are two conditions on LF relevant to the distribution of arguments: Relative Scope Fixing and Type Mismatch

<sup>4</sup> We deal with the issue of stressed pronouns in section 6.1.

Repair. These two conditions interact with the multiple types available for NPs to induce movement both at S-structure and at LF in German.<sup>5</sup> In the sections that follow, we will examine several cases of object movement from various languages and demonstrate that the syntactic behavior of objects can be derived from these conditions on LF representations.

### 3. EGYPTIAN ARABIC OBJECT PRONOUNS

In Egyptian Arabic (EA) there is an interesting subject-object asymmetry with respect to pronouns. While free-standing subject pronouns do occur, there are no free-standing object pronouns:

- (12) a. **huwwa** šaaf ig-gamal.  
           he       saw the-camel  
           ‘He saw the camel.’
- b. ig-gamal šaaf-**u(h)**.  
           the-camel saw-him  
           ‘The camel saw him.’

There is no way of expressing the object pronominal in (12b) with a free-standing pronoun. We propose to explain this asymmetry in terms of the syntax-semantics interaction demonstrated above for German. Essentially, in EA the object pronouns must appear attached to the verb because they must raise out of the VP to get out of the scope of existential closure. As we demonstrate below, the verbal paradigms of EA are such that pronoun attachment to the verb gives the pronouns a means for “riding” out of the VP via head movement.

This proposal carries with it the implication that the relative scope fixing condition must be satisfied at S-structure in EA. A brief look at subjects in EA suggests that this may in fact be the case. EA excludes existential indefinites from [Spec, IP] (Wise 1975).

- (13) a. **ik-kalb** figgineena.  
           the-dog in-the-garden  
           ‘The dog (is) in the garden.’

<sup>5</sup> The idea that semantic constraints can yield syntactic effects is not new. See for example Milsark’s (1974) use of a ban on vacuou quantification to derive the syntactic “definiteness effect” in existential sentences, as well as work by May (1985) concerning syntactic effects associated with quantificational structures.

- (13) b. \***kalb** figgineena.  
 (a) dog in-the-garden  
 ‘A dog is in the garden.’
- c. **fiih kalb** figgineena.  
 EXIST a dog in-the-garden  
 ‘There (is) a dog in the garden.’

Although a preverbal definite subject is possible, as shown in (13a), the example (13b) with an indefinite subject is simply not possible as a sentence and must be interpreted as an NP. The indefinite subject can only be introduced in an existential sentence, as in (13c).<sup>6</sup> In Egyptian Arabic, indefinite subjects are only permitted in [Spec, IP] when a specific interpretation is available. The example in (13b) does not felicitously permit a specific interpretation of the indefinite subject. In other contexts, such an interpretation is possible:

- (14) **walad** kal bamyā.  
 (a) boy 3ms-ate (Perf.) okra  
 ‘A (particular) boy ate okra.’

However, the sentence in (14) is only grammatical in a context where the indefinite subject **walad** ‘a boy’ refers to a member of some previously mentioned group.

These facts can be explained by the Mapping Hypothesis in conjunction with the scoping requirement on existential closure. When a subject NP is in the [Spec, IP] position, it is out of the scope of existential closure, and therefore no existential interpretation is possible. If the context permits, the subject receives a specific (quantificational) interpretation; otherwise the sentence is ungrammatical. The existential construction in (13c) places the subject in a lower subject position, presumably within the VP, and

<sup>6</sup> The prepositional phrase *fiih* ‘in-it’ is used as an existential predicate in Egyptian Arabic. This existential predicate shows the behavior of other sentential predicates, marking tense on the copula KWN and interacting with the discontinuous negation morpheme *ma . . . š* described in section 3.2.

- (i) a. ma-fiih-š kalb (fi-g-gineena)  
 NEG-in-3ms-NEG dog (in-the-garden)  
 ‘There is not a dog (in the garden).’
- b. ma-kan-š fiih kalb (fi-g-gineena)  
 NEG-be-NEG (Past) in-3ms dog (in-the-garden)  
 ‘There was not a dog (in the garden).’



the existential interpretation results. It is in fact the only interpretation possible in this context (see Diesing 1992b for discussion of similar facts in Dutch).

Thus we see that the scoping of subject NPs with respect to existential closure must take place at S-structure in EA. What about object NPs? Is EA like German in that non-existential indefinites scramble out of the VP at S-structure? The answer here is No – EA does not allow S-structure scrambling of full NP objects. At first blush, this appears to contradict the conclusions drawn about EA subject NPs. This inconsistency holds only in part, however. As we will show below, EA does in fact require scoping at S-structure, to the extent that it is made possible by the available S-structure movement options. Thus, subjects obey the scoping requirements because there are two subject positions available – a VP-external and a VP-internal one. In the sections that follow we will demonstrate that object NPs that can take advantage of *head* movement (rather than XP scrambling) also obey the scoping condition at S-structure.

### 3.1. *EA Pronouns Are Outside VP: Inflectional Syntax*

In this section, we will provide evidence showing that the object pronouns in Egyptian Arabic attach to the verb and raise with it out of the VP via head movement. In order to do so, we need to survey briefly certain relevant features of the inflectional syntax of Egyptian Arabic. Unlike some other dialects of Arabic, the basic word order of EA is SVO.<sup>7</sup> The abstract lexical root from which the Arabic verb is derived consists of a set of consonants (typically three). This consonantal root is inflected for tense and aspect via certain vocalic melodies (McCarthy 1979). We follow Pollock's (1989) verb raising analysis of inflection and assume that the verbal root raises from the VP to attach to the tense and aspect markings.

While there may not be any evidence from the linear ordering of inflectional affixes for a head movement analysis of verbal morphology in EA (that is, Baker's (1985, 1988) Mirror Principle clearly does not apply, since EA morphology is nonconcatenative), there is evidence of a different sort supporting a head movement approach. The distribution of subject agreement for person supports the initial claim that verbs raise to a higher domain to receive inflection. Specifically, subject agreement for

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<sup>7</sup> The literature on Egyptian Arabic is rather scarce, and it is primarily descriptive in nature. Some examples are Wise (1975), Gamal-Eldin (1967), and Gary and Gamal-Eldin (1981). Some recent treatments of a more theoretical nature are Jelinek (1981, 1983) and Wahba (1984).

person appears only on verbal elements marked for either tense or aspect. The distribution of tense and aspect markings on verbal heads in turn supports a particular hierarchical arrangement of T and Asp heads. Where both tense and aspect are marked, they are marked on distinct verbal elements, with the tensed element c-commanding the head marked for aspect.

Considering first the distribution of agreement, we note that EA has a rich system of verbal agreement for person, number, and gender of the subject, and permits *pro*-drop of subjects.<sup>8</sup>

- (15) a. ʕali kaan biyibiiʕ burtu'aan.  
 Ali was (3ms-Past) selling (3ms-Imperf.) oranges  
 'Ali was selling oranges.'
- b. kaan biyibiiʕ burtu'aan.  
 was (3ms-Past) selling (3ms-Imperf.) oranges  
 '(He) was selling oranges.'

In contrast, there is no object agreement or clitic-doubling of objects in EA.<sup>9</sup> Objects may be free-standing full NPs, as seen above in (15), or attached pronouns, as shown in (16).

- (16) a. ʕali kaan biyibiiʕ-**hum**.  
 'Ali was selling-them.'
- b. \*ʕali kaan biyibiiʕ-**hum** hurtu'aan.  
 'Ali was selling-them oranges.'
- c. ʕali kaan biyibiiʕ-**hum**, . . . il-burtu'aan.  
 'Ali was selling-them, . . . the oranges.'

<sup>8</sup> We use the following abbreviations for inflectional markings:

|                                         |                              |
|-----------------------------------------|------------------------------|
| Pres = present tense                    | Past = past tense            |
| Subj = subjunctive                      |                              |
| Perf = perfective aspect                | Imperf = imperfective aspect |
| m = masculine                           | f = feminine                 |
| s = singular                            | pl = plural                  |
| 1,2,3 = first, second, and third person |                              |

<sup>9</sup> There are dialects of Arabic, such as Levantine, which do permit clitic-doubling structures similar to those seen in Romance languages. While clitic-doubling structures are certainly relevant to the issues we discuss here, we will postpone further consideration of them to future work. For discussion of clitic-doubling in Semitic see Aoun (1982) and Borer (1984). Clitic-doubling in Romance and other languages is discussed in Strozer (1976), Rivas (1977), Jaeggli (1982), Steriade (1980), Dobrovie-Sorin (1990), and Suñer (1988), among others.

It is, however, possible for a *definite* NP to be adjoined to the sentence in a kind of “afterthought” construction with a clear intonational break and pause before the adjoined NP, as indicated in (16c).

What is important to note is that subject agreement marking is associated only with elements marked with tense or aspect. Furthermore, tense and aspect are marked on distinct verbal heads. Tense is marked on the copular/auxiliary verb KWN, while aspect is marked on main (lexical) verbs. Subject agreement is marked on both KWN and the main verb (Jelinek 1983).<sup>10</sup>

- (17)      Auxiliary      Main Verb  
             AGR + Tense    AGR + Aspect

This distribution of tense and aspect markings is confirmed by the occurrence of sentences that show tense without aspect, and nonfinite clauses that show aspect without tense.

An example of the former type involves predicate adjectives. In sentences of this sort there is of course no main verb. The example given in (18a) shows that tense marking can occur on the copula, but there is no aspect marking in the clause.

- (18) a. *il-burtu'aan kaanu kuwayyisa.* (predicate adjective)  
           the oranges were (3pl-Past) good  
           ‘The oranges were good.’
- b. \**il-burtu'aan biykuunu kuwayyisa.*  
           the oranges be (3pl-Imperf.) good  
           ‘the oranges being good’

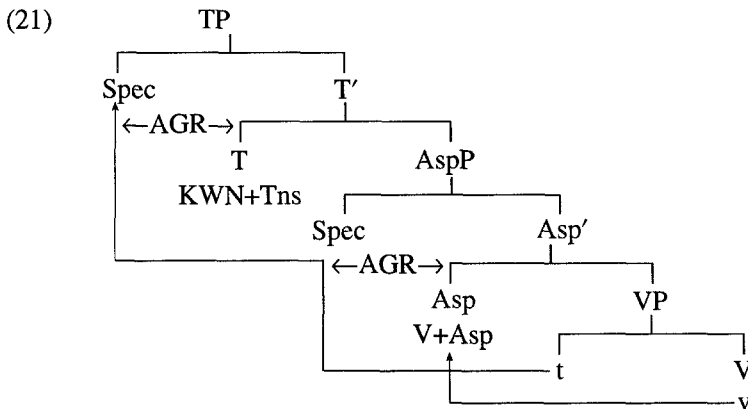
Aspect cannot be marked on the copula, and therefore aspectual distinctions cannot be marked in a sentence without a main verb. In the ungrammatical construction shown in (18b), the root KWN is inflected for imperfective aspect; this can happen only when KWN is functioning as a main (locative) verb, as in (19). The distinction between the copular and lexical functions of KWN is seen clearly in past tense sentences of this sort (as in (19b)). Here both the main and copular forms of KWN appear, with tense marked on the copular form and aspect marked on the main locative verb.

<sup>10</sup> This sort of “spreading” of subject agreement is also seen in other dialects of Arabic. A number of recent analyses adopt the tense/aspect distinction proposed here (see, for example, Bahloul and Harbert 1992 for Modern Standard Arabic). Demirdache (1989) analyzes the tense and aspect markings in Standard Arabic both as tense markers. Thus, her clause structures consist of stacked TPs.



for the association of tense and aspect marking with distinct lexical heads by assuming that tense and aspect are separate inflectional heads. The relative ordering of the tense and aspect markings leads to the conclusion that the Tns head is structurally above the Asp head. The auxiliary copular verb KWN shows tense contrasts (presumably inserted in a manner similar to *do*-support in English), while main verbs raise from the VP to attach to aspect.

The fact that subject agreement marking requires tense or aspect marking further supports the hypothesis that there is a domain of inflectional syntax above the VP. In order to account for the “spreading” of subject agreement across both the copula and the main verb, we propose that subject agreement results from a feature-sharing relation between a verbal head in Tns or Asp and the subject in the specifier of the head. Thus we do not follow Chomsky (1991, 1992), Kayne (1987), and Demirdache (1989) in positing a separate head for agreement, but take instead the Spec-Head approach to agreement argued for in Iatridou (1990) and Carstens and Kinyalolo (to appear) and also adopted by Murasugi (1992).<sup>11</sup> The basic derivation is schematized below:



The generalization in (17) and the analysis in (21) hold for most tenses in EA, but present tense clauses present some special problems which require additional discussion. In EA, as in other Semitic languages, there

<sup>11</sup> Carstens (1993) develops yet another approach to agreement, in which Agr heads are projected as a result of a Spec-Head relation which in turn results in shared  $\phi$ -features which must be “spelled-out” and “checked”. Thus Agr heads play a role in a form of checking theory (see Chomsky 1992), but their distribution is not determined by selection.

is no overt copula in present tense sentences. Compare the following examples displaying present and past tense clauses:

- (22) a. (Fariid) Ø            biyigmaŋ-**hum**.  
           BE (Pres.) gathering-them (3ms-Imperf.)  
           ‘Farid is gathering them.’
- b. (Fariid) kaan        biyigmaŋ-**hum**  
           BE (Past) gathering-them (3ms-Imperf.)  
           ‘Farid was gathering them.’

Example (22a) shows a present tense sentence with the main verb marked with aspect and subject agreement, but there is no element in the sentence marking tense, although it is a finite clause, unlike a perception verb complement. For purposes of clarity, we indicate here the null present tense with a null symbol (Ø). In later sections we will omit the Ø. The example in (22a) contrasts with the past tense sentence in (22b) in which the copula marking tense does appear.

This contrast can also be seen in the examples below, which show predicate nouns and adjectives. An additional fact about these nonverbal predicates is that they do not show person agreement, and do not permit *pro*-drop in present tense sentences. Where there is an overt form of KWN (as in a past tense clause), *pro*-drop is permitted, however.

- (23) a. ʕali Ø    šaaTir.  
           Ali BE clever  
           ‘Ali is clever.’
- b. (ʕali) kaan            šaaTir.  
           (Ali) be (3ms-Past) clever  
           ‘Ali/he was clever.’
- (24) a. ʕali Ø    ’ustaaz.  
           Ali BE professor  
           ‘Ali is a professor.’
- b. (ʕali) kaan            ’ustaaz.  
           (Ali) BE (3ms-Past) professor  
           ‘Ali/he was a professor.’
- (25) a. \*šaaTir  
           ‘He/she/it is clever.’

(25) b. \*'ustaaz

'He/she/it is a professor.'

Following on our discussion of agreement earlier in the paper, we take the absence of subject agreement in (23a) and (24a) and the concomitant absence of *pro*-drop to signify that these nominal and adjectival predicates do not raise out of the VP to trigger a Spec-Head relation with the subject in conjunction with an inflectional head. Note that predicate adjectives and nouns also do not show object attachment. That is, both subject agreement and object attachment appear only with items that have moved out of the VP up to an inflectional head.<sup>12</sup>

<sup>12</sup> Aspect in Egyptian Arabic is a complex inflectional system, and we do not include a full descriptive treatment here (see Jelinek 1981; Abdel-Massih 1975). The major aspectual paradigms are the perfect and *bi*-imperfect inflections. There is also a "future" form, the *Ha*-imperfect. There is a class of stative verbs in EA (including verbs of motion) where the *bi*-imperfective forms do not mark simple imperfective aspect; instead they receive a habitual interpretation. Compare the *bi*-imperfect of the ordinary active verb in (i) with the verb of motion in (ii):

- (i)       biyiktib  
          3ms-write (Imperf.)  
          'He is writing.' (active V, *bi*-Imperf.; imperfective aspect)
- (ii)       biyiruuH  
          3ms-go (Imperf.)  
          'He usually goes.' (motion V, *bi*-Imperf.; habitual)

In order to provide a simple imperfective reading with this class of state/motion verbs, a verb form traditionally called a "participle" is used. Participles may be transitive and take an object pronoun:

- (iii)       'intā fakir-ni  
          you ms-remember-1s (Part. imperf.)  
          'You remember/are remembering me.'

Participles occur with the copula KWN marking tense:

- (iv)       'intā kunt fakir-ni  
          you 2ms-BE (Past) ms-remember-1s  
          'You were remembering me.'

Participles do not show person agreement; they mark number and gender, like predicate nouns, and cannot raise to be bracketed by NEG when tense is null.

- (v)       \*'intā ma-fakir-ni-š  
          You NEG-ms-remember-1s-NEG

Discussing similar phenomena in present tense clauses in Modern Hebrew, Rapoport (1987) has proposed that sentences without an overt copula are simply tenseless, and that this explains the absence of the copula.<sup>13</sup> Adopting this proposal would in fact require making a three-way distinction in sentence types, since there are tenseless clauses in the language that do in fact require a nonfinite form of the copula. This nonfinite form may be either subjunctive or (less commonly) imperative.

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Sentential negation with the participle is the same as with predicative nouns.

- (vi) 'inta miš fakir-ni  
 you NEG ms-remember-1s  
 'You are not remembering me.'

Since participles do not agree in person with the subject, they do not permit *pro*-drop. These facts suggest the possibility that participles may correspond to nominalizations that include contrasts in aspect and may include object pronoun attachment. We reserve these problems for future work.

<sup>13</sup> Much of Rapoport's argumentation concerns the behavior of the pronominals which can optionally occur in the place of the copula in present tense nominal sentences in both Hebrew and Arabic:

- (i) a. ʕali (huwwa) šaaTir  
 Ali (he) clever  
 'Ali is clever.' (Egyptian Arabic)
- b. moše (hu) xaxam  
 Moshe (he) clever  
 'Moshe is clever.' (Hebrew)

The pronominal is obligatory in equative (as opposed to predicative) nominal sentences:

- (ii) a. ʕali huwwa il-mudaaris (\* without *huwwa*)  
 Ali he the teacher  
 'Ali is the teacher.' (Egyptian Arabic)
- b. moše hu ha-more (\* without *hu*)  
 Moshe he the-teacher  
 'Moshe is the teacher.' (Hebrew)

The first thing to note regarding these pronominals is that their syntactic behavior in EA is quite different from that in Hebrew (most notably with respect to negation), and thus many of Rapoport's arguments simply do not carry over to EA. Secondly, although the behavior of both predicative and equative nominal sentences in EA is very interesting, it does not necessarily bear on the claims made in this paper. Therefore, we leave this matter for future research.



- (26) a. 'ana řayza-k tikuun mu'addab.  
 I wanting (3fs-3ms-Active Part.) BE (3ms-Subj) polite  
 'I want you to be polite.'
- b. kuun mu'addab!  
 BE (3ms-Imp) polite  
 'Be polite!'

These examples show a verbal adjective and a nonfinite form of the copular verb. The sentences arguably lack tense marking, yet they display an overt form of the copula. Thus, the absence of tense in and of itself is not reliably associated with the absence of the copula. In order to account for the full range of facts, we assume that all finite sentences in EA are in fact copular, and that in the present tense the copula is simply null (following again Jelinek 1983).

In summary, the distribution of inflectional markings found in Egyptian Arabic provides preliminary support for the claim that the verb raises out of VP to attach to inflectional heads and is marked for subject agreement in the process. The fact that object pronouns appear attached to a verbal element which is marked for subject agreement provides initial support for our claim that pronominal objects raise out of VP in EA. In the next section we examine some evidence concerning sentential negation which further supports the claim that verbal object pronouns in EA must move out of VP.<sup>14</sup>

<sup>14</sup> This discussion raises the question of the status of the independent subject in EA, and whether both subject and object are in fact null elements licensed by agreement (the agreement morpheme in the case of objects being the *-hu* suffix we have referred to as a pronoun). We have claimed that EA is an SVO language (following Wahba 1984, among others), unlike Standard Arabic, which is commonly assumed to be VSO. It might be argued that the initial position subject in EA is actually a topic (as Demirdache (1989) claims for Standard Arabic), and that there is a null element licensed by the "rich" agreement; and that furthermore, the object suffixes also license null elements in the same way. While an analysis of this kind may be appropriate for Modern Standard Arabic (MSA), there are several reasons to reject it in the case of Egyptian Arabic. First, a topic may appear alongside a free emphatic pronoun and subject agreement on the verb:

- (i) řali huwwa kal il-burtu'aan. (Egyptian)  
 Ali, HE ate the orange.  
 'Ali, HE ate the orange.'

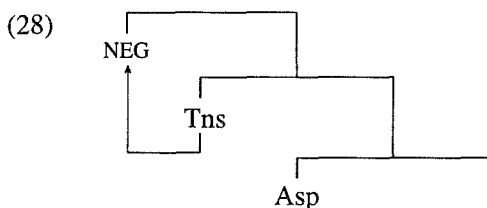
Second, as we saw above in (26), there are sentence types where subject *pro*-drop is not permitted. These are present tense sentences with predicate nouns and adjectives. Since the copula is null, there is no subject AGR in these sentences, and *pro*-drop is excluded. In this respect, Arabic differs clearly from Romance, where there are no finite sentences without subject agreement and *pro*-drop.

### 3.2. Further Evidence: Negation and Object Pronouns

Sentential negation in simple declarative sentences in EA is marked by the discontinuous particles *ma . . . š*.<sup>15</sup> What is significant for our purposes is that these particles appear to occupy a NEG node above the tense node (cf. Laka 1990) and thus provide evidence for the relative position of the raised verb. Negation attaches to verbal elements in a particular way – an element that marks person agreement can raise to NEG and be bracketed by the negation particles.

- (27)    *ma-kan-š    biyibiiŋ-hum.*  
           NEG-BE-NEG selling-them  
           ‘He wasn’t selling them.’

The path of the head movement resulting in the negation attaching to the copula is shown below (for the sake of simplicity, we give the representation showing the relative positions of the relevant heads only):



A third objection is that pronominal object suffixes in EA cannot be given an “agree-ment” analysis, since even in the so-called “afterthought” constructions, the pronominal affixes may occur only with definite NPs as adjuncts, as in (16) above. It is true that this definiteness restriction holds in other clitic-doubling constructions, and it has been proposed that the clitics are a form of object agreement (see for example, Suñer 1988 and Mahajan 1991). But no explanation has ever been given for the fact that all these purported cases of object agreement require definiteness in their “doubled” objects, while no such crosslinguistic generalization can be made concerning subject agreement – many languages show overt subject agreement without requiring that subjects be definite or specific.

EA also does not show the freedom of word order that partially motivates the subject-as-topic analysis for MSA. MSA allows any argumental NP to immediately precede the verb; non-subject preverbal NPs are doubled by a pronominal clitic (Abd El-Moneim 1989, Demirdache 1989). Although EA does exhibit a clitic-left-dislocation structure, the verb can only be immediately preceded by a subject NP – orders such as OVS (possible in MSA) are simply not available in EA (only OSV is possible for a fronted object). This restriction would not be expected if preverbal subjects were simply in a topic position rather than an actual subject position.

Finally, regardless of whether the pronoun *huwwa* appears in the “true” subject position or in some higher topic position, our generalization still holds: free-standing pronouns can only appear VP-externally.

<sup>15</sup> Other dialects of Arabic also show a bound form of negation, such as Moroccan (Benmamoun 1991) and Tunisian (Raja Bahloul, personal communication).

Note that only the copula can raise to negation in sentences like (27). Thus, verb raising to NEG obeys the Head Movement Constraint (HMC; Travis 1984) in that it cannot skip over other head positions on the way to NEG. For example, the main verb cannot raise over the copula.

- (29) \*ma-biyibiiŋ-hum-š<sub>i</sub> kaan t<sub>i</sub>.  
 NEG-selling-them-NEG BE

The structural placement of NEG above Tns (and thereby above the copula) is verified by the fact that negation cannot bracket a verbal element below the copula:

- (30) \*kaan ma-biyibiiŋ-hum-š.  
 BE NEG-selling-them-NEG

Recall that present tense sentences contrast with the other tenses in that the tense morpheme is null. In these sentences the main verb *can* raise to attach to negation, since there is no lexical head intervening between Asp and NEG which would result in an HMC effect (in other words, the main verb can pass through the null tense head on the way up). In sentences with an object pronoun, when the main verb raises to NEG, the object pronoun appears internal to the discontinuous NEG bracketing. In contrast, full object NPs *cannot* appear internal to NEG.

- (31) a. ma-biyibiiŋ-**hum**-š.  
 NEG-selling-them-NEG  
 'He isn't selling them.'
- b. \*ma-biyibiiŋ-š **humma**.  
 NEG-selling-NEG they
- (32) a. ma-biyibiiŋ-š **burtu'aan**.  
 NEG-selling-NEG oranges  
 'He is not selling oranges.'
- b. \*ma-biyibiiŋ **burtu'aan**-š.

Thus, examples such as (31) provide further evidence that the attached pronouns do indeed raise out of the VP with the verb.<sup>16</sup>

<sup>16</sup> In imperative and subjunctive clauses, we assume that a Mood head alternates with Tense. Both these clause types may contain object pronouns, attached to a transitive verb which raises to adjoin Mood, as in the following example of a transitive imperative with a pronominal object:

Finally, to give a complete picture of sentential negation patterns in EA, we must distinguish a second type of negation. As we noted in the previous section, person agreement appears on elements that have raised to either T or Asp. Since predicate nouns and adjectives do not show person agreement with the subject, we assume that they do not raise out of the VP, according to our discussion in the previous section. It follows from the HMC that predicates that do not raise to be marked for tense or aspect cannot skip over intervening inflectional heads and be bracketed by NEG. Instead, a free-standing form *miš* occurs.

- (33) a. ʕali Ø miš maSri.  
 Ali BE NEG Egyptian  
 ‘Ali isn’t Egyptian.’
- b. \*ʕali ma-maSri-iš.  
 Ali NEG-Egyptian-NEG

The adjective *maSri* is not inflected for either tense or aspect, and it cannot skip over these heads to attach to the discontinuous negation morpheme. This is evidence that the adjective remains within VP. The free-standing negation particle *miš* appears when tense is phonologically null and there is no main verb to raise and attach to negation.<sup>17</sup>

- 
- (i) ʕiktib-ha!  
 2ms-write-3fs (Imperative)  
 ‘Write it!’

There is no NEG functional head in imperative clauses. In subjunctive clauses we see instead an adverbial NEG particle.

- (ii) laa tiktib-ha!  
 NEG 2ms-write-3fs (Subj.)  
 ‘Don’t write it!’ (‘May you not write it!’)

Subjunctive clauses also lack tense, but contain both aspect and NEG functional heads.

- (iii) ʕana ʕayza-k ma-tiktib-ha-š  
 I want-2ms NEG-2ms-write-3fs-NEG (Subj.)  
 ‘I want you not to write it.’

<sup>17</sup> Note that there are nonverbal predicates that mark subject agreement via a possessive pronoun, and that these predicates permit *pro*-drop and raise to be bracketed by the discontinuous sentential negation. These nonverbal predicates appear in marked sentence types such as “psych” nouns and possessive sentences.

- (i) a. bididi ʕaruH  
 wish-my 1s:go Subj.  
 ‘I want to go.’

3.3. *Summary*

In the previous two subsections we examined the basic inflectional syntax of EA and a type of sentential negation which appears only on items that

- 
- (i) b. ma-biddi-iš 'aruuH  
 NEG-wish-my-NEG 1s:go Subj.  
 'I don't want to go.'
- c. ma-kunt-iš biddi 'aruuH  
 NEG-1sBE-NEG wish-my 1s:go Subj.  
 'I didn't want to go.'

In past tense psych noun sentences, the copula appears and is bracketed by negation. Possessive sentences employ prepositional predicates.

- (ii) a. ʃandi gamal  
 with-me camel  
 'I have a camel.'
- b. ma-ʃand-iš gamal  
 NEG-with-me-NEG camel  
 'I don't have a camel.'
- c. ma-kunt-iš ʃandi gamal  
 NEG-1sBE-NEG with-me camel  
 'I didn't have a camel.'

The paradigm of these possessive/prepositional object pronouns in EA is distinct from the verbal object pronouns; the difference shows up in the first person singular form, which as a verbal object is *-ni* and as a prepositional object is *-i*. The verbal object pronouns always raise with the verb out of the VP. The possessive/prepositional pronouns raise only when the noun or preposition they are attached to is serving as the clausal predicate and thus raises out of the VP. An additional fact about prepositions that do not raise out of the VP is that they may also show attached pronominal objects.

- (iii) a. ʃali ʃandi-na  
 Ali with-us  
 'Ali is with us (at our house).'
- b. ʃali miš ʃandi-na  
 Ali NEG with-us  
 'Ali is not with us (not at our house).'
- c. \*ʃali ma-ʃandi-naaš  
 Ali NEG-with-us-NEG

Note that the pronoun attached to the preposition here *cannot* be reanalyzed as subject agreement, as appears to have happened with the "verbal" preposition in (ii) above. The pronoun is the object of the preposition. Since the preposition does not show subject agreement, it has not raised out of the VP; and without subject agreement, the prepositional phrase cannot raise further to attach to NEG.

show person subject agreement. Consideration of the interactions of tense, aspect, and agreement markings on verbal elements showed that pronouns attach only to the main verbs which inflect for agreement and aspect. Thus, these observations support our claim that object pronominals in EA must raise out of the VP at S-structure. There is of course the possibility that the aspect markings are attached to main verbs via “affix-hopping” rather than verb movement. Even if this is the case, consideration of the sentential negation paradigms provides further evidence for our claim that main verbs with attached object pronouns raise out of VP. The negation head attaches to the copula when a copula is present, but when the copula is non-overt (as in present tense clauses), the negation attaches to the main verb. The attachment of negation to a verbal head results from head movement of the verbal head into the negation head. As we showed above, this process is constrained by the Head Movement Constraint. As a result, a main verb moves into NEG only when no overt copula is present – that is, only in present tense sentences. The crucial fact is that when sentences of this kind include an object pronoun, this pronoun also appears internal to the negation morpheme. We take this as evidence that these object pronouns have raised with the main verb out of the VP.

#### 4. IS EA UNUSUAL? – OTHER CASES OF OBJECT MOVEMENT

In the sections that follow we will introduce data bearing on the syntax and semantics of object movement from languages quite unrelated to EA. This broadening of empirical coverage not only reinforces our proposed connection between object movement and the semantics of the objects that move, but also makes the connection between object movement and verb movement more explicit.

##### 4.1. *Object Shift in Scandinavian*

If we are correct in proposing that the movement of object pronouns in Egyptian Arabic results from a requirement on the derivation of logical representations, then we would expect movement of object pronouns to occur fairly generally in languages. In fact, the obligatory raising of pronouns out of the VP in EA brings to mind the phenomenon of “object shift” seen in the Scandinavian languages (see for example Holmberg 1986, Vikner 1990, and Johnson 1991). Object shift is a process which moves objects leftward (as indicated by their position relative to sentential negation) just in case the main verb has been moved from its base position, as in verb-second constructions (this association of object

movement with verb movement is often referred to in the literature as “Holmberg’s Generalization”).

- (34) a. Jón keypti ekki **bókina**. (Icelandic)  
 John bought not book-the  
 ‘John didn’t buy the book.’  
 b. Jón keypti **bókina** ekki  
 John bought book-the not  
 ‘John didn’t buy the book.’  
 c. \*Jón hefur **bókina** ekki lesið.  
 John has book-the not read
- (35) a. . . . at Peter uden tvívl ikke læste **den**. (Danish)  
 that Peter without doubt not read it  
 ‘that Peter without doubt didn’t read it.’  
 b. Peter læste **den** uden tvívl ikke.  
 Peter read it without doubt not  
 ‘Without doubt, Peter didn’t read it.’  
 c. \*. . . . at Peter **den** uden tvívl ikke læste.  
 that Peter it without doubt not read

The position of object NPs is indicated relative to the main verb and sentential adverbials. Thus, the (a) examples above show the object NPs in their base (unmoved) position to the right of the main verb and sentential adverbs and negation. The (b) sentences show the object NPs shifted leftward, to the left of sentential adverbs and negation. Finally, the (c) examples show that this movement is not possible when the verb has not moved from its base position.

There are a number of differences and similarities among the Scandinavian languages with respect to object shift. The first difference concerns the range of NPs which may undergo shift. Icelandic optionally permits shifting of a full NP, while the Mainland Scandinavian languages permit only pronouns to shift:

- (36) a. Hvorfor læste studenterne ikke **artikeln**? (Danish)  
 Why read students-the not articles-the  
 ‘Why didn’t the students read the articles?’  
 b. \*Hvorfor læste studenterne **artikeln** ikke?  
 Why read students-the articles-the not

Full NP shift in Icelandic is not obligatory, but shifting of pronouns is more or less obligatory (when the case-assigning verb has moved) in both Insular and Mainland Scandinavian.

(37) a. Hann las þær ekki. (Icelandic)  
 he read them not  
 'He didn't read them.'

b. \*Hann las ekki þær.  
 he read not them

(38) a. \*Peter læste uden tvivl ikke den. (Danish)  
 Peter read without doubt not it

b. Peter læste den uden tvivl ikke.  
 Peter read it without doubt not

Object shift is linked to movement of the main verb in both Mainland Scandinavian and Icelandic, but differences arise since the S-structure verb movement possibilities vary in the two types of languages. Icelandic shows verb movement to I(nflection) (V-to-I movement) as well as verb movement to C(omp) (V-to-I-to-C movement). Verb movement can thus appear in both main and embedded clauses in Icelandic. Mainland Scandinavian only permits V-to-I-to-C movement and does not exhibit V-to-I movement in the syntax. In other words, Mainland Scandinavian exhibits verb movement only in main clauses. This difference results in the fact that object shift may occur in both main and embedded clauses in Icelandic, but only in main clauses in Mainland Scandinavian.<sup>18</sup>

(39) a. \*... að Jón keypti ekki hann. (Icelandic)  
 that John bought not it

b. ... að Jón keypti hann ekki.  
 that John bought it not

'that John didn't buy it.'

(40) a. \*... at Peter den uden tvivl ikke læste. (Danish)  
 that Peter it without doubt not read

<sup>18</sup> The behavior of pronominal objects in Swedish is somewhat different from the other Mainland Scandinavian languages in that the movement of pronouns is apparently optional (though semantic effects are seen). We do not attempt to present a complete account of all the crosslinguistic variation, but see Josefsson (1993) for an analysis of Swedish pronominal objects which is similar in spirit to that proposed here.



- (40) b. . . . at Peter uden tvívl ikke læste **den**.  
 that Peter without doubt not read it  
 ‘that without a doubt Peter didn’t read it.’

Finally, there is a semantic constraint imposed on shifted full NPs in Icelandic. These NPs must be definite, or specific, in interpretation. Shifting an existential indefinite, such as a bare plural, results in ungrammaticality:

- (41) a. \*Hann las **bækur** ekki. (Icelandic)  
 he read books not  
 b. Hann las ekki **bækur**.  
 he read not books  
 ‘He didn’t read books.’

Shifting a definite object NP (whether plural or singular) is fine. Shifting a singular indefinite is bad, just as in the case of shifted bare plural objects:

- (42) a. Hann las **bækurnar** ekki.  
 he read books-the not  
 ‘He didn’t read the books.’  
 b. Hann las ekki **bækurnar**.  
 he read not books-the
- (43) a. Ég las **bókina** ekki.  
 I read book-the not  
 ‘I didn’t read the book.’  
 b. Ég las **bók** ekki.  
 I read (a) book not  
 c. Ég las ekki **bók**.  
 I read not (a) book

Since we are assuming the analysis proposed in Diesing (1990b, 1992b), in which indefinites are characterized as being potentially ambiguous, we expect that there would be some context-dependent variation in acceptability of indefinite object shift. Indeed, in contexts where a quantificational (rather than existential) interpretation is possible, shifting an indefinite object NP is grammatical. The shifted indefinite then yields an obligatory generic, or quantificational, interpretation of the object, however:

- (44) a. *Ég les ekki bækur.*  
 I read not books  
 'I don't read books.' (existential)
- b. *Ég les bækur ekki.*  
 I read books not  
 'I don't read books. (I just buy them . . . .)' (quantificational)

The example in (44a) shows that the unmoved indefinite object is interpreted existentially. However, when the indefinite is shifted, as in (44b), the result is a generic statement: 'Given any book, I don't READ it, I only BUY it.' This interpretation is similar to that of the scrambled indefinite objects in German discussed in section 2. As in the case of German, we assume that this interpretation in Icelandic results from the indefinite NP being bound by an abstract generic operator, by virtue of being incorporated into the restriction on the operator. This results in a presuppositional (quantificational) interpretation for the NP. Thus, it is only presuppositional NPs that shift in Icelandic.

To summarize the facts we wish to explain in our analysis, the full NPs that can be shifted in Icelandic are those which can receive a presuppositional interpretation – either by being definite or by being incorporated into the restriction of some quantificational operator. Mainland Scandinavian limits object shift to a subset of presuppositional NPs, namely the pronouns. Object shift in all the Scandinavian languages is linked to overt verb movement: V-to-I-to-C in Mainland Scandinavian, and both V-to-I and V-to-I-to-C in Icelandic. In addition, if we limit our attention to the case of pronoun shift, the parallelism to the Egyptian Arabic data is clear: pronoun shift in all instances considered so far is associated with movement of the main verb.<sup>19</sup>

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<sup>19</sup> Holmberg (1986) associates the occurrence of object shift in Scandinavian with the presence of morphological case marking (m-case) on the object NP rather than main verb movement. This correlation works nicely for the languages discussed here, in which only NPs with m-case (pronouns in Mainland Scandinavian, pronouns and full NPs in Icelandic) shift, but the correlation breaks down when other languages are considered, as Vikner (1990) points out. Faroese, which marks m-case on *all* NPs, does not allow object shift of full NPs (data based on Barnes 1992):

- (i) a. *Jógvan keypti ikki bókina.* (Faroese)  
 Jógvan bought not book-the  
 'Jógvan didn't buy the book.'
- b. \**Jógvan keypti bókina ikki.*  
 Jógvan bought book-the not

#### 4.2. *Particle Shift in English*

At this point, we will examine another case of apparent reordering of object pronouns with respect to the verb, this time from English. In a recent paper, Johnson (1991) proposes to extend the notion “object shift” to a number of constructions in English, among them the so-called *particle shift construction* (Bolinger 1971, Fraser 1976, among others). Johnson notes that there is a “characteristic paradigm” associated with the particle shift construction:

- (45) a. Bert looked **the reference** up.  
 b. Bert looked up **the reference**.  
 c. Ernie threw **the trash** out.  
 d. Ernie threw out **the trash**.
- (46) a. Bert looked **it** up.  
 b. \*Bert looked up **it**.  
 c. Ernie threw **it** out.  
 d. \*Ernie threw out **it**.

As the examples above show, a full NP object can appear on either side of the particle – the shift is optional. Pronouns, on the other hand, must appear “shifted” to the left of the particle.<sup>20</sup> As in Scandinavian and EA, the process by which pronouns shift is obligatory.

There are some well-known exceptions to the generalization that pronouns must obligatorily appear to the left of the particle in English. For example, stress on the pronominal object permits it to appear to the right of the particle.

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Unlike Icelandic, Faroese does *not* permit V-to-I movement, however (see Vikner 1990 for more discussion). Déprez (1991) attempts to salvage the case-marking account by dissociating morphological case marking from the possibility of case marking a derived (i.e. moved) object in its moved position. Even on this sort of account, however, the true correlation seems to be between object shift and verb movement.

It is worth mentioning at this point that the Continental West Germanic languages (such as German, Dutch, and Yiddish) also exhibit a form of pronominal object shift (Lenerz 1977, den Besten 1983) which may be distinct from the scrambling discussed in section 2. The facts for these languages are somewhat different from Scandinavian, and are in some instances complicated by the presence of “agreeing complementizers” (for example, see Hageman 1992 for West Flemish; Bayer 1984 for Bavarian). We will therefore reserve consideration of the full array of Continental Germanic languages for future research.

<sup>20</sup> Note that, contrary to common usage, we are considering the *pronoun* to be the element that undergoes the “shift” in the particle shift construction.

- (47) a. If you want to ease your mind by blowing up somebody, come out into the court and blow up ME.  
 b. Fancy taking on HER! (Bolinger 1971, 39–41)

A pronominal object that carries deictic force also need not appear in the shifted position:

- (48) I cleaned off ~~it~~ that.

Conjoined object pronouns also are exceptions to the generalization that pronouns cannot appear to the right of the particle in the particle construction.

- (49) Mikey looked up him and her.

Finally, not all (unstressed, non-conjoined) pronouns must appear in the shifted position. The indefinite pronoun *one* is perfectly felicitous on the right of the particle:

- (50) a. I needed a new umbrella, so I picked up **one** at the store.  
 b. \*I ordered a new umbrella, and picked up **it** at the store.

This last example shows that it is not simply the prosodic lightness of the (unstressed) pronoun that induces the pronoun to appear to the left of the particle (contrary to suggestions made in Kayne 1984 and elsewhere).

The English particle shift facts illustrate a basic generalization: unstressed definite pronouns must precede the particle in the particle construction. Deictic use or stress can override this constraint, and the behavior of the indefinite pronoun *one* shows that definiteness is the crucial factor. This last observation is especially important given the semantically driven explanation we have proposed for pronoun shift. At this point the parallel to at least the Mainland Scandinavian data is clear, in that English also obligatorily shifts object pronouns in the particle construction. In the following sections we will move toward an analysis that will account for the full range of data seen in Germanic, as well as the Egyptian Arabic facts.

#### 4.3. *Putting It All Together: English and Scandinavian*

If the English particle shift facts are to be considered in some way comparable to Scandinavian object shift, the Scandinavian data needs to be reexamined in light of the exceptions noted above. In this section we look at the exceptions noted for the English pronoun shift construction to see whether they carry over to Scandinavian as well. First, just as in English, stress on a pronoun (and deictic use) can also override the obligatoriness of object shift for pronouns in Scandinavian:

- (51) a. Hann las ekki **PÆR**. (Icelandic)  
 He read not THEM  
 'He didn't read them.'
- b. \*Hann las ekki **þær**.  
 He read not them
- (52) a. Peter læste ikke **DEN**. (Danish)  
 Peter read not THEM  
 'He didn't read them.'
- b. \*Peter læste ikke **den**.  
 Peter read not them

Conjoined pronouns in Mainland Scandinavian *cannot* shift. This is not surprising, since Mainland Scandinavian does not permit full NPs to shift. Icelandic does permit full NPs to shift, and to the extent that conjoined pronouns are possible in Icelandic, they needn't shift:

- (53) a. \*Han saa **dig og hende** ikke sammen. (Danish)  
 he saw him and her not together
- b. Han saa ikke **dig og hende** sammen.  
 he saw not him and her together  
 'I didn't see him and her together.'
- (54) a. Ég þekki **hann og hana** ekki. (Icelandic)  
 I know him and her not  
 'I don't know him and her.'
- b. Ég þekki ekki **hann og hana**.  
 I know not him and her  
 'I don't know him and her.'

Finally, indefinite pronouns (*en/ett* 'one') in Mainland Scandinavian behave just as in the English particle construction – they don't undergo object shift.<sup>21</sup>

<sup>21</sup> Thanks are due to Anders Holmberg for help with the Mainland Scandinavian data here, allowing us to correct an error made in an earlier version of this paper. Christer Platzack (personal communication) pointed out to us that some additional support for the proposal made here may be found in the behavior of the Swedish *naagon*, meaning 'some/any'. This indefinite must remain to the right of negation. If it undergoes object shift, it must incorporate into the negation to form a negative quantifier *ingen* 'no one'.

- (55) a. Nej, jag har inget paraply, (Swedish)  
 No I have not umbrella  
 men jag köper möjligen **ett** i morgon.  
 but I buy possibly one tomorrow  
 'No, I have no umbrella, but I will possibly buy one tomorrow.'
- b. \*men jag köper **ett** möjligen i morgon.  
 but I buy one possibly tomorrow
- (56) a. Nei, jeg har ingen paraply, (Norwegian)  
 No I have no umbrella  
 men jeg kjøper muligens **en** i morgen.  
 but I buy possibly one tomorrow  
 'No, I have no umbrella, but I will possibly buy one tomorrow.'
- b. \*men jeg kjøper **en** muligens i morgen.  
 but I buy one possibly tomorrow

One difference between English and Scandinavian is that while the indefinite pronoun in English need not shift, it optionally can. In Scandinavian the shifting of the indefinite pronoun is ruled out. This may be related to the fact that Mainland Scandinavian has a distinct generic indefinite pronoun, and this pronoun (as expected) must shift.

The properties of pronoun shift in the various Germanic languages can be summarized as follows: unstressed definite pronouns must in all cases shift. Stressed and conjoined pronouns (where possible) needn't shift in English and Icelandic. Several conclusions follow from these generalizations. The first is that the syntactic behavior of the unstressed pronouns is more like that of clitics than full NPs (see Kayne 1975 on the properties of clitics). It is these facts that lead Josefsson (1992) to propose that the shifted pronominals in Scandinavian are  $N^0$  categories rather than NPs (Déprez 1991 reaches a similar conclusion; but see the discussion in

- 
- (i) a. Jag behövde ett paraply, men fann inte **naagot**.  
 I needed an umbrella, but found not any  
 'I needed an umbrella, but didn't find one.'
- b. \*Jag behövde ett paraply, men fann **naagot** inte.  
 I needed an umbrella, but found any not
- c. Jag behövde ett paraply, men fann **inget**.  
 I needed an umbrella, but found none  
 'I needed an umbrella, but found none.'

Holmberg 1991 for a different proposal). Thus, the Germanic pronoun shift process can be analyzed as an instance of head movement. The pronouns attach to the main verb and move out of the VP with it, just as in Egyptian Arabic.<sup>22</sup> We will return to the details of this process below.

A second generalization which is consistent with the above conclusions concerning the categorial status of the shifted pronouns is that stressed and/or conjoined pronouns can only shift in languages which allow full NPs to shift (English and Icelandic). Thus, it appears that stressed and conjoined pronouns behave like full NPs rather than N<sup>0</sup> clitics.

In attempting to draw parallels between the various cases of object pronoun movement, a number of questions remain. First, object shift in Scandinavian is tied to movement of a main verb (just as in Egyptian Arabic). Does this also hold for English? Second, full NP shift in Icelandic requires that the shifted NP be definite or quantificational (rather than existential). Is this true for English? In the next section we will consider the first of these two questions; we will return to the second question in section 6.

#### 5. VERB MOVEMENT AND SHIFTING PRONOUNS IN ENGLISH – JOHNSON (1991)

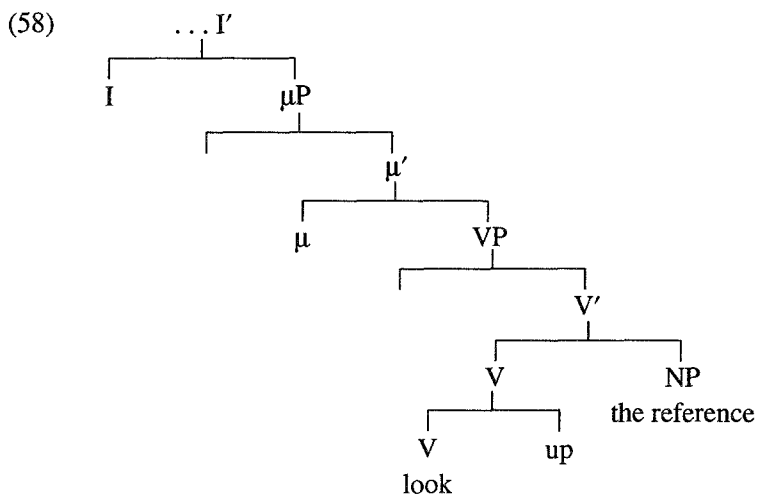
While it is clear from the discussion up to this point that both the Scandinavian and the Egyptian Arabic cases of pronoun movement are linked to verb movement, it is less clear that a connection to verb movement (at S-structure) can be maintained for English. However, Johnson (1991) proposes an analysis of English particle shift which finds its basis in the assumption that S-structure verb movement is relevant for English particle shift as well. In this section we give a brief summary of Johnson's analysis to show how it can be applied to the cases considered here. Johnson's proposal relies on the following initial assumptions:

- (57) a. Specifiers of XP precede X'.
- b. Verbs always move out of the VP they head – to a position labeled  $\mu$  (cf. Pesetsky 1989).
- c. Accusative case-marked NPs move to Specifier of VP.
- d. Verb-particle combinations are generated as a complex verb.

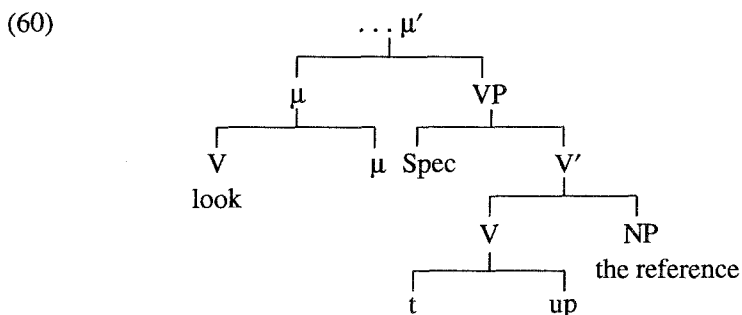
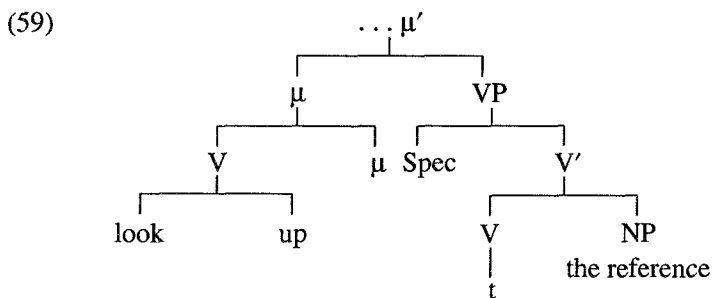
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<sup>22</sup> One difference between the EA case and the Germanic cases under consideration is that the Germanic languages appear to allow "excorporation" of the verb. Though excorporation has been regarded as impossible (Baker 1988, Kayne 1991), Roberts (1991) provides evidence that it should be allowed just in case the host is not morphologically subcategorized for the incorporated element. See also Josefsson (1992) for more discussion of this issue.

These assumptions yield the following underlying structure for particle constructions such as *look up the reference/look the reference up*:



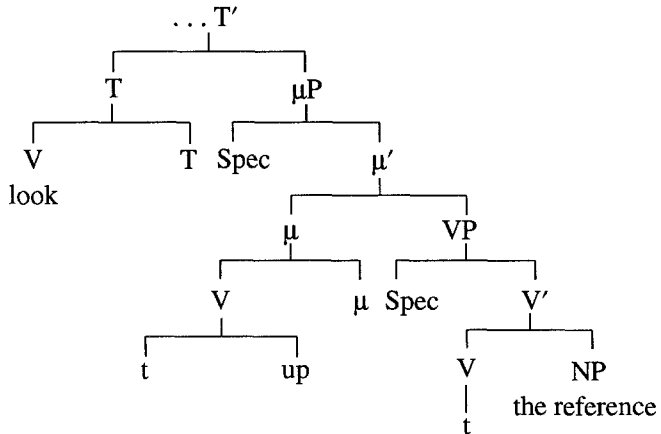
The two variants of the particle construction are generated, as a first step, by either allowing the complex verb *look up* to move as a unit, as in (59), or by separating *look* and having it raise to adjoin to  $\mu$  on its own, as in (60).



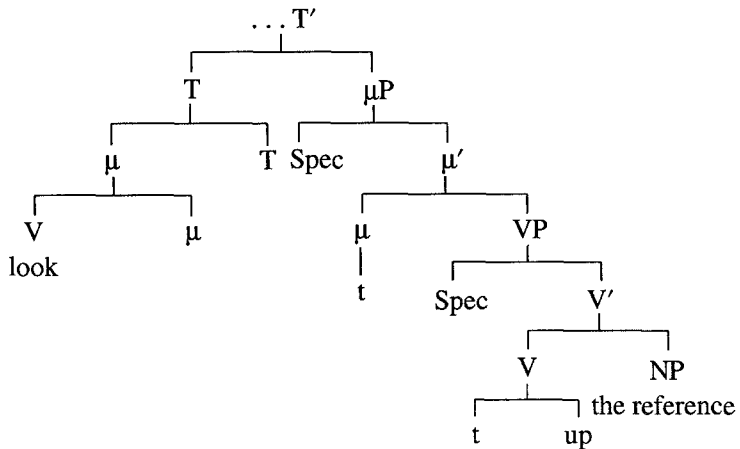


Note that the separation of the verb and particle in the structures shown above is optional. Johnson claims that the obligatory cases of shift result from verb movement to tense, which cannot take the particle with it. (He follows here a constraint on verb movement proposed in Koopman (1991) which prohibits a verb+particle from combining with the tense morpheme.) This in turn yields two possible derivations:

(61)



(62)



Alternation of the object NP position relative to the particle does not simply depend on when the verb and particle separate in the derivation. This contrast arises as a result of certain assumptions Johnson makes about case marking, following Holmberg 1986. Holmberg proposes that case marking may occur at different levels of the derivation. Thus, in Johnson's analysis of particle shift the alternation between the two positions of the NP with respect to the particle is derived from differing possibilities for the assignment of Accusative case, as well as the option of leaving the

particle stranded in its D-structure position by the initial movement of the verb.

Johnson assumes that structural case is assigned by  $\mu$  under government, but case assignment can be delayed until the verb raises to T. Thus, Accusative case can be assigned to either [Spec, VP] (assigned by the verb in  $\mu$ ) or [Spec,  $\mu$ P] (assigned by the verb in T). In the former case, the particle may precede the NP (if it is carried to  $\mu$  with the verb) or follow it (if the particle is stranded in its base position). In the latter case, the particle always follows the NP (it cannot be carried up to T with the verb). As we mentioned above, this gives rise to obligatory "shift" of the NP to the left of the particle.

Johnson's approach nicely links particle shift to verb movement, and also gives a derivation which allows for some obligatory instances of shift, but there are a number of questions that remain. First, there is still no account for why pronoun shift is obligatory. In other words, Johnson shows how obligatory shift *can* happen, but not why in the case of pronouns it *must* happen. Another shortcoming is that there is no explanation of the definiteness factor (that is, the exceptional behavior of the indefinite pronoun *one* in English, and the restriction on shift of full NPs in Icelandic). Furthermore, in treating both full NP shift and pronoun shift as movement to specifier (XP) positions, Johnson's analysis gives us no account of the clitic-like behavior of shifted pronouns. A final problem with Johnson's analysis lies in his proposal that verbs move to T at S-structure in English. This leaves the classic differences between French and English (as analyzed by Emonds 1978, and more recently by Pollock 1989) unexplained. Since the reason Johnson proposes this additional movement of the verb is to derive the obligatoriness of the shifted order with pronominal objects, an alternative account of this obligatoriness may do away with this difficulty.

## 6. WHAT IS $\mu$ ?

We will approach the answers to the questions laid out at the end of the preceding section by way of answering yet another question: What is the identity of the head  $\mu$ ? Johnson considers this question, and he very tentatively suggests a connection to AgrO or some other affix which even nontensed verbs must raise to attach to. We will instead pursue the possibility that English is like Egyptian Arabic in that there is an Asp head to which main verbs move. One clue that indicates that this may be a reasonable way to proceed is the fact that obligatory pronoun shift occurs with progressives and perfectives in English:

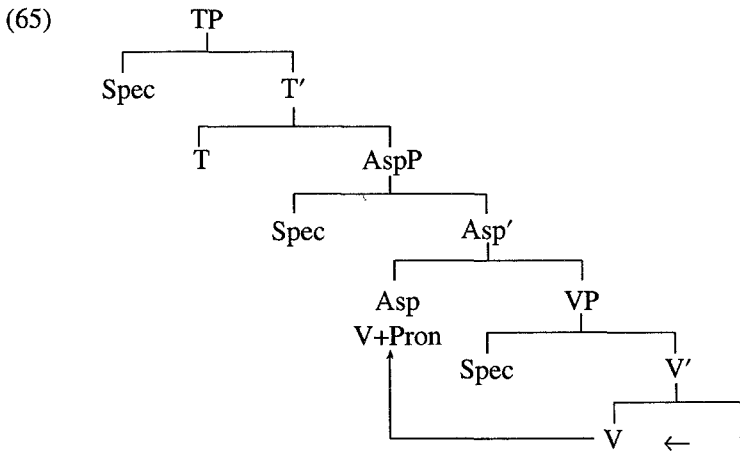
(63) a. Bert is picking **them** up.

b. \*Bert is picking up **them**.

(64) a. Bert has picked **them** up.

b. \*Bert has picked up **them**.

While these data are merely suggestive (though they do show decisively that obligatory pronoun shift cannot be due to verb movement to T, as proposed by Johnson), we propose that the head  $\mu$  is in fact really Asp. This possibility not only explains the association of pronoun shift with the marking of progressive and perfective aspect in English, but also brings analysis of pronoun shift in English in line with the tentative proposal made concerning the attached object pronouns in Egyptian Arabic. That is, pronominal objects raise to a VP-external head position via S-structure head movement of the verb.<sup>23</sup> The tree in (65) shows the path of the verb raising to Asp, taking with it any pronominal object.



Thus, although the pronoun is base-generated in the complement position of the verb (an XP position), it behaves as a head ( $X^0$ ) in that it can attach to the verb and raise with it via head movement. This brings up the question of how an argument generated in a phrasal position can undergo head movement. Haegeman (1992), in her discussion of pronominal clitics in

<sup>23</sup> The head Asp may in fact be a particular instantiation of a more general notion of an inflectional head associated with transitivity, similar to that proposed by Murasugi (1992). One possible way of implementing this would be to allow the exact instantiation of the features of the head to vary: in some cases they could be associated with aspect as suggested here (and see Ramchand 1991 for another such proposal), while in other cases the head might be associated with another feature or set of features – for example, those associated with voice, as in the analysis developed by Kratzer (1994).

West Flemish, suggests a way of resolving this apparent categorial conflict in terms of Muysken's (1983) theory of X-bar phrase structure rules.<sup>24</sup> She suggests that the categorial ambiguity involved can be represented in terms of Muysken's features [maximal] and [projection]: pronouns would be [+maximal] and underspecified for [projection]. The [-maximal] feature makes them incompatible with modifiers (unlike true N<sup>0</sup> heads). The two available options for the feature [projection] permit pronouns to appear in specifier positions, as in V2 clauses in Scandinavian ([+projection]), or to display clitic-like behavior ([-projection]).

Recall that English differs from EA (and Mainland Scandinavian as well) in that it seems to have the additional possibility of moving phrasal objects. Our claim is that these phrasal objects raise to a specifier position. We will assume that full NPs can move to [Spec, VP]. (We will postpone discussion of why full NPs in EA *cannot* shift to a later section.) Thus, shifted pronouns and shifted full NPs have different landing sites. Parallel to Johnson's analysis, the alternation in the ordering of the full NP and the particle depends on whether the NP is assigned case in its base position and the verb+particle combination raises to Asp, or the verb separates from the particle before raising to Asp, necessitating movement of the NP to [Spec, VP] to receive case.<sup>25</sup>

This proposal raises an important question concerning the interpretation of the shifted full NP objects. Since we are claiming that in English they move to a VP-internal specifier position, we expect that it would *not* be the case that shifted objects must receive a specific interpretation (unlike the case of German object scrambling, or Icelandic full NP shift). Mahajan (1991) suggests that only specific NPs can shift in the English particle construction, but a careful examination of the data does not bear out this claim.<sup>26</sup>

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<sup>24</sup> Muysken's proposals are also adopted in the analyses of pronominal movement given by Déprez (1991), Josefsson (1992), and Uriagereka (1992), among others.

<sup>25</sup> Of course, if a VP-internal subject analysis is to be maintained, [Spec,VP] cannot be the subject position (as suggested in Diesing 1990a, 1992a,b). We therefore adopt the sort of analysis proposed by Koopman and Sportiche (1988), in which the subject is generated in a position adjoined to VP.

<sup>26</sup> Mahajan's claim is based on a contrast seen in examples such as (i):

- (i) a. He let out a yell.  
 b. \*? He let a yell out.

Mahajan suggests that the difference in grammaticality between (i.a) and (i.b) is due to a prohibition on shifting indefinite NPs to the left of a particle. But, contrary to what one would expect if this were the case, shifting a definite NP in this context is also rather awkward:

- (66) a. I put **mittens** on.  
 b. I put on **mittens**.  
 c. I washed **dishes** off.  
 d. I washed off **dishes**.
- (67) a. ?I wrote **stories** up.  
 b. I wrote up **stories**.  
 c. ?I gobbled **sardines** up for lunch.  
 d. I gobbled up **sardines** for lunch.

While there may be some contrast in meaning in the examples above, it is not at all clear that the difference is one of specific/nonspecific interpretations. Evidence that an indefinite reading is in fact available comes from extraposition facts. As is well known, extraposition from an NP requires that the NP be an indefinite with a nonspecific interpretation (Guéron 1981, Reinhart 1987, Diesing 1992b). If shifting an indefinite to the left of the particle resulted in a specific interpretation, as object shift in Icelandic does, we would expect that extraposition would be impossible in these cases. Extraposition is in fact possible from an indefinite NP which appears to the left of a particle in the verb-particle construction.

- (68) a. Bert threw **some pictures of his dogs** out.  
 b. Bert threw **some pictures** out of his dogs.

We will therefore assume that shifted full NPs in English can have an indefinite interpretation, and this is a result of the fact that they move to the specifier position of the VP rather than a VP-external position.<sup>27</sup>

To summarize, as in Egyptian Arabic, the obligatoriness of particle shift with pronouns results from the semantic requirement that the pronoun raise out of VP. The verb raising to the Asp head provides the means by which the pronoun can move at S-structure. The verb must separate from the particle to allow the pronoun to attach to V and get a ride out of VP.

- 
- (ii) \*?He let the yell out.

The contrast seems to be more readily explained by the idiomatic nature of the phrase *let out a yell*. As Fraser (1976) notes, idiomatic phrases like *blow off steam* do not allow the shifted order of the NP and particle (*\*blow steam off*). Note also that in other (less idiomatic) contexts *let out* permits an indefinite NP to the left of the particle:

- (iii) He let a cat out.

<sup>27</sup> This of course does not preclude movement of the object NPs at LF.

Finally, full NPs that shift can move to a VP-internal specifier position to give the shifted order, and this shifting is not subject to any semantic constraint.

Note that our analysis differs from Johnson's in a number of respects. First, we only exploit one instance of S-structure verb movement – that of V-to-Asp. Since the difference between pronominals and full NPs is linked to pronominals being heads and the semantic requirement that they leave the VP, there is no need to require the additional step of verb movement to T that Johnson uses to distinguish the pronominals from full NPs. This in turn allows the commonly assumed accounts (Emonds 1978, Pollock 1989) of the word order differences between English and languages like French to be maintained.

### 6.1. *Scandinavian Again*

In section 4.3 we observed that the pronoun shift in the English particle construction exhibits behavior very similar to that of the pronoun shift in Scandinavian. The fact that the object pronouns in all the Germanic languages under consideration behave more like heads than XPs suggests that they should be given a common analysis – the pronouns attach to the verb and shift via head movement. But, if the English particle shift construction is in fact to be analyzed analogously to object shift in Scandinavian, we have a few differences between the particle shift and object shift constructions yet to account for. The first of these concerns the environments in which pronouns can shift. Recall that object shift in Mainland Scandinavian only occurs in conjunction with movement of the main verb to Comp (V-to-I-to-C), and that Icelandic minimally requires verb movement to inflection (V-to-I). This differs from the particle shift construction, in which even untensed verbs induce pronoun shift.

- (69) a. He tried to wash **it** out.  
 b. \*He tried to wash out **it**.

However, it is also clear that the pronouns which shift in the particle construction do not move to the same position as the pronouns in the object shift construction, since they cannot precede sentence-level adverbs:

- (70) a. \*He washed **it** yesterday out.  
 b. \*He claimed to have washed **it** yesterday out.

Note also that in particle constructions objects can shift in Icelandic in contexts where no verb movement to T has taken place:

- (71) a. Í gær hafa þeir sent þa upp. (Icelandic)  
 yesterday have they sent them up  
 ‘Yesterday they have sent them up.’
- b. Í gær hafa þeir sent peningana upp.  
 yesterday have they sent money up  
 ‘Yesterday they sent money up.’

In Mainland Scandinavian, there is some crosslinguistic variation as to whether sentences such as those in (71) are possible. Norwegian and Danish show behavior similar to Icelandic and English, while Swedish does not. Accounting for all the variation seen in Mainland Scandinavian is beyond the scope of this paper (see Taraldsen 1983 and Áfarli 1985 for some relevant discussion); we will simply assume that while there is crosslinguistic variation in whether or not object shift to the left of a sentential adverb takes place, depending on the S-structure verb movement options available, there is evidence in all three types of languages for a case of “short” verb movement to Asp, which licenses shifting of objects to the left of a particle.<sup>28</sup> In the discussion below, we will distinguish these two types of object movement as *object shift* and *particle shift* respectively.

A second point of variation between the various cases of object movement in Germanic concerns which element may undergo shift – pronouns only, or full NPs as well. We will discuss these differences toward the end of this section.

Focusing first on the issue of verb movement alone, if we make the reasonable assumption that what is commonly referred to as V-to-I movement in Scandinavian is actually V-to-T movement, various differences between the particle shift and the object shift constructions become apparent. First, in the case of the particle shift constructions the verbs clearly move to some point below T. We claimed above that the verb is moving to Asp in these cases. This “shortest” verb movement occurs in all the Germanic languages discussed here. Second, there is variation in whether the S-structure verb movement required for object shift obtains. English main verbs never move beyond Asp, whereas in Icelandic they can move to T or on to C. Mainland Scandinavian displays the short verb movement to Asp seen in English in the particle shift construction, but does not have verb

<sup>28</sup> Alternatively, one could take the approach suggested by Collins and Thráinsson (1994), in which in addition to inflectional heads above the VP, there is also the possibility of inflectional heads within the VP in a “VP-shell” structure (Larson 1988, Travis 1991). We believe that regardless of the approach taken, the results presented here remain valid.

movement to T at S-structure, while it does allow V-to-I-to-C. The issue then is how to account for the variation in the “distance” of S-structure verb movement that is possible in each case. Assuming the existence of the three inflectional heads C(omp), T(ense), and Asp(ect), the differences between English, Mainland Scandinavian, and Icelandic with respect to verb movement (and the leftward movement of objects that is linked with it) may be explained in terms of the morphological properties of these heads.

Recent work has converged on the idea of deriving certain word order differences from differences in the “strength” of features in inflectional morphology. An early example of this approach in the literature is Kratzer (1984), focusing on English and German word order. More recent instantiations of this idea can be found in Pollock (1989) and Chomsky (1992). The basic intuition behind the distinction between “strong” and “weak” features is that strong features must attach to a lexical head (e.g. a verb) in the overt syntax, while weak features attach later in the derivation (i.e. at LF).<sup>29</sup> The strength of any given feature is a point of parametric variation. A feature that is strong in one language may be weak in another.

This idea gives us a means for characterizing the differences in verb movement among the various Germanic languages considered here, and thereby also an explanation for the varying distribution of pronoun shift. We assume that the hierarchical arrangement of the three inflectional heads in the Scandinavian languages is similar to English, but that the heads differ crosslinguistically with respect to their morphological strength. Beginning with the particle construction, we assume that since in this case object movement occurs in all the languages, the main verb *always* moves to Asp. Thus, the Asp feature is strong – it must be realized on the verb at S-structure. English does not show any further S-structure movement of the main verb, so T and C are weak, and consequently no shifting of objects to the left of sentential adverbs is seen. This contrasts with Mainland Scandinavian, in which there is also no V-to-T movement (T is a weak feature), but V-to-T-to-C occurs obligatorily at S-structure. Therefore C, or whatever feature in C is responsible for inducing verb-second – for the purposes of simplicity we will follow Platzack and Holmberg (1989) in assuming that there is a finiteness operator [+F] in C – is strong. This gives the result that Mainland Scandinavian exhibits S-structure movement of the main verb to C, but not to T. Since verb movement is constrained by the Head Movement Constraint (Baker 1988, and see also the discus-

<sup>29</sup> Chomsky (1992) actually characterizes this distinction in terms of a process of “feature-checking,” which may occur either before or after the phonetic realization process (“spell-out”).



sion of Egyptian Arabic above) the verb must move through the inflectional heads below C on its way to C. Therefore, in Mainland Scandinavian the verb will pass through T if and only if it moves to C. Since pronoun shift to the left of the sentential adverb (as opposed to the shorter shift seen in the particle construction) is tied to movement of the main verb to T, pronominal object shift in Mainland Scandinavian will only occur when the main verb moves to C. Otherwise, the movement of the verb and concomitant shifting of object pronouns is delayed until LF.

Finally, in the case of Icelandic, again Asp is strong; pronominal shift in the particle construction is seen in the absence of verb movement to T. But T is strong as well, as evidenced by the fact there is main verb movement in embedded clauses. So is the feature [+F] in C, which accounts for the obligatoriness of verb-second in main clauses. Thus we see pronominal object shift when the verb undergoes either V-to-C or V-to-T movement. In both cases the verb must pass through T, and this verb movement triggers pronoun shift. The movement of the verb *enables* the object pronouns to move, and the unselectivity of existential closure *forces* them to move.

In all of the Germanic languages discussed here, stressed pronouns differ from unstressed ones in two ways. First, they are deictic or contrastive in nature; in this respect they function as “new” information. Therefore, they can remain within the VP without violating Heim’s Novelty Condition.<sup>30</sup> Second, they are distinguished syntactically as well as semantically from unstressed pronouns, in that they are full NPs rather than N<sup>0</sup>s and therefore cannot undergo head movement.

As we mentioned above, the Germanic languages vary with respect to another property as well: whether full NPs can shift. For example, English and Icelandic allow full NPs to shift, but the Icelandic full NP shift seen in the object shift construction is limited to NPs with a definite or specific interpretation, while the shift seen in the particle construction does not seem to show this semantic restriction. In terms of the analysis presented here (based on the Mapping Hypothesis), Icelandic object shift allows full NPs to shift only to a VP-external position. The available position that fulfills this description is [Spec, Asp]. Full NP shift in the particle construction is apparently less constrained, as both indefinite and definite/specific NPs can shift. This suggests that shifted full NPs in

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<sup>30</sup> This raises the question of what the semantic type of stressed or deictic pronouns is. We will not deal with this issue in detail, other than to suggest that perhaps these pronouns are instances of type  $\langle\langle e, t \rangle, t \rangle$ . See Partee (1987) as well as Neale (1990) for more detailed consideration of this possibility. For further discussion of syntactic contrasts between stressed and unstressed pronouns, see Montalbetti (1984) and Larson and Lujan (1990).

the particle shift construction appear in a VP-internal position at S-structure, namely [Spec, VP], as we proposed above for English. Finally, Mainland Scandinavian does not allow object shift to move full NPs at all – somehow there is no specifier position available.

The variation thus boils down to whether or not a specifier is available, and if one is available, which one it is ([Spec, VP] or [Spec, Asp]). Note that shifting into a given specifier requires that there be S-structure movement of the verb into the head immediately *above* that specifier. Object shift into [Spec, Asp], as seen in Icelandic, requires V-to-T movement, and shift into [Spec, VP] (the particle shift) requires the verb to move to Asp. Allowing V-to-I-to-C only (as in Swedish) does not suffice to license full NP shift to [Spec, Asp], though verb movement to Asp will license NP shift into [Spec, VP]. In other words, a full NP in either [Spec, VP] or [Spec, Asp] must be licensed by either a strong Asp head or a strong T head, respectively.

These observations bring to mind the analysis of full NP shift in Icelandic proposed by Jonas and Bobaljik (1993). Jonas and Bobaljik note that in order for the subject to be able to raise to the specifier above a shifted object without violating the “Shortest Movement” condition of Chomsky (1992), verb movement to the head above the shifted object must take place. The verb movement allows the subject to skip over the lower specifier occupied by the shifted object by rendering the higher specifier equidistant from the base position of the subject. On Jonas and Bobaljik’s account then, the possibility of full NP object shift is linked to the availability of the [Spec, TP] position at S-structure, and the licensing of this specifier is linked to S-structure movement of the verb to T in Scandinavian. This is parallel to the situations described above; the shifting of full NP objects is only permitted when the “next specifier up” is licensed for movement of subjects. Pronominal object shift, being an instance of head movement, does not involve movement into a specifier position, and therefore is not subject to this condition.

To sum up, not only are the landing sites for shifted full NPs and pronouns different (the former landing in a specifier, and the latter moving into a head position), the landing site for shifted full NPs varies cross-linguistically as well. By virtue of licensing verb movement to T at S-structure, Icelandic permits object shift into a VP-external position, and this is reflected in the requirement that the shifted NP be specific or definite (as predicted by the Mapping Hypothesis in conjunction with the scoping constraint). By contrast, English allows only verb movement to Asp at S-structure. Consequently full NPs can only shift to the VP-internal [Spec, VP], and thus even existential indefinites can undergo shift. Since

pronouns move via the head movement of the verb, they raise out of VP regardless of whether the verb moves only to Asp or further to T or C. Thus, we see the semantically driven movement “piggy-backing” on the available options for S-structure movement, which in turn are determined (at least in Scandinavian) by the strength of the various inflectional features.<sup>31</sup>

### 6.2. *Return to Egyptian Arabic*

Returning to the question raised in the discussion earlier in this paper concerning the motivation of the attachment of object pronouns in Egyptian Arabic, there appear to be significant correspondences between this object attachment in EA and the “object shift” we have surveyed in Germanic. Recall that in EA object pronouns must move out of the VP via head movement of the verb to Aspect; however, full NPs cannot move out of the VP at the level of the syntax. We may note also that EA, like Germanic, shows no movement of conjoined or stressed pronouns.

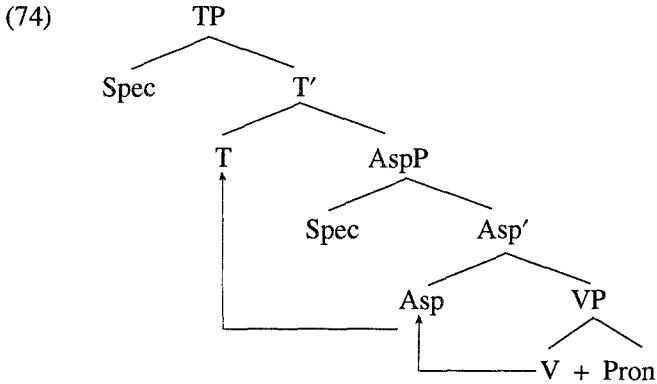
- (72) a. \*šaaf-u    **wi**    **hiyya**.  
           saw-him and she
- b. šaaf-u    wi    šaaf-ha.  
           saw-him and saw-her
- ‘He saw him and (he) saw her.’

Since object pronouns cannot be conjoined, it is necessary to conjoin clauses, as in (72b). There are no stressed object pronouns in EA; focus may be placed on an object by using a left dislocation construction with a resumptive object pronoun.

- (73)    HUUWA/ir-raagil-da, ʕali šaaf-u    imbaariH.  
           HE/the-man-that        Ali saw-him yesterday
- ‘HE/THAT man, Ali saw him yesterday.’

<sup>31</sup> Note that while German scrambling (as presented in section 2) shows semantic properties similar to object shift, scrambling is independent of S-structure verb movement. Thus an explanation in terms of the strength of inflectional features will not account for the German scrambling data. At this point we will simply assume that German permits more movement options than Scandinavian, allowing it an additional means for satisfying the Scope Condition. This assumption is supported by the fact that scrambling exhibits a number of A-bar properties (such as licensing parasitic gaps) not seen in object shift. See Diesing (1994) for more discussion on the relationship between semantically driven movements and other S-structure movement options in Germanic.

We propose that, as in the case of Germanic, it is the definiteness of object pronouns that forces them to move out of VP (to get out of the scope of existential closure), and that they do so via head movement in conjunction with the movement of the verb.



A question not fully explored here is why full NPs in Egyptian Arabic cannot undergo object shift. A possible clue may lie in the fact that as noted earlier, subjects move through *both* [Spec, AspP] and [Spec, TP], as shown by the “spreading” subject agreement on both the copula and main verb:

- (75) ʕali kaan biyibiiʕ ig-gamal.  
 Ali BE (3ms-Past) selling (3ms-Imperf.) the-camel  
 ‘Ali was selling the camel.’

The spreading agreement itself can be accounted for in terms of Spec-Head agreement, with the subject moving through the successive specifier positions (cf. the discussion of Swahili in Carstens and Kinyalolo, *in press*). If this is correct, this subject movement would leave no empty specifier position for a full NP object to land in, and thus full NP shift would be excluded. Thus, the absence of full NP shift in EA results from the obligatory spreading of subject agreement. We will not address here the question of why agreement is triggered on both the T and Asp heads (or rather, why the subject must move through both [Spec, Asp] and [Spec, TP]), but instead refer the reader to the proposals presented in Carstens (1993).

Another issue remaining is the fact that unlike the Germanic languages discussed here, EA does not have any free-standing (i.e. stressed) pronominal objects (see the cleft example above), though free-standing subject pronouns do exist. It is of interest to note in this context that there are

languages with no free-standing pronouns at all occupying argument positions. An example of such a language is Straits Salish (Jelinek 1993). In Straits Salish there are only pronominal affixes (objects) and clitics (subjects). Object pronouns attach to an overt Transitivity marker (abbreviated Tran), which appears in an inflectional node above the predicate, and subject clitics appear in a second-position clitic string which includes T. The pronouns incorporate into the inflectional heads. Just as in Egyptian Arabic, this places these definite pronouns out of the reach of existential closure.

As we have seen in the discussion of Germanic, stressed, contrastive object pronouns (by virtue of their status as novel information) do not need to be moved out of the scope of existential closure. Since the Straits Salish pronominal affixes and clitics are all non-contrastive elements that must raise to inflectional heads, the grammar needs to provide a mechanism that can be used to place contrastive emphasis on a pronoun as novel information. Straits Salish grammar provides such a mechanism in the form of a set of lexical items that mark the semantic features of person and number. These items bear some similarity to the “anaphoric NPs” – such as *the former*, *the latter* – noted in Heim (1982).

- (76) a. Who signed this document, the plaintiff or his attorney?  
 b. It was the latter.

Compare the Straits Salish sentence:

- (77) nəkw-lə-0  
 YOU-Past-3Abs  
 It [was] YOU.

The Salish person predicates resemble anaphoric NPs in being deictic elements that can serve as the syntactic predicate of a sentence. Ordinary pronouns in Salish cannot serve as syntactic predicates. These “deictic predicates” are confined to two syntactic positions. They may serve as the lexical head of a main clause:

- (78) nəkw-yəxw-0    sə        nə-ten  
 YOU-Evid-3Abs    Det:Fem    my-mother  
 It must be YOU who are my mother.

(Salish has no copula, in any paradigm.) Or, when under the scope of a determiner/complementizer, one of these person predicates may serve as the lexical head of an adjoined subordinate clause:

- (79) leŋ-t-0-səŋ                      sə                      nəkw  
 see-Tran-3Abs-1sNom    Det:Fem    YOU  
 I saw the [one who is] YOU.

These deictic predicates cannot appear as subject or object pronouns in ordinary main clauses, whether phonologically attached or free-standing.

- (80) a. cey-sxw  
           work-2sNom  
           You worked.
- b. \*cey-nəkw  
           work-YOU
- c. nəkw cə cey  
           YOU Det work  
           YOU'RE the [one who] worked.
- (81) a. \*leŋ-t-oŋəŋ-nəkw  
           see-Tran-1pAcc-YOU  
           [YOU saw us]
- b. leŋ-t-oŋəŋ-sxw  
           see-Tran-1pAcc-2sNom  
           You saw us.

Thus, the Salish data provide further evidence for distinguishing stressed pronouns from their unstressed forms syntactically as well as semantically. For further discussion of Salish argument structure, see Jelinek (1993).

In conclusion, the Egyptian Arabic object pronoun facts are straightforwardly explained along the same lines as the Germanic pronominal object shift. The main difference is that EA does not have a stressed form of the object pronouns and must resort to a cleft construction for deictic or contrastive interpretations. The data from Salish shows that this absence of stressed pronominals is not unique to EA.

## 7. SUMMARY AND (SOME) CONSEQUENCES

We began by identifying some grammatical constraints on the interpretation of noun phrases: the Scoping Constraint, which requires that the relative scope of operators be set as early as possible; and Type Mismatch

Resolution. We then argued that these constraints accounted for the fact that Egyptian Arabic has no free-standing object pronouns. The attachment of object pronouns to the verb is triggered by their definiteness in conjunction with the scoping constraint – they must move in order to get out of the scope of existential closure. In the case of Egyptian Arabic, the pronominal objects are able to move out of the VP by attaching to the V and raising with it to an Aspect node above VP. This analysis was motivated by evidence from the inflectional system of EA, as well as the syntax of negation. We also showed that this phenomenon is not peculiar to Semitic. Pronominal object shift in English and Scandinavian follows a pattern similar to that seen in Egyptian Arabic; this shift co-occurs with verb movement. Here again we identified an association between the raising of object pronouns and the presence of a distinct Aspect inflectional node. Where tense and aspect are associated with distinct inflectional nodes, it is Aspect that is associated with transitivity and object marking. Though the Scandinavian languages differ in the conditions under which pronominal objects shift at S-structure, we proposed that these differences among the various cases of pronoun shift within Scandinavian may be explained in terms of varying “strength of features.”

Of course, many questions remain to be answered. The relationship between the sort of semantically driven movement described here and the morphologically driven movement advocated by Chomsky (1992) needs to be explicated. Also, we have confined our attention here to NPs in complement positions of verbs. The properties of complements of other categories such as prepositions and nouns also need to be investigated. It is our hope that the approach outlined here will serve as a useful starting point for investigating these and other matters.

#### REFERENCES

- Abd El-Moneim, Aliaa Al-Azhar: 1989, *The Role of Infl*, Ph.D. dissertation, University of Connecticut.
- Abdel-Massih, Ernest T.: 1975, *An Introduction to Egyptian Arabic*, Center for Near Eastern and North African Studies, University of Michigan, Ann Arbor.
- Åfarli, Tor: 1985, ‘Norwegian Verb-Particle Constructions as Causative Constructions’, *Nordic Journal of Linguistics* 8, 75–98.
- Aoun, Youssef: 1982, *The Formal Nature of Anaphoric Relations*, unpublished Ph.D. dissertation, MIT.
- Bahloul, Maher and Wayne Harbert: 1992, ‘Agreement Asymmetries in Arabic’, in *Proceedings of WCCFL 11*, Stanford Linguistics Association, Stanford Cal., pp. 15–31.
- Baker, Mark: 1985, ‘The Mirror Principle and Morphosyntactic Explanation’, *Linguistic Inquiry* 16, 373–416.
- Baker, Mark: 1988, *Incorporation*, University of Chicago Press, Chicago.

- Barnes, Michael P.: 1992, 'Faroese Syntax – Achievements, Goals, and Problems', *Scripta Islandica* 43, 28–43.
- Bayer, Josef: 1984, 'COMP in Bavarian Syntax', *The Linguistic Review* 3, 209–274.
- Benmamoun, Elabbas: 1991, 'Negation and Verb Movement', in Tim Sherer (ed.), *Proceedings of NELS 21*, GLSA, University of Massachusetts, Amherst, pp. 17–31.
- Besten, Hans den: 1983, 'On the Interaction of Root Transformations and Lexical Deletive Rules', in W. Abraham (ed.), *On the Formal Syntax of West Germania*, John Benjamins, Amsterdam, pp. 47–131.
- Bolinger, Dwight: 1971, *The Phrasal Verb in English*, Harvard University Press, Cambridge, Mass.
- Borer, Hagit: 1984, *Parametric Syntax: Case Studies in Semitic and Romance Languages*, Foris, Dordrecht.
- Büring, Daniel: 1993, 'Word Order in the German Middle Field and the Position of NegP', manuscript, University of Cologne.
- Carstens, Vicki: 1993, 'Deriving the Content and Distribution of Agreement Morphology', talk given at the 1993 GLOW Colloquium, Lund.
- Carstens, Vicki and Kasangati Kinyalolo: in press, 'On IP Structure: Tense, Aspect and Agreement', to appear in *Natural Language and Linguistic Theory*.
- Chomsky, Noam: 1981, *Lectures on Government and Binding*, Foris, Dordrecht.
- Chomsky, Noam: 1986, *Barriers*, MIT press, Cambridge, Mass.
- Chomsky, Noam: 1991, 'Some Notes on the Economy of Derivation and Representation', in R. Freidin (ed.), *Principles and Parameters in Comparative Grammar*, MIT Press, Cambridge, Mass. pp. 417–454.
- Chomsky, Noam: 1992, 'A Minimalist Program for Linguistic Theory', in *MIT Occasional Papers in Linguistics 1*, Department of Linguistics and Philosophy, MIT.
- Collins, Chris and Höskuldur Thráinsson: 1994, 'On the Double Object Construction in Icelandic', in C. Phillips (ed.), *Papers on Case and Agreement 2* (MIT Working Papers in Linguistics 19), Department of Linguistics and Philosophy, MIT, pp. 131–174.
- Demirdache, Hamida: 1989, 'Nominative NPs in Modern Standard Arabic', manuscript, MIT.
- Déprez, Viviane: 1991, 'Parameters of Object Movement', manuscript, Rutgers University.
- Diesing, Molly: 1990a, 'Verb Movement and the Subject Position in Yiddish', *Natural Language and Linguistic Theory* 8(1), 41–79.
- Diesing, Molly: 1990b, *The Syntactic Roots of Semantic Partition*, Ph.D. dissertation, University of Massachusetts, Amherst.
- Diesing, Molly: 1992a, 'Bare Plural Subjects and the Derivation of Logical Representations', *Linguistic Inquiry* 23(3), 353–380.
- Diesing, Molly: 1992b, *Indefinites*, MIT Press, Cambridge, Mass.
- Diesing, Molly: 1994, 'Semantic Variables and Object Shift', paper presented at the Ninth Comparative Germanic Syntax Workshop, Harvard University.
- Dobrovie-Sorin, Carmen: 1990, 'Clitic-Doubling, Wh-Movement, and Quantification in Romanian', *Linguistic Inquiry* 21(3), 351–397.
- Emonds, Joseph: 1978, 'The Verbal Complex V'-V in French', *Linguistic Inquiry* 9, 151–175.
- Enç, Mürvet: 1991, 'The Semantics of Specificity', *Linguistic Inquiry* 22(1), 1–25.
- Fraser, Bruce: 1976, *The Verb-Particle Combination in English*, Academic Press, New York.
- Gamal-Eldin, Saad: 1967, *A Syntactic Study of Egyptian Colloquial Arabic*, Mouton, The Hague.
- Gary, Judith Olmsted and Saad Gamal-Eldin: 1981, *Cairene Egyptian Colloquial Arabic*, Croom Helm, Dover, New Hampshire.
- Guéron, Jacqueline: 1981, 'Logical Operators, Complete Constituents, and Extraction Transformations', in R. May and J. Koster (eds.), *Levels of Syntactic Representation*, Foris, Dordrecht, pp. 65–142.
- Haegeman, Liliane: 1992, *Theory and Description in Generative Syntax: A Case Study in West Flemish*, Cambridge University Press, New York.



- Heim, Irene: 1982, *The Semantics of Definite and Indefinite Noun Phrases*, Ph.D. dissertation, University of Massachusetts, Amherst.
- Heim, Irene and Angelika Kratzer: 1990, 'Formal Semantics', class notes, MIT and University of Massachusetts, Amherst.
- Holmberg, Anders: 1986, *Word Order and Syntactic Features*, Stockholm.
- Iatridou, Sabine: 1990, 'About AgrP', *Linguistic Inquiry* 21(4), 551–577.
- Jaeggli, Osvaldo: 1982, *Topics in Romance Syntax*, Foris, Dordrecht.
- Jelinek, Eloise: 1981, *On Defining Categories: AUX and Predicate in Colloquial Egyptian Arabic*, Ph.D. dissertation, University of Arizona.
- Jelinek, Eloise: 1983, 'Person-Subject Marking in AUX in Egyptian Arabic', in F. Heny and B. Richards (eds.), *Linguistic Categories: Auxiliaries and Related Puzzles*, Kluwer, Dordrecht, pp. 21–46.
- Jelinek, Eloise: 1993, 'Ergative "Splits" and Argument Type', in J.D. Bobaljik and C. Phillips (eds.), *Papers on Case and Agreement 1* (MIT Working Papers in Linguistics 18), Department of Linguistics and Philosophy, MIT, pp. 15–42.
- Johnson, Kyle: 1991, 'Object Positions', *Natural Language and Linguistic Theory* 9(4), 577–636.
- Jonas, Dianne and Jonathan D. Bobaljik: 1993, 'Specs for Subjects: The Role of TP in Icelandic', in J.D. Bobaljik and C. Phillips (eds.), *Papers on Case and Agreement 1* (MIT Working papers in Linguistics 18), Department of Linguistics and Philosophy, MIT, pp. 59–98.
- Josefsson, Gunlög: 1992, 'Object Shift and Weak Pronominals in Swedish', *Working Papers in Scandinavian Syntax* 49, University of Lund, pp. 59–94.
- Josefsson, Gunlög: 1993, 'Scandinavian Pronouns and Object Shift', *Working Papers in Scandinavian Syntax* 52, University of Lund, pp. 1–28.
- Kamp, Hans: 1981, 'A Theory of Truth and Semantic Representation', in J. Groenendijk, T. Janssen, and M. Stokhof (eds.), *Formal Methods in the Study of Language*, Mathematical Centre Tract 135, Amsterdam, pp. 277–322.
- Kayne, Richard: 1975, *French Syntax*, MIT Press, Cambridge, Mass.
- Kayne, Richard: 1984, 'Principles of Particle Constructions', in J. Guéron et al. (eds.), *Grammatical Representation*, Foris, Dordrecht, pp. 101–140.
- Kayne, Richard: 1987, 'Facets of Romance Past Participle Agreement', manuscript, MIT.
- Kayne, Richard: 1991, 'Romance Clitics, Verb Movement, and PRO', *Linguistic Inquiry* 22, 647–686.
- Klein, Ewan: 1980, 'Defensible Descriptions', in F. Heny (ed.), *Ambiguities in Intensional Contexts*, Reidel, Dordrecht, pp. 83–102.
- Koopman, Hilda: 1991, 'The Verb-Particle Construction and the Syntax of PPs', manuscript, University of California at Los Angeles.
- Koopman, Hilda and Dominique Sportiche: 1988, 'Subjects', manuscript, University of California at Los Angeles.
- Kratzer, Angelika: 1984, 'On Deriving Syntactic Differences Between German and English', manuscript, Technische Universität Berlin.
- Kratzer, Angelika: 1989, 'Stage-Level and Individual-Level Predicates', in *Papers on Quantification*, NSF Grant Report, Department of Linguistics, University of Massachusetts, Amherst.
- Kratzer, Angelika: 1994, 'On External Arguments', in E. Benedicto and J. Runner (eds.), *Functional Projections*, University of Massachusetts Occasional Papers 17, GLSA, University of Massachusetts, Amherst, pp. 103–129.
- Kuroda, S.-Y.: 1988, 'Whether We Agree or Not: Rough Ideas about the Comparative Syntax of English and Japanese', *Linguisticae Investigationes* 21, 1–46.
- Laka, Itziar: 1990, *Negation in Syntax: On the Nature of Functional Categories and Projections*, Ph.D. dissertation, MIT.
- Larson, Richard: 1988, 'On the Double Object Construction', *Linguistic Inquiry* 19, 335–391.

- Larson, Richard and Marta Lujan: 1990, 'Focused Pronouns', manuscript, University of New York at Stony Brook.
- Lenerz, Jürgen: 1977, *Zur Abfolge nominaler Satzglieder im Deutschen*, G. Narr, Tübingen.
- Mahajan, Anoop: 1991, 'Clitic Doubling, Object Agreement, and Specificity', in T. Sherer (ed.), *Proceedings of NELS 21*, GLSA, University of Massachusetts, Amherst, pp. 263–277.
- May, Robert: 1977, *The Grammar of Quantification*, Ph.D. dissertation, MIT.
- May, Robert: 1985, *Logical Form*, MIT Press, Cambridge, Mass.
- McCarthy, John: 1979, *Formal Problems in Semitic Phonology and Morphology*, Ph.D. dissertation, MIT.
- Milsark, Gary: 1974, *Existential Sentences in English*, Ph.D. dissertation, MIT.
- Montalbetti, Mario: 1984, *After Binding*, Ph.D. dissertation, MIT.
- Murasugi, Kumiko: 1992, *Crossing and Nested Paths: NP Movement in Accusative and Ergative Languages*, Ph.D. dissertation, MIT.
- Muysken, Pieter: 1983, 'Parameterizing the Notion Head', *The Journal of Linguistic Research* 2, 57–76.
- Neale, Stephen: 1990, *Descriptions*, MIT Press, Cambridge, Mass.
- Partee, Barbara H.: 1987, 'Noun Phrase Interpretation and Type-Shifting Principles', in J. Groenendijk, D. de Jongh, and M. Stokhof (eds.), *Studies in Discourse Representation Theory and the Theory of Generalized Quantifiers*, Foris, Dordrecht, pp. 115–143.
- Pesetsky, David: 1989, 'Language-Particular Processes and the Earliness Principle', manuscript, MIT.
- Platzack, Christer and Anders Holmberg: 1989, 'The Role of AGR and Finiteness', *Working Papers in Scandinavian Syntax* 43, University of Lund, pp. 51–76.
- Pollock, Jean-Yves: 1989, 'Verb Movement, UG, and the Structure of IP', *Linguistic Inquiry* 20, 365–424.
- Ramchand, Gillian Catriona: 1992, 'Aspect Phrase in Modern Scottish Gaelic', manuscript, Stanford University.
- Rapoport, Tova: 1987, *Copular, Nominal and Small Clauses: A Study of Israeli Hebrew*, Ph.D. dissertation, MIT.
- Reinhart, Tanya: 1987, 'Specifier and Operator Binding', in E. Reuland and A. ter Meulen (eds.), *The Representation of (In)definiteness*, MIT Press, Cambridge, Mass., pp. 130–167.
- Reinhart, Tanya and Eric Reuland: 1993, 'Reflexivity', *Linguistic Inquiry* 24(4), 657–720.
- Rivas, Alberto: 1977, *A Theory of Clitics*, Ph.D. dissertation, MIT.
- Roberts, Ian: 1991, 'Excorporation and Minimality', *Linguistic Inquiry* 22, 209–218.
- Rouveret, Alain: 1991, 'Functional Categories and Agreement', *The Linguistic Review* 8, 353–387.
- Steriade, Donca: 1980, 'Clitic Doubling in Romanian WH Constructions and the Analysis of Topicalization', in *Papers from the 16th Annual Meeting, Chicago Linguistic Society*.
- Strozer, J.: 1976, *Clitics in Spanish*, Ph.D. dissertation, University of California at Los Angeles.
- Suñer, Margarita: 1988, 'The Role of Agreement in Clitic-Doubled Constructions', *Natural Language and Linguistic Theory* 6, 391–434.
- Taraldsen, K.T.: 1983, *Parametric Variation in Phrase Structure*, Ph.D. dissertation, University of Tromsø.
- Travis, Lisa de Mena: 1984, *Parameters and the Effects of Word Order Variation*, Ph.D. dissertation, MIT.
- Travis, Lisa de Mena: 1991, 'Inner Aspect and the Structure of VP', manuscript, McGill University.
- Uriagereka, Juan: 1988, *On Government*, Ph.D. dissertation, University of Connecticut.
- Uriagereka, Juan: 1992, 'Aspects of Clitic Placement in Western Romance', manuscript, University of Maryland, College Park.
- Vikner, Sten: 1990, *Verb Movement and the Licensing of NP Positions in the Germanic Languages*, Ph.D. dissertation, Université de Genève.

- Wahba, Wafaa Abdel-Faheem Batran: 1984, *Wh-Constructions in Egyptian Arabic*, Ph.D. dissertation, University of Illinois at Urbana-Champaign.
- Wise, Hilary: 1975, *A Transformational Grammar of Spoken Egyptian Arabic*, Blackwell, London.
- Zimmerman, Thomas Ede: 1992, 'On the Proper Treatment of Opacity in Certain Verbs', *Natural Language Semantics* 1(2), 149–179.

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II. 4 **Eloise Jelinek** and Andrew Carnie (2003) Argument Hierarchies and the Mapping Principle. in Carnie, Harley and Willie, *Formal Approaches to Function in Grammar*. John Benjamins. 265-296

This paper extends the empirical range of the hypothesis explored in Jelinek (1993) and Deising & Jelinek (1995), proposing that all argument hierarchies are the direct morphosyntactic registration of the presuppositionality scale. In particular the paper provides evidence from ergativity splits, object shift, differential object marking, dative accusative marking, clitic placement and voice alternations, all of which are claimed to follow from the restrictions on arguments that can appear within the VP (only non-presuppositional potential variables). Elements that appear high on relational hierarchies (animacy, specificity, definiteness, topicality, presuppositionality) are mapped high in the clausal tree, and those that are low appear within the VP. This paper provides the most detailed exemplification of the idea that relational hierarchies are epiphenomena derivable from syntactic ones.

# Argument hierarchies and the mapping principle\*

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## 1. Introduction

As is well known, in many languages — such as Lummi and Dyirbal — we find a split in case marking, where third person and other non-local arguments take an Ergative/Absolutive marking, and local persons (1st and 2nd persons) take a Nominative/Accusative pattern. Argument hierarchies are used by linguists to describe situations like these where syntactic phenomena interact with arguments of various types (along various dimensions) in distinct manners.

The topic of argument hierarchies has, until recently, been mainly confined to the domain of typology and language description. In a series of influential articles in the Functional Optimality Theory framework (FOT), Judith Aissen, Joan Bresnan and their colleagues have attempted a formal account of argument hierarchies.<sup>1</sup> These accounts fully “syntacticize” the phenomenon, in that these phenomena are treated as purely morphosyntactic notions (as encoded in the variable output constraint rankings). In this paper, we would like to claim that such an approach lacks an explanatory basis. We would like to claim instead that, following the work of Jelinek (1993), Meinunger (1999), and to a certain extent Isaak (2000), the effects of argument hierarchies emerge from a formally encoded correspondence between syntactic prominence and semantic/pragmatic prominence. Syntactic effects of semantic argument hierarchies are a direct result of the mapping between syntactic and semantic structure, and are not purely syntactic phenomena as FOT accounts would lead us to believe. We encode this in what Carnie (in prep) calls Jelinek’s Hypothesis:

- (1) Argument hierarchies are the direct morphosyntactic registration of some aspects of the presuppositionality scale.

In proposing such an analysis, we provide a semantic grounding to a wide variety of syntactic phenomena, including ergative splits, object shift, differential object marking, dative/accusative alternations, clitic placement, voice alternations — all of

which seem to be sensitive to presuppositionality. For reasons of space we don't attempt a direct refutation of FOT accounts here. Instead we offer only positive evidence in favor of a mapping approach to argument hierarchies. To see the discussions of the merits and flaws of FOT, see the debate between Newmeyer and Bresnan and Aissen in the pages of *Natural Language and Linguistic Theory* (2002), the paper by Tom Bever in this volume and Carnie (in prep).

### 1.1 The mapping principle

Argument hierarchies come in a number of different types cross-linguistically. We find hierarchies based on definiteness/animatecy/person, etc. Despite their surface diversity, argument hierarchies are all alike in the following two attributes:

- a. There is some ranking of arguments according to a scale of *presuppositionality*. More local, more specific, more definite, and more animate arguments are more likely to be presupposed by the speakers in discourse. Such elements outrank non-local, non-specific, less animate etc., elements. On the hierarchy, these elements are more likely to be asserted than presupposed.<sup>2</sup>
- b. There is some *syntactic* manifestation of the hierarchy: such as case and/or voice alternations which place an argument in subject or object position, to order arguments in accord with presuppositionality.

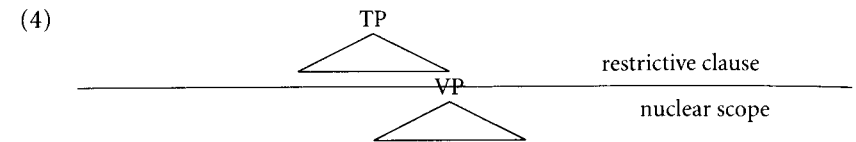
There is crosslinguistic variation in what particular features on the presuppositionality scale a language elects to grammaticize, just as some languages choose to grammaticize gender and others don't. The crucial notion here, however, is that no matter which of the features determining presuppositionality a particular language uses, there is a predictable correspondence between the information structure status and the syntactic realization of the arguments.

Diesing (1992) developed a deceptively simple proposal, where there is a direct mapping (encoded in a semantic mapping principle) between syntactic constituent structure (at some level of representation) and semantic structures.<sup>3</sup> We take the mapping principle to be the primary means by which a grammar encodes a presuppositionality scale. The view advocated by Diesing assumes the Kamp (1981)/Heim (1982) approach to the interpretation of nominals (see also Krifka 1991; Lambrecht 1994). The sentence (or proposition) is divided up into three parts: (a) a quantifier which asserts the number of entities participating in the action or state; (b) a restrictor, which asserts the presupposed information about the participants; this roughly correlates with the TP or IP portion of the clause; and (c) a nuclear scope, corresponding to the VP, which asserts what is true of the entities and provides the new information to the clause. A very simplistic example is given in (2):

- (2) (Quantifier<sub>x,y</sub>) [Restrictor (x,y)] [Nuclear Scope (x,y)]  
 Every person loves cookies

These tripartite structures are derived directly from the syntax via the mapping principle (3) as schematized in (4).

- (3) *The Mapping Principle* (Diesing 1992)  
 a. By LF, the material from IP [TP] and above maps into the restriction on some operator.  
 b. The material from VP maps into the nuclear scope.



On a more formal level, only variables are allowed in the nuclear scope. Oversimplifying Diesing's system greatly, variables can be of two sorts: (i) the traces of NPs that have moved out of the VP; (ii) a non-quantificational, non-presuppositional NP, which is bound by Existential Closure (i.e., will be as a default taken to mean "there is an X".) In terms of the syntax, what this means is that (at LF) quantificational (presuppositional) NPs (such as specifics or definites) cannot be inside the VP (they have to move to create a variable), only non-presuppositional ones (like non-specific indefinites) can appear there. To see how this works, let us consider the well known facts from object scrambling in German (data from Diesing and Jelinek 1995: 128, 130).

- (5) a. ... weil ich nicht eine einzige Katze gestreichelt habe  
 since I not a single cat petted have  
 "Since I have not petted a single cat"  
 b. ... weil ich eine einzige Katze nicht gestreichelt habe  
 since I a single cat not petted have  
 "Since I have not petted a single cat"  
 c. \*? ... weil ich nicht die Katze streichle  
 since I not the cat pet  
 "Since I do not pet the cat"  
 d. ... weil ich die Katze nicht streichle  
 since I the cat not pet  
 "... Since I do not pet the cat"

Let us assume that negation marks the left edge of VP, and VP is the domain of existential closure here. Definite objects and indefinites with a specific reading appear to the left of negation; non-specific indefinites appear to the right. This gives us the outward appearance of a specificity hierarchy:

- (6) Elements to the left of X on the following hierarchy must appear to the left of negation:  
 Definite < strongly quantified < specific indefinite < X < non-specific

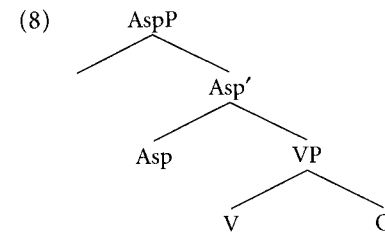
The VP can only contain unbound variables, so other NPs must scramble<sup>4</sup> out of the nuclear scope (VP) to a higher position in the tree. The net result of this is that elements high on the relational hierarchy correspond to elements that are relatively high in the syntactic tree.

We use the terms *topic* and *focus* informally<sup>5</sup> as means of describing presuppositionality. We follow the writings of Partee, Heim, Diesing et al. in identifying topic/focus structure as the information structure of the sentence. Old (presuppositional) information in the sentence is topical, familiar and backgrounded. New information in the sentence is unfamiliar and focused. Across languages, most of the time, there is a strong tie between subjects and topics, vs. objects and focus. But alas, this is not always the case; we see topicalized objects and focused subjects — marked by intonation and movement in English, and with Topic and Focus particles, movement, and affixes in other languages, forcing us to include Topic and Focus in our accounts of morphosyntax. In addition, we see thetic sentences with surface pleonastic or indefinite subjects; at LF these are existential sentences with all contentful (non-pleonastic) arguments in the nuclear scope.

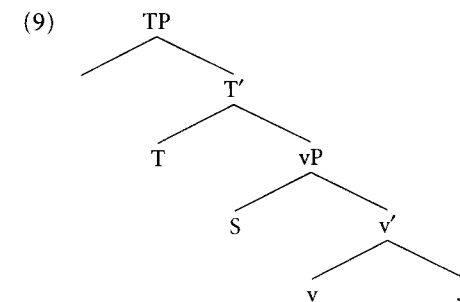
The particular version of the mapping principle we adopt is that proposed in Carnie (in prep). This version follows Percus (1993) in relativizing the mapping principle to the particular argument involved. More specifically, the domain of existential closure (nuclear scope) for argument Y is the VP or vP that introduces Y. This is constructed within a version of phasing theory. The particular view of phases that we will advocate here is different than that proposed by Chomsky (2001a). Chomsky proposes that phases are, in essence, propositional; they consist of a predicate and its arguments (vP), or a temporal and force operator (TP or CP). Carnie offers an alternate view of phase. In his approach, phases minimally consist of all of the following:

- (7) a. a predicative element (v or V)  
 b. a single argument (NP)  
 c. a temporal operator that locates the predicate and argument in time and space (Asp or T)

For a simple transitive clause, then, the first phase of a sentence consists of a lexical predicate which expresses an event or state (V), any internal arguments, and the Asp head.



The link between aspect, aktionsarten and objects is well known (see among many others Tenny 1994), and is expressed in this phase. The second phase in a transitive clause contains the external argument introducing light predicate (v), the subject NP, and Tense:



As should be obvious from combining the two trees in (8) and (9), this particular view requires the split VP or inner aspect approach of Travis (1994) and Koizumi (1995) (see also Harley 1995 and Carnie 1995).

When it comes to the goal arguments of ditransitives a third phase exists, corresponding to the lowest vP which introduces the goal/source argument (Larson 1988). The nature of the spatio-temporal operator in that phase is more mysterious, but may consist of a special end-point (telicity) or aktionsart operator. While remaining truly agnostic about the nature of such an operator, we use EndP as a heuristic label in this paper, without truly attributing any real significance to the name.

Carnie (in prep) shows that the importance of the phasing approach is seen in the way in which the semantic interpretations of the phases do *not* interact in terms of the mapping principle. Take for example the following English sentence:

- (10) There was some linguist helping the boy (when I walked into the room).

We follow Chomsky (2001b) in assuming that there is no covert movement. The object NP is a definite, as such it is mapped into the restrictor. But notice that the structurally higher subject is clearly non-specific, nonpresuppositional and focal, thus mapped onto the nuclear scope. Crucially, at least on the surface, the nuclear scope of the VP seems to contain the definite, which should be mapped onto the

restrictor. More formally, the VP should not be allowed to contain a non-variable, such as the strongly quantified object. The phasing approach eliminates this problem (as well as providing a new solution for phenomena previously analyzed as involving LF movement). The first phase consists of the aspect marking, the lexical verb and the definite object.

- (11) [<sub>AspP</sub> Prog [<sub>VP</sub> help [the boy]]]

The object (overtly: Johnson 1991) shifts out of the VP, creating a variable (trace). We leave aside here the problem of the order of the object and participle, noting that it can be constructed through a variety of head movements ( $V \rightarrow \text{Asp} \rightarrow \text{vP}$ ).

- (12) [<sub>AspP</sub> [the boy]<sub>i</sub> Prog [<sub>VP</sub> help t<sub>i</sub>]]

This maps to a partial (phase-specific) LF, where the object is construed outside the domain of existential closure, and is thus mapped to the restrictor. This partial LF, like the rest of the phase, is unavailable to the derivation at the next level. The structure of this LF is partial only in the sense that it doesn't represent the LF for the whole sentence, it is a complete well formed LF (consisting of a quantifier and its nuclear scope and restrictor) for that phase. Let us call the structure in (12) = Z. The next phase contains Z, but may not refer to nor interpret its contents:

- (13) [<sub>TP</sub> There T [<sub>VP</sub> some linguist [<sub>v</sub> v [Z]]]]

Here *some linguist* is interpreted existentially, internal to the nuclear scope. The fact that the boy is also contained in this constituent is irrelevant, since it is in a phase that has already received an interpretation. The interpretation of nominals in lower phases need not interfere with the mapping of nominals at higher levels.

Nonetheless, there are clear situations where the phases interact. For example, we will see that shifted goals with ditransitive verbs appear shifted in the higher phase as well (they appear to the left of both shifted and unshifted objects). We attribute this to Case. Similarly, cases of split ergativity clearly require situations where objects move into higher phases to get absolutive/nominative case (see Carnie in prep. for more discussion). Voice alternations also seem to be driven by the interaction of the interpretative requirements on various arguments, as will be discussed below.

## 2. Differential object marking: Object shift and clitic movement

We start our exemplification of the mapping approach to hierarchies with a brief discussion of the best known effects: object shift (also called differential object placement or DOP), differential object marking (DOM), and clitic raising. These topics are widely treated in the literature and we present them here both for

completeness and because they present the simplest examples of the mapping approach to hierarchies.

### 2.1 Object shift/scrambling<sup>6</sup>

We have already seen one example of object shift in this paper, that of the positioning of specific DPs in German, seen in example (5) above. We will not belabor the point here, only pointing out that objects under the analysis we have given here shift from inside the VP on their phase to the specifier of AspP to get out of the nuclear scope defined by VP. Similar accounts can be given to the phenomena of object shift in the Scandinavian languages (see Thráinsson 2000 for a survey, and Diesing and Jelinek 1995 for extensive discussion), VOS/VSO alternations in Austronesian (Rackowski and Travis 2000), and Mayan (Carnie in prep), and verb/object ordering in Scots Gaelic (Adger 1997), and particle shift in English (Diesing and Jelinek 1995) to name only a few.

### 2.2 Differential object marking

The phenomenon of differential object marking occurs when a distinct case form is used for two different types of objects based on some argument hierarchy, as seen in the Turkish example below (data from Enç 1991):

- (14) a. Ali bir kitab-ı aldı  
 Ali one book-ACC bought  
 "A book is such that Ali bought it."  
 b. Ali bir kitap aldı  
 Ali one book bought  
 "Ali bought some book or another."

Overt accusative marking correlates to specificity/presuppositionality. This is further supported by the fact that strongly quantified (and thus presumably strongly presuppositional) NPs must be marked with accusative case (data taken from Diesing 1992):

- (15) a. Ali her kitab-ı okudu  
 Ali every book-ACC read  
 "Ali read every book"  
 b. \*Ali her kitap okudu

Diesing's analysis of these facts is easily translated into the variation of her system presented here:



- (16) ... [<sub>AspP</sub> Acc [<sub>VP</sub> Ø V]]  
 ↑            ↓  
           [∃]

Overt accusative case marks situations where the object has shifted out of the VP. A similar account can be given for Persian *-râ* marking and Nez Perce accusative/objective alternations (Cash Cash and Carnie 2002). Although it may be coincidental, all of the cases we have mentioned show an ambiguity between the shifted and unshifted positions (because the verb is final, or the arguments can further scramble), so Case marking is used to indicate the positional shift caused by the mapping.

DOM is the focus of much of the research in the Functional Optimality Theory framework. In that literature, emphasis is placed on the morphology/syntax interface. Morphologically marked cases correspond to marked argument positioning. We take issue with the idea that this is essentially a morphological phenomenon, given that it is clearly related to phenomena that are expressed purely syntactically, such as object shift and scrambling, to name a few. The mapping principle approach can account for a wider variety of cases, as seen below.

### 2.3 Clitic raising

Diesing and Jelinek (1995) claim that relative scope in Egyptian Arabic (EA) is fixed overtly at s-structure. Evidence for this comes from the fact that existential indefinites are excluded from the specifier of IP, as are non-presupposed readings of indefinites. With this in mind, consider the case of clitic object pronouns in EA. Jelinek and Diesing show that these elements are real arguments and are not merely agreement morphology. However, these clitic pronouns are tightly bound to the inflected verb. Indeed they even appear internal to the sentential negation morphology *ma...š*. Full DP objects, by contrast, cannot (17b,d) (data from Diesing and Jelinek 1995: 144).

- (17) a. ma-biyibiiš-hum-š  
 NEG-selling-THEM-NEG  
 "he isn't selling them"  
 b. \*ma-biyibiiš-š humma  
 NEG-selling-NEG they  
 c. ma-biyibiiš-š burtu'aan.  
 NEG-selling-NEG oranges  
 "he is not selling oranges"  
 d. \*ma-biyibiiš burtu'aan-š  
 NEG-selling oranges-NEG

Diesing and Jelinek's analysis of the distinction between full NPs and object clitic pronouns is that pronouns are inherently presupposed (they require a referent to be

fixed before they are used), as such they are incompatible with existential force, and must be moved out of the VP. One mechanism for doing this is by cliticizing to the tensed verb — which itself is external to the VP (due to head movement). The pronoun thus raises out of the nuclear scope.

### 3. Dative/Accusative alternations<sup>7</sup>

We now turn to the slightly more complicated situations that arise with alternations in the deepest phase of the structure. We consider Dative/Accusative alternations in a variety of languages, including but not limited to the phenomenon known as dative shift/movement. After examining a range of data we return to a formal account in terms of the mapping principle, where we implement the intuition of Basilico (1998) of a topic/focus alternation in ditransitive alternations in terms of our phasal mapping.

#### 3.1 Yaqui

Yaqui (also known as Hiaki and Yoeme), is an Uto-Aztecan language spoken in Sonora, Mexico and Arizona. Yaqui has SOV word order, and NPs have overt structural case. However, dative movement is never "optional", that is, discourse controlled. In Yaqui, the constraints on the distribution of the dative are lexical; it is the *verb* that determines the distribution of the dative. In English, there are also lexical constraints on the verb with respect to dative alternations. These constraints appear to be related to the manner of the action, and crucially to the affectedness of the goal.

- (14) a. They donated the books to the library/committee.  
 b. \*They donated the library/committee the books.  
 c. He confided his hopes to his friend.  
 d. \*He confided his friend his hopes.  
 e. They communicated their concerns to the president.  
 f. \*They communicated the president their concerns.

Most Yaqui ditransitive verbs select an ACC/DAT array, but there is a small closed class of verbs that permit two ACC marked objects. Compare the following two examples:

- (15) 'aapo Huan-tau 'uka vachi-ta maka-k ACC/DAT  
 he John-DAT DET.ACC CORN-ACC give-PERF  
 "He gave John the corn."  
 (16) 'aapo Huan-ta 'uka vachi-ta miika-k ACC/ACC  
 he John-ACC DET.ACC CORN-ACC give.food-PERF  
 "He gave John the corn (as a gift)."

There is a clear difference in the meaning of the verbs shown in (15) and (16). The verb in (16), *miika*, is employed when food is given “with good heart”, to “feed” someone in a culturally recognized situation. Those Yaqui verbs that require the ACC/ACC argument array have animate goals, that are *strongly affected* by the action of the agent. Other verbs that select an ACC/ACC argument array include:

- (17) 'aapo 'enchi 'uka 'etehui-ta mahta-k ACC/ACC  
 he you.ACC DET.ACC story-ACC teach-PERF  
 “He taught you the story.”
- (18) 'aapo 'enchi 'uka kava'i-ta rewwa-k ACC/ACC  
 he you.ACC DET.ACC horse-ACC borrow-PERF  
 “He borrowed the horse from you.”
- (19) 'aapo 'enchi 'uka tomi-ta 'u'aa-k ACC/ACC  
 he you.ACC DET.ACC money-ACC take away-PERF  
 “He took the money away from you.”

Verbs that select an ACC/DAT pattern include:<sup>8</sup>

- (20) 'aapo 'eu 'uka toto'i-ta mana-k ACC/DAT  
 he you.DAT DET.ACC chicken-ACC serve-PERF  
 “He served the chicken to you.” (as of a waiter)
- (21) 'aapo 'uka laapis-ta neu b<sup>w</sup>ise-k ACC/DAT  
 he DET.ACC pencil-ACC me.DAT hand-PERF  
 “He handed the pencil to me.”
- (22) 'uka miisi-ta=ne Maria-ta-u toha-k ACC/DAT  
 DET.ACC cat-ACC=I Mary-DAT bring-PERF  
 “I brought the cat to Mary.”

Additional evidence for the affectedness of the ACC goals in Yaqui is provided by the fact that with the double accusative verbs, both arguments are obligatory; neither can be dropped. However, with ACC/DAT verbs, the more peripheral or unaffected dative argument can typically be omitted.

- (23) a. Huan Peo-ta 'uka vachi-ta miika-k ACC/ACC  
 John Pete-ACC DET.ACC corn-ACC give-PERF  
 “John gave Pete the corn.”  
 b. \*Huan 'uka vachi-ta miika-k  
 c. \*Huan Peo-ta miika-k
- (24) a. Huan Peo-ta-u 'uka vachi-ta nenka-k ACC/DAT  
 “John sold the corn to Pete.”  
 b. Huan 'uka vachi-ta nenka-k  
 “John sold the corn.”  
 c. \*Huan Peo-ta-u nenka-k

In Yaqui then, we see a difference in the marking of goal (and other second object) arguments in terms of their affectedness. More affected, and thus more presupposed arguments are given ACC case, less affected more asserted arguments are given DAT case.

### 3.2 Dative movement in English

We use the term “dative movement” informally to refer to sentence pairs of the following kind:

- (25) a. I gave a book to Mary.  
 b. I gave Mary a book.

In the days of transformational grammar, it was more or less assumed that this kind of alternation between sentences with the same truth value was a matter of free choice on the part of the speaker. But dative movement is not a matter of free variation. Notice that these sentences occur in very different discourse contexts. This is an expression of Information Structure; the subject is backgrounded or topical, unstressed, and the VP is the focus, the new information in the sentence.

The question/answer context is very revealing about Information Structure across languages.

- (26) Q: WHO did you give a +book to?  
 A: I gave a book to +Mary.

- (27) Q: WHAT did you give +Mary?  
 A: I gave Mary a +book.

(Capital letters mark contrastive focus on the *wh*-word. The + sign in marks the normal or default intonation contour of the English sentence, where the stress peak occurs on the VP or last DP in the sentence.) If we reverse the question contexts here, as in:

- (28) Q: WHO did you give a +book to?  
 A:##I gave Mary a +book.

- (29) Q: WHAT did you give +Mary?  
 A:##I gave a book to +Mary.

The result is very odd, to say the least. The dative alternation sentences have the same truth values — the same thing happened in the world — but one or the other construction is appropriate in context. The speaker is not aware of selecting between sentences with or without dative movement; she simply produces the sentence that fits best in the discourse in order to maintain topicality.

In English, we mark Information Structure via stress and intonation, so we tend to think of it as “post-syntactic”. We can even “override” the effects of dative movement by placing contrastive stress on an argument:

- (30) a. I gave a BOOK to Mary.  
b. I gave MARY a book.

But in many languages, Information Structure is marked in the morphosyntax, and has to be taken into account in the analysis of the syntax proper. Important work by David Basilico (1998) points to the analogy between (i) ordering the subject and object in terms of topicality, and (ii) ordering the two objects in a dative construction in terms of topicality. Basilico claims that in a dative construction, the first object is higher in topicality than the second object. In other words, there is a topic/focus structure within the vP itself. This is entirely consistent with the approach we posit here, except we attribute topic/focus interpretation with tree mapping rather than particular functional categories. With dative movement, the goal argument is “advanced” to a position above the theme at a “light verb” projection (see Section 3.5 below for discussion).

Across languages, an important generalization concerning dative movement may be made: Only animate goals are advanced to topic positions. A restriction of this kind was noted by Bresnan (1982) and Oehrle (1976). Compare:

- (31) a. The lawyer sent a letter to +Ellen.  
b. The lawyer sent Ellen a +letter.  
c. The lawyer sent a letter to +Dallas.  
d. \*The lawyer sent Dallas a +letter.

When the goal is an inanimate destination, dative movement is excluded. This contrast brings out a important feature: Animate Goals are *affected* in a way that inanimates are not. The link between the features of affectedness and animacy are shown in the following:

- (32) Q: What happened to +Ellen?  
A: The lawyer sent Ellen a +letter.

- (33) Q: What happened to +Dallas?  
A: \*The lawyer sent Dallas a +letter.

Let us assume, along with Harley (1995), that *to give X to Y* causes X to possess Y. As a result of the action described in (32), Ellen is caused to possess a letter; but as a result of (33), the city of Dallas is not caused to possess a letter, unless by “Dallas” we are referring to some group of people, a committee or an institution. Animates have certain properties that inanimates do not, including being voluntary possessors or “holders” to use Kratzer’s terminology.

Note that the implication does not go the other way in English: animate goals are not *obligatorily* shifted. Topic continuity in discourse is the controlling factor, and animates tend to be topical, established in the discourse, while inanimates are more often new information. There is a cluster of features that fall together here; definiteness, person, and animacy. Animates tend to be definite, inanimates more often indefinite. First and second person are exclusively animate, while only some third persons are. Languages elect to grammaticalize discourse probabilities of the kind that control topic continuity.<sup>9</sup>

### 3.3 Datives in Lummi

In the English and Yaqui examples above, we find the following pattern emerging:

- (34) In dative hierarchies, higher-ranked goal arguments have only structural case, and lower-ranked goals have only an inherent (oblique) case.

In hierarchies of this kind, “productive” dative movement is *excluded*; the case assignment of goal arguments follow strictly from their rank in the hierarchy. Arguments that differ in rank also differ in structural position, and thus differ in their Case options.

Now let us consider some examples of hierarchies in which dative movement is excluded for particular argument classes defined with respect to person or definiteness. In some hierarchies, first/second person goal arguments are obligatorily “advanced” to ACC case marking, and are never oblique; in contrast, third person goal arguments, a class which includes indefinites, are expressed only as obliques. There may be additional ranking internal to the category of third person with respect to the features of definiteness, animacy, humanness, volitionality, etc.

Lummi excludes productive dative movement; the speaker cannot place focus alternatively on the theme or the goal according to discourse factors. Animate goals are obligatorily “advanced” to the status of direct object. The item exchanged may optionally be identified by adding an oblique nominal. In (35), the root *’oηəs* “give” appears with the auxiliary or “light” verb *-t*, one of a small closed set of transitivizers:

- (35) *’oηəs-t-s=lə’=∅* (’ə cə sčeenəx<sup>w</sup>)  
give-TRANS-3ERG=PAST=3ABS OBL DET salmon  
“He gifted them ([with] a/the salmon).”

Nominal adjuncts function as “anti-topics” (Lambrecht 1994). Without a nominal, the sentence is interpreted as having a definite third person pronominal object<sup>10</sup> — the absolutive, which is the only null pronoun in any paradigm.

- (36) *’oηəs-t-∅=lə’sx<sup>w</sup>* (cə x<sup>w</sup>ləmi)  
give-TRANS-3ABS=PAST=2SGNOM DET Lummi  
“You gifted them, (the Lummi).”

Lummi has no free-standing pronouns with which the pronominal arguments could agree, ruling out the possibility that they constitute agreement. There are no oblique pronouns or pronominal objects of prepositions in the language (Jelinek 1997). The single oblique marker occurs only with nominals. Inanimate destinations are oblique nominals:

- (37) ye'=lə'=Ø ('ə cə swi'itč)  
 go=PAST=3ABS OBL DET lake  
 "He went (to the lake)."

Inanimate destinations cannot be "advanced". Pronominal arguments are backgrounded, and oblique nominals are given focus. In sum, these constraints produce the following effect in Lummi: Pronouns, presuppositional and topical, are direct arguments with grammatical case; Full nominals (DPs), non-presupposed and focal, are adjuncts that may have oblique case.

### 3.4 Datives in Navajo

In Navajo as in Yaqui and Lummi, there is no "productive" dative movement. Oblique arguments in Navajo are marked with postpositions. Willie (1991) divides Navajo postpositions into two classes, the grammatical vs. the lexical. Grammatical postpositions include the animate goal marker *-aa* and the benefactive *-á*. Lexical postpositions include *góó* which indicates inanimate goals. You will notice that both *góó* and *-aa* mark goals. They differ, however in a number of important properties. For example, *góó* can only be used to mark inanimates:

- (38) Kintáni-góó déyá  
 Flagstaff-to 1SG.NOM.GO.FUT  
 "I will go to Flagstaff"
- (39) \*'awéé'-góó jooł yílmáás  
 baby-to ball 3ACC.3NOM.rolling  
 ["She is rolling the ball to the baby."]

To indicate the intended meaning of (39), one uses the goal marker *-aa*:

- (40) ('awéé') jooł [yaa yílmáás].  
 baby ball 3-to 3ACC.3NOM.rolling  
 "She is rolling the ball to him (the baby)."

The distribution and phonology of these two postpositions is very different. *-góó* is affixed to the DP it modifies. The object of *-góó* is not optional (although the whole *góó* phrase itself is optional). *-aa*, by contrast, falls within the phonological domain of the verb complex (see Hale this volume for discussion); in particular it follows the famous *yi-/bi-* pronouns (e.g., the *y* in *yaa* in (40)). Any DPs with *-aa* are optional, just like full NP subject and object arguments. The object of *-aa* is

obligatorily pronominal. This, we claim, is key. Being pronominal, the argument marked by *-aa* is presuppositional. We take *-aa* to be the rough equivalent of the accusative<sup>11</sup> case marking found on presuppositional goals in Yaqui, Lummi and English. In many ways, they behave like other structurally case marked arguments. For example, they participate in the direct/inverse voice alternation.

- (41) a. yich'í' yátti' Direct  
 3-to 3NOM-speaking  
 "He is speaking to her."
- b. bich'í' yátti' Inverse  
 3-to 3NOM-speaking  
 "He is being spoken to by her."

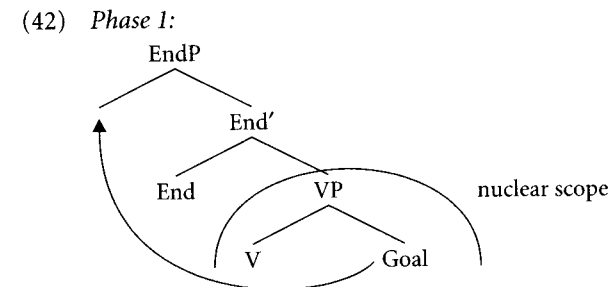
We thus have the identical situation to that of Lummi: we have structural case on pronouns; and inherent case on DPs.

In sum, in languages where information structure is marked overtly in the morphosyntax, there is no "optional" dative movement; there are syntactic constraints on the distribution of the dative. In Lummi, goal pronouns are direct objects; only nominals may be marked oblique. In Navajo the structural cases, the accusative plus the postpositional dative and benefactive, appear with pronominal arguments, and there is a class of lexical postpositions that derive oblique nominals.

### 3.5 A Mapping analysis

In what follows we sketch a phase-geometric mapping explanation for the general pattern seen in the data above. We first sketch the broad theoretical approach, and then return to the differences among the languages.

Let us start with the case of a presupposed goal (i.e., dative movement). We work first with the most deeply embedded phase, which consists of the lexical verb, the goal argument and the end point spatiotemporal operator "End". The goal cannot remain in the nuclear scope since it does not constitute a variable. It thus raises to the specifier of EndP. As such it is mapped to the restrictor of the phase.

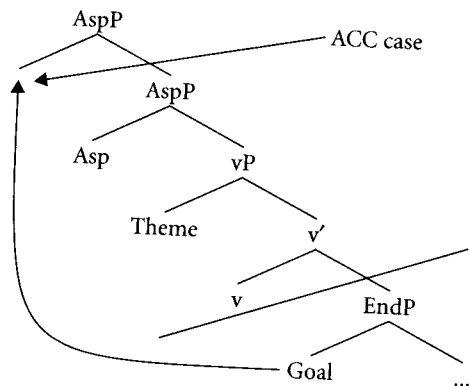


This can't be the end of the story, however. In English, for example, advanced goals appear before the theme argument.

(43) The linguist gave the consultant a present

In first phase, the theme isn't even present. We claim that the solution to this problem lies in case licensing. We claim that EndP is not capable of case licensing any arguments. The goal then, in (42) is not case-marked. In order to receive case, we claim that it moves to a case checking position in the next higher phase. Fortunately, by moving the NP to the specifier of EndP, we have placed the goal at the phase edge, allowing the next phase to access it.

(43) Phase 2

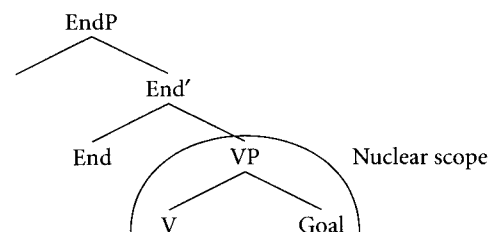


Notice that the interpretation of the nominal is fixed in the first phase, so subsequent movement for PF phenomena like Case will not affect the semantics. In order to get the correct word order in a language like English, we also need to claim that the verb undergoes short verb movement (Johnson 1991) ( $V \rightarrow \text{End} \rightarrow v^1 \rightarrow \text{Asp} \rightarrow v^2$ ) although this need not occur in every language.

Needless to say, Asp needs to be able to license multiple ACC cases, since the theme argument also gets ACC. This kind of situation is not unique. For example, the phenomenon of multiple *wh*-movement in languages like Serbo-Croatian and other south Slavic languages causes a similar problem for feature checking (see Karimi, this volume, for discussion). Whatever the solution to the problem of multiple *wh*-movement is, we could apply it here.

Let us turn now to the cases where the goal is asserted, rather than presupposed. Unlike (42), the goal here can remain inside the nuclear scope, where it is interpreted under existential closure.

(44) Phase 1:



Again, case checking is required. But here the goal is not accessible to the next phase (it is not on the phase edge). The only way to avoid crashing is to mark the goal with an inherent case. Were we writing this paper in the late 1980s or early 1990s, we'd say that this inherent case marking occurred under government from End (lexicalized as *to* or *from*). Interestingly, recently (in *Beyond Explanatory Adequacy*, 2001a) Chomsky has introduced checking (via Agree) under "local c-command". As far as we can tell, this is the same thing as government. At the risk of being slaves to fashion, we tentatively point to this as an explanation for the inherent case marking on asserted goals.

Let us turn now to the differences among the various languages discussed above. The broad strokes of the analysis remain the same. English is the most transparent case. It corresponds directly to the description above. The account of Yaqui is closely related. The only difference is that in Yaqui, mapping to the restrictor has been grammaticized to include only strongly affected objects, and is as such lexically limited. The cases of Navajo and Lummi are a little more complex. Both these languages are pronominal argument languages (Willie and Jelinek 2000). Recall that pronominals are inherently<sup>12</sup> presuppositional, as such they cannot be left in the nuclear scope of the lexical verb. Both Navajo and Lummi use a device remarkably similar to that used by Egyptian Arabic. The arguments "incorporate" into the verb and raise<sup>13</sup> with it out of the nuclear scope.

There is an important difference between languages like English and languages like Lummi and Navajo. In English we can override discourse considerations in the choice of dative movement or not by using contrastive stress. In Lummi and Navajo, dative alternations are obligatory, they cannot be overridden by contrastive stress — this is a property of pronominal argument languages in general (Jelinek 2000b).

#### 4. Mapping the highest phase: The role of voice and case splits

We now turn to mapping effects in the highest (subject oriented) phase. Here we will see the effects of the mapping in terms of split case/agreement marking and voice alternations.

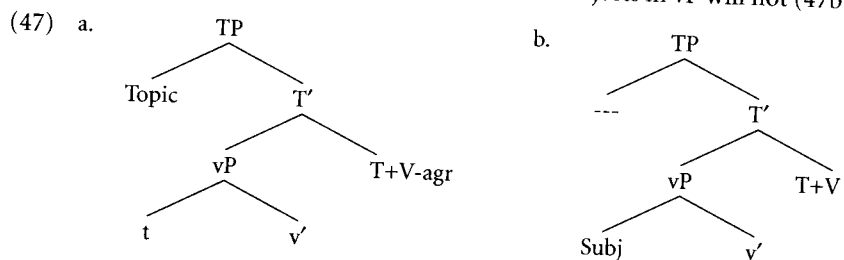
## 4.1 Topicality Agreement in Oromo

Consider the following data from the Cushitic language Oromo from Ethiopia. In this language, topicality is directly encoded in the agreement system of the verb (data from Clamons et al. 1999). Verbs in Oromo show agreement with presupposed/topical subjects (45), but not with focal/non-presuppositional NPs (46).

(45) *intal-t-ii-n hoolaa bit-t-e*  
 girl-FEM-SUBJ-TOP sheep buy-FEM-PAST  
 "The girl bought a sheep"

(46) *intala takka-á hoolaa bit-e*  
 girl one-FEM-SUBJ sheep buy-PAST  
 "A girl bought the sheep"

Let us take morphological agreement to be a local relation between a specifier and head. Further let's assume that Oromo verbs are in the highest head position (TP). Subjects in SpecTP will trigger agreement (47a). Low subjects in vP will not (47b):



In (45) the subject is presupposed, so must raise out of the vP, where it triggers gender agreement with the verb in T. In (46), the existence of *girl* is asserted, thus does not raise out of vP, and thus does not trigger agreement

## 4.2 Navajo animacy hierarchies

Navajo is well known for the complex associated animacy hierarchy in NPs. However, first and second person, as well as the "fourth" (other third) person are off the animacy scale and when a sentence contains one of these arguments along with a third, the higher ranked arguments are topical and the third person is in focus.

- (48) a. *ashkii yiiŋtsá*  
 boy 3OBJ-1SG.SUBJ-saw  
 "I (Topic) saw +the boy."  
 b. *ashkii shiiŋtsá*  
 boy 1SG.OBJ-3SUBJ-saw  
 "+The boy saw me (Topic)."

The animacy hierarchy varies to some extent across speakers, as the language now has fewer and fewer fully fluent speakers. A typical hierarchy has the ranks: Adult human > child > large animal > small animal > inanimate. The hierarchy works like this: if there is more than one DP in a sentence, they are always ordered with respect to the hierarchy. Regardless of their grammatical relations, they must always be ordered with respect to the animacy scale. Compare:

(49) *asdžáá at'ééd aŋk'ésdisi yeini'á* DIRECT  
 woman<sub>i</sub> girl<sub>j</sub> candy<sub>k</sub> 3<sub>j</sub>-to-3OBJ<sub>k</sub>-3SUBJ<sub>i</sub>-gave  
 "The woman gave the candy to the +girl."

(50) *asdžáá at'ééd aŋk'ésdisi beini'a* INVERSE  
 woman<sub>i</sub> girl<sub>j</sub> candy<sub>k</sub> 3<sub>j</sub>-to-3OBJ<sub>k</sub>-3SUBJ<sub>i</sub>-gave  
 "The woman was given the candy by the +girl."

The change in the initial verbal prefix is an instance of the *yi-/bi-* alternation, which makes the lower ranked patient (the woman) topical, while the higher ranked agent (the girl) is in focus. The *bi-* pronoun marks a topicalized patient. This is the inverse voice, which like the passive makes the patient topical. However, unlike the passive, it is a transitive with two direct arguments (there is no *by*-phrase). The passive is just the best available translation. The DPs never change order; the verbal morphology marks the voice change.

If the sentence contains only DPs that are equal in rank on the scale, then the alternation can be used to mark discourse topicality; that is, the speaker can maintain an established topic.

(51) *ashkii at'éed yizts'qs* DIRECT  
 boy girl 3-3-kissed  
 "The boy kissed the +girl."

(52) *ashkii at'éed bizts'qs* INVERSE  
 boy girl 3-3-kissed  
 "The boy was kissed by the +girl."

Willie (1991) showed that the default reading of nominals in Navajo is definite; they may receive indefinite readings in existential contexts, and the like. It is possible to derive an indefinite NP by the use of a particle *léi'*.

(53) a. *ashkii léi' at'éed yizts'qs* DIRECT  
 boy PART girl 3-3-kissed  
 "A boy kissed the girl."

b. *ashkii at'éed léi' yizts'qs* DIRECT  
 boy girl PART 3-3-kissed  
 "The boy kissed a girl."

However, if the inverse form is used, the topical NP cannot be made indefinite.

- (54) a. ashkii at'ééd léi' bizts'qs      INVERSE  
 boy girl PART 3-3-kissed  
 "The boy was kissed by a girl."  
 b. \*ashkii léi' at'ééd bizts'qs      INVERSE  
 boy PART girl 3-3-kissed  
 ["A boy was kissed by the girl."]

We suggest that the topmost NP in the inverse has moved up to the restrictor topic position in TP, and therefore cannot be made indefinite by existential closure. In the direct construction, the initial NP has been subjected to existential closure, and the definite NP raises (possibly at LF), leaving a trace.

The Navajo animacy hierarchy and voice alternation are central to Navajo syntax, and have been the source of numerous disputes between Athabaskanists. The reason for this is that these aspects of Navajo grammar represent unique developments within the far-flung Athabaskan family, and the cognates of the pronouns used in the voice alternations have developed into many other uses in various relatives of Navajo, giving rise to many different syntactic developments. But there appears to be some version of a hierarchy in most of the languages in the family.

#### 4.3 Lummi ergative splits<sup>14</sup>

Lummi is an example of a language that elects to pay attention to the upper reaches of the presuppositionality scale. It employs an ergative split of the most common variety (1, 2 > 3) to exclude 3 > 1, 2. First and second person are NOM/ACC in case, and third person is ERG/ABS.

It is very instructive to lead bilingual Lummi speakers through a paradigm such as the following.

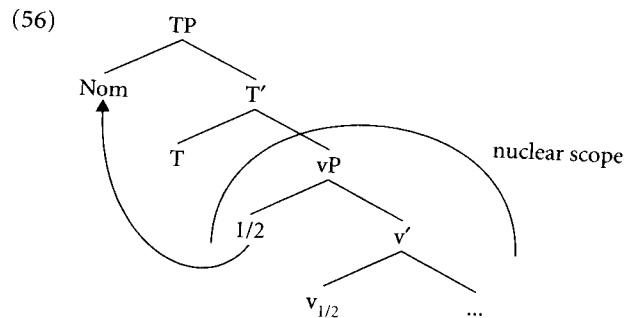
- (55) a. nəp-t-ŋəʔ=sx<sup>w</sup>  
 advise-TRANS-1PL.ACC=2SG.NOM  
 "You advised us."      2NOM > 1ACC  
 b. nəp-t-Ø=sx<sup>w</sup>  
 advise-TRANS-3ABS=2SG.NOM  
 "You advised him."      2NOM > 3ABS  
 c. nəp-t-s=Ø  
 advise-TRANS-3ERG=3ABS  
 "He advised him."      3ERG > 3ABS  
 d. \*nəp-t-s-ŋəʔ or \*nəp-t-ŋəʔ-s  
 ["He advised us"]      \*3ERG > 1ACC  
 e. nəp-t-ŋ=ʔ  
 advise-TRANS-PASSIVE=1PL.NOM  
 "We were advised."      1NOM

Speakers produce the example sentences comfortably until they are asked to say (55d) "He advised us". Then they stop, look surprised and uneasy, and then if they are good consultants, after a while may say something like "Well, we don't say it that way. You might say [(55e)], but it's not really the same, is it?"

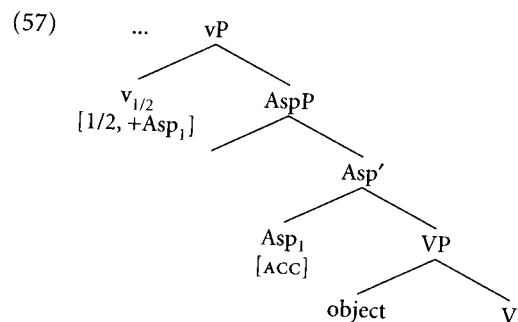
Jelinek (1993) extends the mapping principle to account for this kind of person split. The analysis she gives is very much in the spirit of the analyses by Abraham (1996), Dubois (1987), Delancy (1981), which give a discourse basis to split ergativity; however, Jelinek formalizes these intuitive characterizations in terms of the mapping principle. She claims that nominative local persons (1st and 2nd person) are inherently presuppositional, and thus must rise out of the domain of existential closure. Ergative non-local persons, by contrast, remain VP internal. The case split involves two intersecting grammatical properties. Jelinek assumes, following Murasugi (1993), Levin (1981), and Bok-Bennema (1991) that ergative case is a lexical case. Further, like Murasugi, she claims that the ergative is a VP internal case. VPs, you will recall, define the domain of existential closure. Local NPs are thus disallowed from this position, since they are presuppositional. So no local NP would ever take ergative case. The unavailability of the reading in (e) with an ergative third person and a 1/2 object follows from a simple fact about Lummi morphology. Lummi only allows a single internal argument to be realized in the verbal morphology, and both ergatives and accusatives are VP internal.<sup>15</sup> There is a morphological template in Lummi: V + (transitivity) + (voice) + (internal argument) = (external argument clitic). For example, double object constructions are simply impossible in Lummi (as seen above in Section 3), because there is only one morphological slot for internal arguments in the verb complex. The unavailability of (e) follows from the fact that we have both an ergative and an accusative pronoun competing for a single morphological position.

Let us translate Jelinek's account into the phasing approach advocated here. The basic intuition that ergative case marking represents a lexically case marked internal argument construed within the nuclear scope is retained. The difference between the Jelinek's account and the one we present here is notational (and we hope without negative empirical consequences). The crucial distinction is made in terms of the nature of the little 'v' category.

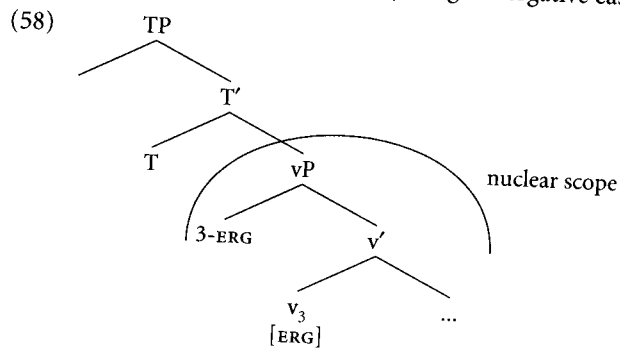
First let us consider a 1/2 subject, which would get nominative case and is interpreted topically in the restrictor. The subject raises out of the VP that introduces it, on the topmost phase then. It takes nominative case in the specifier of TP. Such a structure looks like (56):



The little *v* in this construction ( $v_{1/2}$ ) selects only for 1/2 person subject and selects for a *AspP* that can assign accusative case:

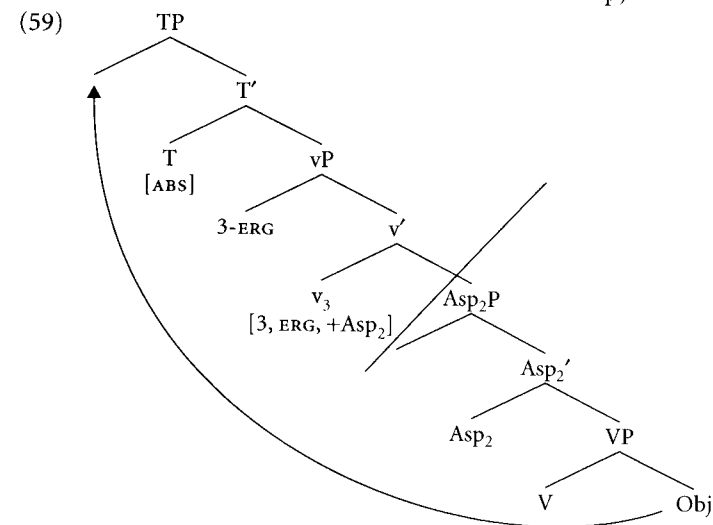


Contrast this with a third person subject, which is interpreted focally.<sup>16</sup> This pronoun is selected for by a different little *v* ( $v_3$ ). The lexical entry for  $v_3$  differs in that it (1) assigns a lexical case to its specifier, and (2) selects for a defective *AspP*, which cannot assign ACC case. The subject, construed internal to the nuclear scope, does not raise, and takes the inherently assigned ergative case marking.



On the lower phase, the object is Caseless and cannot receive Case from the defective *AspP*. In order to be licensed then, it must raise into the next phase, where

it gets absolutive (=nominative) case marking in the specifier of TP (presumably stopping in the specifier of *AspP* for generalized EPP reasons, thus placing it at the phase edge — we abstract away from this intermediate step)



Again, these trees should not be taken as the surface form, as further fronting of the verb and the pronominal argument status of the language further obscures the surface form. What is crucial, however, is that ergative and accusative cases compete for a morphological slot (as encoded by the selection of different types of *Asp* head by the various kinds of *v*) and that there is a mapping relation between the information structure status of the pronoun and its syntactic position and case.

The availability of the passive voice here reflects yet a third type of *v* ( $v_{pass}$ ), which does not assign an external argument or lexical case, but selects for *AspP*,<sup>17</sup> so the object (of any kind) can raise to the specifier of TP for case checking.

#### 4.4 Word order in Kirundi<sup>18</sup>

Ndayiragije (1999) presents a fascinating paradigm of data from Kirundi, a Bantu language. We propose that the simplest analysis of this data falls out from a mapping approach to word order, where the phenomenon is intermediate between a split-case pattern (in that we appear to get distinct agreement patterns depending upon the presuppositionality of the subject) and inverse marking (the fact that the grammatical relations are reversed is indicated by a verbal prefix). Consider the following data, which concern contrastive focus on the object.



- (60) a. Abâna ba-á-ra-nyôye amatá SVO  
 children 3PL-PAST-AF-drink.PERF milk  
 "Children drank milk"
- b. Abâna ba-á-nyôye amatá SVO  
 children 3PL-PAST-drink.PERF milk  
 "Children drank milk (not water)"

Neutral information structure in Kirundi requires the presence of a special anti-focus marker (glossed AF). This particle is disallowed in all contrastive focus constructions (like 60b).

An interesting alternation occurs when a subject, rather than an object is contrastively focused, this is seen in the pair of sentences in (11)

- (61) a. Petero a-á-ra-guze ibitabo SVO  
 Peter 3S-PST-AF-buy.PERF books  
 "Peter bought books"
- b. Ibitabo bi-á-guze Petero OVS  
 books 3PL-PST-buy.PERF Peter  
 "Peter (not John) bought books."

A word order alternation occurs here: the contrastively focused subject is final, and the object is in initial position and most importantly, the verb agrees with the object.

In order to account for this pattern we appeal to the information structure of these constructions. We assume, following Rooth<sup>19</sup> (1999) (and contra Kiss 1998) that contrastive focus, like information focus introduces new information, even though it does so from a presupposed set. As such, contrastively focused elements are compatible with the nuclear scope of the clause. Evidence for this is the fact that, in Kirundi, pronominal objects (inherently presupposed) are incompatible with contrastive focus (62).<sup>20</sup>

- (62) a. Abâna ba-á-ra-ya-nyôye.  
 children 3P-PST-AF-CL-drink.PERF  
 "Children drank it."
- b. \*Abâna ba-á-Ø-ya-nyôye.  
 children 3P-PST-F-CL-drink.PERF  
 "Children drank it."

On the other hand, contrastive focus marking (Ø) is obligatory in negatives (63) and *wh*-questions (64), both of which are typically associated with novel information.

- (63) a. Abâna nti-ba-á-nyôye amatá.  
 children NEG-3P-PST-drink.PERF milk  
 "children didn't drink milk."

- b. abâna ba-á-ra-nyôye amatá.  
 children 3P-PST-AF-drink.PERF milk  
 "children drank milk."
- c. \*abâna nti-ba-á-ra-nyôye amatá.  
 children NEG-3P-PST-AF-drink.PERF milk
- (64) a. Abâna ba-á-Ø-nyôye iki?  
 children 3P-PST-F-drink.PERF what  
 "What did children drink?"
- b. \*Abâna ba-á-ra-nyôye iki?  
 children 3P-PST-AF-drink.PERF what  
 "What did children drink?"

The crux of our analysis here should be obvious from our treatment of Lummi and other languages. Novel, focal subjects remain within the nuclear scope (as indicated by their post verbal position); the object raises to satisfy the prototypical subject properties of the clause (as indicated by its initial position and the fact it triggers agreement). However, the analysis is complicated by certain word order facts. Indeed, as Ndayiragije shows, there is extensive evidence that there is movement of contrastively marked arguments to the right edge of the clause. Consider first the following evidence from adverb placement. When the anti-focus marker — *ra* is present, the object must be adjacent to the verb, no intervening adverb can occur (65a&b). With contrastive focus constructions however, the contrastively focused object appears finally (65c)

- (65) a. Yohani a-á-ra-oógeje imiduga néezá.  
 John 3S-PST-AF-wash.PERF cars well  
 "John washed cars well."
- b. \*Yohani a-á-ra-oógeje néezá imiduga.  
 John 3S-PST-AF-wash.PERF well cars
- c. Yohani a-á-Ø-oógeje néezá imiduga.  
 John 3S-PST-F-wash.PERF well cars  
 "John washed cars well (not trucks)."

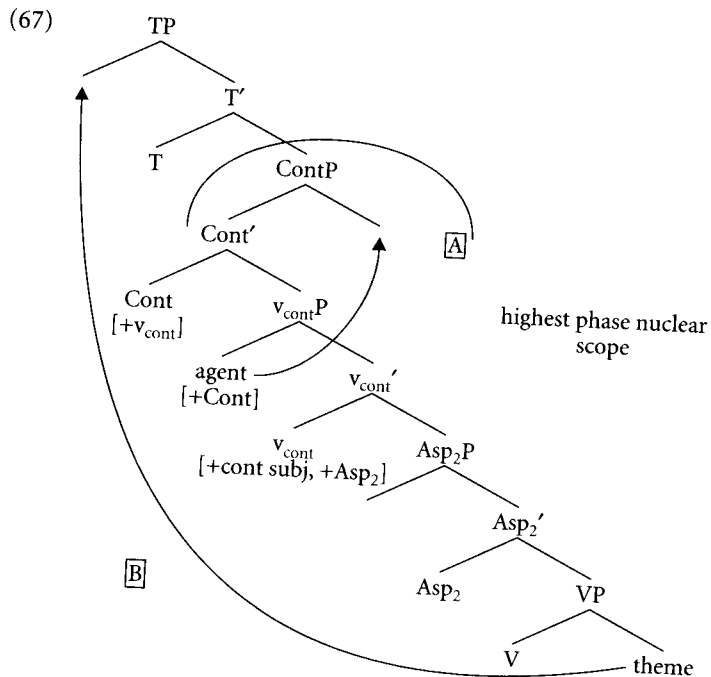
Related evidence comes from embedded clauses: Objects without contrastive focus must appear adjacent to the verb, to the left of embedded clauses, focused objects appear to the right of such clauses.

- (66) a. *pro* tu-á-ra-rungitse abâna<sub>i</sub> [<sub>CP</sub> PRO<sub>i</sub> kuryâma].  
*pro* 1P-PST-AF-send.PERF children INF-sleep  
 "We sent children to sleep."
- b. \**pro* tu-á-ra-rungitse [<sub>CP</sub> PRO<sub>i</sub> kuryâma] abâna<sub>i</sub>.  
*pro* 1P-PST-AF-send.PERF INF-sleep children

- c. *pro* tu-á-Ø-rungitse [CP PRO<sub>i</sub> kuryâma] abâna.  
*pro* 1P-PST-F-send.PERF INF-sleep children  
 "We sent to sleep children (not adults)."

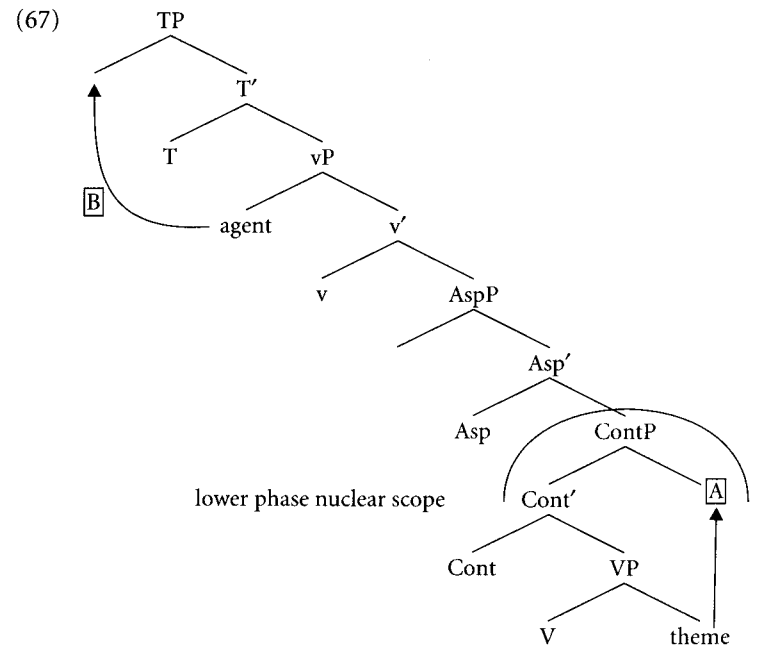
Ndayiragije presents these faces as evidence that the contrastively focused element has shifted to the right. This evidence must be reconciled with the interpretive requirement that contrastive focal arguments remain in the nuclear scope. We adopt here part of the analysis of Ndayiragije, who posits a functional category for contrastively focused elements. He calls this position FOC. Due to the potential confusion of such a functional category with informational focus, we relabel it Cont (for contrastive focus). This position immediately dominates the vP. In order to account for the strictly final position of contrastively focused elements, Ndayiragije posits a rightwards specifier for this position. Cont has the dual function of marking the NPs as contrastively focused, and inherently case marking them. Let us see how this would work with a contrastively focused subject. We must make the following assumptions. Cont selects for a particular kind of v — one which introduces external arguments that are to be contrasted.<sup>21</sup> This v is realized as a Ø and we call it v<sub>cont</sub>. v<sub>cont</sub> selects for Asp<sub>2</sub>.

Selectional considerations on the merge operation will only allow the following combination of functional and lexical heads if Cont is present (both phases are shown in the tree below).



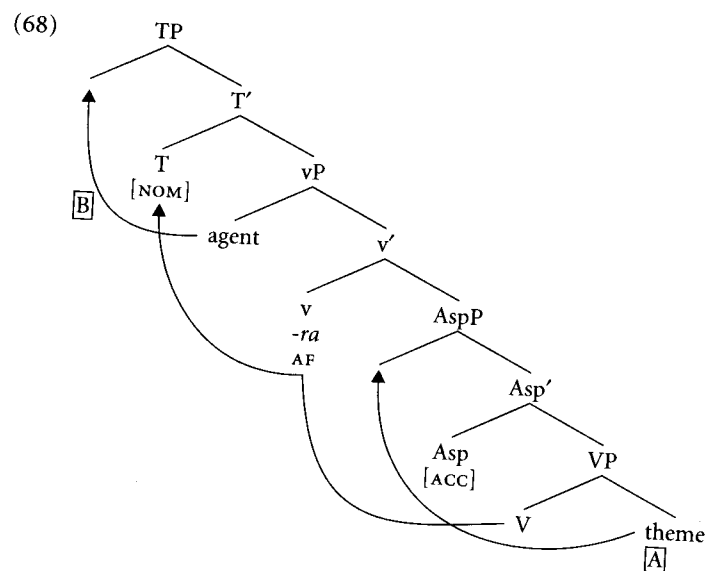
Crucially, as a slight departure from the above, nuclear scope extends to ContP. The agent raises to SpecContP (movement A in (67)) inherently checking its case. Since the selected-for Asp<sub>2</sub> does not assign accusative case, the theme moves to the specifier of TP, where it gets nominative case and triggers verbal agreement (we leave aside the interpretation of the theme here, which may or may not involve construal within its own nuclear scope). The verb raises through all the relevant functional heads, giving us the correct OVS order.

Consider now a contrastively focused object. Here the relevant phase-specific nuclear scope is a lower ContP (which like its higher phase counterpart is an inherent case assigner).



Here the theme moves to the specifier of ContP to be marked as contrastive (appearing clause finally) and be inherently case marked [A]. The subject raises to the specifier of TP, where it triggers subject agreement [B]. Again the verb raises through all the functional categories, to pick up the relevant morphemes.

Finally let's consider the case of the antifocus sentence. In this form, neither phase has a Cont. As such the special antifocus v (-ra) is used. This v selects for an accusative assigning Asp (68), which in turn cannot select for Cont:



This gives us straightforward nominative/accusative ordering with neutral interpretation.

### 5. Some speculations on language variation in hierarchies

In this paper, we've presented a view of hierarchies based on the syntax semantics mapping, and we have liberally applied the terms "presuppositional" and "topical" without being specific about what these terms mean. Indeed, the careful reader will note that our discussion of Arabic has all pronouns as being "presuppositional" but our account of Lummi has only 1/2 persons as "presuppositional". We would like to offer some very vague speculations on why this might be the case.

Two issues are at stake: On one hand there appears to be a universal scale of presuppositionality. That is, for example, you never find a language that has third persons ranked above 1/2 persons. On the other hand, there is widespread variation in what counts as "presuppositional" or "topical". For example, VSO/VOS word order alternations in the closely related Mayan languages of Tzeltal and K'ichee' vary in precisely which features drive the alternation: Tzeltal makes use of animacy, K'ichee' uses specificity.

Why should the feature of animacy enter into the hierarchies? Notice that the distribution of this feature is precisely the same as that of definiteness/specificity: that is, all first and second person arguments have the properties of both definiteness/specificity and animacy, while only some third persons do. All arguments that are either inanimate or indefinite are exclusively third person. Of course, there are

also third persons that are animate and definite; that is, the features of person and definiteness/animacy do not coincide, but there is class inclusion. (1) all first and second persons are definite and animate; (2) some but not all third persons are definite and animate; (3) all indefinites and inanimates are third person. This co-distribution of these properties make it likely that a particular grammar might use to express either one or the other in an argument hierarchy, and this is what we find. Also, a language may choose to group all pronominal referents together, as apposed to NPs, whereas another language might lump all third persons with indefinites/inanimates, since all indefinites/inanimates are third person.

Returning to the larger question of language variation, let us first consider the model of grammar we are working in here — roughly that of Chomsky (1995). This framework holds that there are essentially two components to the grammar (leaving aside morphology and phonology): (a) a lexicon, which holds all language specific idiosyncratic information and (b) a grammar, which is universal (i.e. there are no parameters per se). The grammar contains the rules Merge and Move/Attract/Agree and a set of interface constraints, such as the principle of full interpretation and the mapping principle, which govern convergence. These parts of the system are the "Linguistic" components of the human language capacity. But these linguistic portions do not exist in a vacuum. They interact with other kinds of cognition. For example, the syntax generates strings which are submitted to Articulatory/Perceptual and Conceptual/Intensional Interfaces. Needless to say, however, these AP and CI interfaces also have an effect on the lexicon. As we develop, we use our general cognitive skills to create form/meaning correspondences relating the world to concepts and concepts to words. These correspondences are further complicated by the fact that we also rely on the linguistic input of our caregivers. We thus see the effects of historical change, language acquisition, and general cognitive skills in the shape of lexical entries. Variation among languages lies here. Which features a language chooses to grammaticize as "presuppositional" are an effect of all of these factors.

The apparent universal side of the equation is much trickier, and we can only guess at its origins. Part of it may reside in the grammatical mapping principle — that is, hierarchy sensitive syntactic phenomena are universally determined by mapping rules. Part of it may come from extra-linguistic sources, such as general cognition. To give a parallel, we all perceive the differences among colors, knowing what is a more "blue" color and what is a more "green" color, but languages vary in if and how this cognitive/perceptual issue is lexicalized. We may well have a general cognitive sense of "what's new" and "what's old" but languages differ in how they lexicalize this into formal features in the lexicon.

## 6. Conclusion

In this very cursory treatment of some very complex data, we have reviewed the Mapping Principle, and noted that the hierarchies always conform to it. The hierarchies often grammaticalize discourse tendencies and produce overgeneralizations, for example: by excluding all sentences where  $3 > 1/2$ , Lummi excludes all sentences where Indefinites  $>$  Definites. Nevertheless we consider the wide variety accounted for in this paper good support for the conjecture that there is a correlation between syntactic prominence and prominence on the presuppositionality scale. The hierarchies are interesting “imperfections” in particular languages that produce variation within and across language families, and represent the grammaticalization of certain highly frequent discourse tendencies.

## Notes

\* We would like to thank Emmon Bach, Luis Barragan, Andrew Barss, David Basilico, Tom Bever, Sheila Dooley Collberg, Molly Diesing, Dick Demers, Ken Hale, Heidi Harley, Jason Haugen, Simin Karimi, Terry Langendoen, Barbara Partee, Montserrat Sanz, Mary Willie, Robert Young, four anonymous reviewers, and the audience at the Spring 2002 Arizona Proseminar in Syntax, for their help and counsel. Maria Amarillas, Frances Delgado and Maria Morales helped us with the Yaqui examples and analysis.

‡. *Editors' note:* It may at first blush seem odd to find a paper by a volume honoree in a festschrift. However, we'd like you to know that we invited Eloise Jelinek to contribute to this volume without telling her that the book was in her honor. We knew the paper she would write would be very appropriate to the theme, and felt it would be nice to include something by our favorite colleague. This paper received the same peer review and editing process that all the other papers in the volume did. When Eloise found out that the book was in her honor, she *vehemently* wanted to pull this paper. We wouldn't let her, since we think it is an excellent contribution to the volume theme. Eloise would like everyone to know that she did *not* write this paper in her own honor. However, Andrew Carnie would like everyone to know that it was an honor to work with Eloise and his small portion of the paper is dedicated to her. [AC, HH, MW]

1. Aissen (1999, 2000).
2. The precise means of encoding “more animate, more topical, more specific” etc. is discussed below in Section 5.
3. In many ways, this kind of approach mirrors formally the intuitions of many functional accounts of hierarchies and ergativity: DeLancy's (1981), given in terms of figure/ground viewpoint and attention flow mechanisms (a.k.a. voice marking and case marking) and DuBois's (1987) discourse based account.
4. We leave aside the question of whether this scrambling (see Karimi, this volume), or indeed any of the movement posited in this paper, is motivated by purely formal syntactic features (as would be consistent with Chomsky 1995) or by semantic considerations such as effability (see Adger 1997).

5. The terms ‘topic’ and ‘focus’ have had various uses in the linguistic literature; they have been used to refer to discourse phenomena, often in quantitative studies. The term ‘topic’ has been used to refer to a sentential adjunct. The terms have also been used with reference to the information structure of the sentence; we follow this usage, as in work by Partee (1991), Heim (1982), and Diesing (1992), as well as work by Sasse (1987), von Stechow (1989) and others, in the analysis of the thematic/categorical contrast. In this tradition, that part of the sentence that is familiar and presuppositional is classed as topical, established in the discourse, while what is new information in the context of the sentence belongs to the focus. Basilico extends the thematic/categorical contrast to the topicalization of goal arguments within the object array in dative movement.

6. We collapse object shift and object scrambling into one category here, although it is by no means clear that they form a unitary phenomenon, see Thráinsson (2000) for discussion.

7. Parts of this section are based on Jelinek (2000a)

8. We have only been able to find a single minimal pair, where both an ACC/DAT and an ACC/ACC object array appear. There is a derived construction with the root *vit-* “see” plus the causative suffix *-tua*. With an ACC/ACC object array, this derived form has the meaning “show”.

- (i) 'aapo 'enchi 'uka kava'i-ta vit-tua-k ACC/ACC  
 he you.ACC DET.ACC horse-ACC see-CAUS-PERF  
 “He showed you the horse.”

The derived form *vit-tua* also occurs with a DAT goal argument:

- (ii) 'aapo 'eu 'uka kava'i-ta vit-tua-k ACC/DAT  
 he you.DAT DET.ACC horse-ACC see-CAUS-PERF  
 “He sent you the horse.”

In view of the contrasting glosses, it appears that we are dealing with two distinct derived verbs here, rather than the alternation seen in “dative movement” in English, where the meaning of the verb itself does not change. We noted above that the Yaqui “double accusative” verbs assign the property of being strongly affected to their animate goals. An ACC (animate) goal is generally more affected than a DAT goal, which may be inanimate. In Yaqui this strongly affected property is also seen with benefactive (or “malefactive”) objects in the language. The Yaqui applicative (benefactive) suffix *-ria* adds an ACC benefactee argument:

- (iii) 'aapo 'enchi bwiik-ria-k  
 he you.ACC sing-BENE-PERF  
 “He sang for you.”

Hale and Keyser (1993) show that in other Uto-Aztecan languages, some causative constructions receive a benefactive interpretation. The causative and benefactive suffixes do not co-occur. We suggest that the Yaqui “double accusative” construction, with a strongly affected goal, should be classed as a variety of the benefactive. Tying this together with other ditransitives, we note that Harley (1995) argues that a causative projection is universal in the structure of verbs corresponding to “give”.

9. Note also, that like Yaqui, English has lexical restrictions on dative movement. Latinate verbs, and verbs like *whisper*, do not allow the alternation.

10. Note that the interpretation here must be a definite presupposed entity. Indefinite readings for these pronouns (such as “They gifted someone.”) are *not* possible with just the bare pronouns and no nominal adjuncts.

11. Although confusingly, this postposition is called the dative in most Athabaskanist linguistics. Nomenclature is irrelevant to the basic point we are making, these elements are structurally case marked, no matter what we call the case. In this regard they stand in stark contrast to lexical postpositions, which we claim actually mark oblique cases.

12. In the next section we will claim that some pronominals are more presuppositional than others. This will be discussed in detail there.
13. We are assuming here that Navajo is a verb raising language.
14. The discussion in this section is based partly on Jelinek (1993).
15. The observant reader may have noted that our account here appears to be inconsistent with the account of Arabic discussed above. In that 3rd person pronouns raise obligatorily in Arabic because they have to be mapped to the restrictor (pronouns receiving a presupposed reading). Yet here we claim that third pronouns are mapped to the nuclear scope. An account of the difference might lie in the fact that Arabic and Lummi differ in their statuses as Pronominal Argument languages. We, however, believe that a simpler solution exists. We have consistently used the terms topic and focus here. This is because we wish to argue that what is important is the relative presuppositionality of the arguments, what is asserted and what is "older" information. Topic and focus then range over degrees of presuppositionality.
16. Although not necessarily entirely non-presuppositionally, as pronouns usually have a discourse or sentential referent. They are simply less presuppositional than the highly topical 1/2 person.
17. The analysis here essentially stipulates Burzio's generalization. The reason for the stipulation is a topic for future research.
18. The data in this section is taken exclusively from Ndayiragije (1999). Ndayiragije offers a formal account in terms of the minimalist program. We adopt only parts of his account here. Nevertheless, we benefited greatly from his careful presentation of the data, and both his descriptive and theoretical characterizations of the facts, even if we don't adopt all the details of his analysis.
19. Our thanks to Molly Diesing for very helpful discussion of these issues.
20. Obviously this isn't true for English, pronouns can be contrastively stressed (*I kissed HIM*). We have no idea why these should be the case, except to note that this is primarily acceptable only in a deictic sense of the pronoun rather than an anaphoric usage.
21. A simpler solution may be that Cont is a v. We leave this as an open possibility.

## Focus movement and the nature of uninterpretable features\*

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### 1. Introduction

Focus has been discussed in recent literature with respect to a variety of its properties (Kiss 1998, Zubizarreta 1998, Hale, Jelinek, Willie (to appear), among others). This phenomenon, which is often characterized as "optional" or "discourse-based", is most often dealt with in the functionalist tradition. However it raises special questions when examined in the light of a formalist syntactic approach, such as the Minimalist Program (MP). For example, is there any evidence indicating that focus movement is feature driven? Is it subject to any principles governing the operation Move such as the Minimal Link Condition (MLC) (Chomsky 1995a)? Second, if focus is a feature driven operation representing an instance of Move, how can we account for the optionality we observe with respect to this movement in some languages? More precisely, how can a feature only optionally trigger movement?

Within the Minimalist Program, the feature triggering the operation Move is considered to have an uninterpretable nature with no semantic or phonological content (Chomsky 1995a and work thereafter, Pesetsky and Torrego (2001), among others). Thus if focus movement is feature driven, the feature triggering this operation must be of an uninterpretable nature. The issue of the existence of uninterpretable features is itself problematic for a theory whose goal is to go beyond the level of explanatory adequacy (Chomsky 2001a).

This paper is an effort to address the question of the functional motivation of movement, focus in this case, and its formalization within a feature based system. Since uninterpretable features are considered to be the triggering force for Move, the nature of these features is examined, and an alternative analysis to Chomsky's (1995a) proposal is suggested. Finally, the optionality of focus, a functionally motivated movement, is discussed, and a solution is proposed within a theory that prohibits the existence of optional operations.

### **PART III: Yaqui Morphosyntax**

While Jelinek worked extensively on languages of Australia, Salish Languages, Semitic languages, and Apachean languages, the majority of her own field work lay in the study of the Uto-Aztecan Language Yaqui (also known as Hiaki or Yoëme), which is spoken near Tucson where Jelinek spent the last 40 years of her life. Jelinek worked closely with the Yaqui community in Arizona, helping them to develop pedagogical materials for teachers and language students. She also did significant work on the morphosyntax of the language. We present here four of her papers on the language, one that is reasonably accessible (Jelinek 1998), two that appeared in less accessible venues (Jelinek and Escalante 1989 and Jelinek 2003), and one that was in the course of being written when Eloise passed away in 2007 and appears here in print for the first time. The papers here focus on argument realization, scope, voice and transitivity in the language.

III.1 **Jelinek, Eloise** and Fernando Escalante (1989) Double Accusative Constructions in Yaqui. *Proceedings of the Pacific Linguistics Conference*, University of Oregon, Eugene. 120-132

This short paper -- which is an important empirical contribution, but not widely available -- presents new data from Yaqui on the equivalent of double object constructions in the language. The authors argue that unlike English and other more commonly spoken languages, the double accusative construction in Yaqui is determined purely lexically. There are no 'dative' shift type alternations; the presence or absence of the construction is determined by which verb is used. They show however, that like the English construction, the accusative goal argument functions as the direct object for processes of passivization and caustivization. The data and analysis in this paper are particularly important because it shines new light on the question of the relationship between (quirky) case and grammatical function changing operations.

## DOUBLE ACCUSATIVES IN YAQUI\*

*Proceedings of the Pacific Linguistics Conference*, University of Oregon, Eugene. 120-132  
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### Introduction.

The phenomena of "Dative Movement" or "Goal Advancement" are frequently met with across languages. In these ditransitive constructions, arguments with the thematic role of goal or source may have Accusative case, along with a theme argument that also has Accusative marking.

- 1) a. They sent presents to the children. They sent the children presents.  
b. She fixed a sandwich for George. She fixed George a sandwich.

These "double object" constructions are usually thought of as syntactically derived. Early generative grammar assumed an optional transformation of "Dative Movement", whereby the goal argument is placed before the theme and loses its preposition. Relational grammar avoids the potential problem of two NPs with the same grammatical relation by the "Relational Annihilation Law", which puts the original direct object into a Chomeur relation. Lexical-Functional Grammar has a lexical rule that converts grammatical relations as follows:

- 2) ( OBJ ) ( OBJ 2 ) ( to OBJ ) ( OBJ )

The oblique goal (to OBJ) becomes the object, and the former object becomes the second object (OBJ 2). In each of these frameworks, the position adopted is that sentences with double ACC objects are derived constructions where some distortion of underlying syntactic form has occurred.

Across languages, we frequently see two types of constraints on Dative movement. In the first of these, as in English, the lexical entry of a verb must stipulate whether it allows both an ACC/DAT and an ACC/ACC argument array. Many English verbs do; some do not. 1

- 3) a. They communicated their concerns to the president.  
b. \*They communicated the president their concerns.

Generally, however, the English speaker can choose between the alternative construction types shown in (1), in accordance with discourse or pragmatic factors such as the relative prominence of the animate goal arguments.

In the second type of restriction upon Dative movement, there is a split across person or with respect to animacy in the distribution of ACC/ACC and ACC/DAT argument arrays, reflecting the greater prominence of animate goals. In Warlpiri, for example, first and second person goal arguments are always ACC, and third person goals are always DAT.

- 4) ngajulurlu karnangu karli0 yinyi nyuntuku  
IERG PRES1sNOM2sACC bommerangABS giveNONPAST youDAT  
I am giving you a boomerang.

- 5) ngajulurlu karnarla karli0 yinyi kurduku  
IERG PRES1sNOM3DAT boomerangABS giveNONPAST childDAT  
I am giving a boomerang to the child.



There is a case split in Warlpiri: the second position clitic sequence contains the obligatory pronominal arguments, with NOM/ACC case, while the optional nominal adjuncts have ERG/ABS case. Dative appears on both arguments and adjuncts. In (4), the second person goal clitic receives ACC case; and in (5), the third person clitic receives DAT case. The speaker cannot choose whether or not to apply goal advancement; this is determined by the person of the goal.<sup>2</sup> In the Salish languages, all animate goals are advanced to direct object status, and theme arguments are optional obliques; again, the speaker may not choose between alternative constructions.

Yaqui goal advancement. Yaqui is similar to English in that it is the verb, rather than the person or animacy of the goal argument, that determines the permitted argument array. But Yaqui differs from English in that the speaker has no options. Yaqui ditransitive verbs must be marked in the lexicon as to whether they have an ACC/ACC or an ACC/DAT case array.

6) 'aapo Huanta 'uka vacita miikak ACC/ACC he JohnACC DET:ACC cornACC  
givePERF He gave John the corn.

The order of the NP arguments in ACC/ACC constructions such as (6) is quite free; word order does not reflect grammatical relations. As seen elsewhere in UtoAztecan, ACC and POSS case on NPs coincide, while the contrast is present on pronouns.

7) 'aapo Huantau 'uka vacita nenkak ACC/DAT he JohnACCPOST DET:ACC  
cornACC sell=PERF He sold the corn to John.j

The oblique nominal in (7) has a postposition after the case marker ta. The postposition u (wi) is the most semantically neutral of the oblique markers, and I will identify the sequence tau as Dative here. Oblique pronominal arguments are inflected postpositions, as in (8).

8) 'aapo 'eu 'uka vacita nenkak ACC/DAT he you:DAT DET:ACC cornACC  
sell=PERF He sold the corn to you.

Other verbs that select an ACC/ACC argument array include:

9) 'aapo enci 'uka 'etehuita mahtak ACC/ACC he you:ACC DET:ACC storyACC  
teachPERF He taught you the story.

10) 'aapo enci 'uka kava'ita reuwak ACC/ACC he you:ACC DET:ACC horseACC  
borrowPERF He borrowed the horse from you.

11) 'aapo enci 'uka tomita 'u'aak ACC/ACC he you:ACC DET:ACC moneyACC take  
awayPERF He took the money away from you.

Verbs that select an ACC/DAT array include:

12) 'aapo 'eu 'uka toto'ita manak ACC/DAT he you:DAT DET:ACC chickenACC  
servePERF He served (the) chicken to you.

13) 'aapo 'eu 'uka vacita hinuk ACC/DAT he you:DAT DET:ACC cornACC  
buyPERF He bought the corn from you.

14) 'aapo 'uka laapista neu bwisek ACC/DAT he DET:ACC pencilACC me:DAT handPERF He handed the pencil to me.

15) 'inepo 'uka tomita Peotau nu'uka ACC/DAT I DET:ACC moneyACC PeteDAT getPERF I got the money from Pete.

The goal of this paper is to examine some syntactic properties of the ACC/ACC vs. the ACC/DAT constructions in Yaqui, and to consider the question of whether there is evidence for treating the ACC/ACC constructions as syntactically derived, even though there is no productive process of "Dative Movement". We will conclude that there is evidence in favor of such an analysis.

Arguments vs. Adjuncts. One syntactic feature in which these clause types differ is that of required constituents.

A. ACC/ACC arrays: both object arguments are required. j16) a. Huan Peota 'uka vacita miikak John PeteACC DET:ACC cornACC givePERF John gave Pete the corn.

b. \*Huan 'uka vacita miikak c. \*Huan Peota miikak

B. ACC/DAT arrays: the ACC argument is required, the DAT may not be.

17) a. Huan Peotau 'uka vacita nenkak John sold the corn to Pete.

b. Huan 'uka vacita nenkak c. \*Huan Peotau nenkak John sold the corn. For verbs with an ACC/DAT array, the ACC object is a required argument, while the DAT is often an optional adjunct. A few verbs such as toha "carry to" require both a theme and a goal (DAT) argument.

18) 'uka miisita=ne Mariatau tohak ACC/DAT DET:ACC catACC=I MaryDAT carryPERF I carried the cat to Mary.

The point is that all ACC nominals are obligatory arguments, while some DAT NPs are optional sentential adjuncts.

Passivization. These verbs classes also differ when Passive is applied, as follows.

A. ACC/ACC verbs: the ACC argument with the thematic role of goal becomes the subject.

19) Huan 'uka vacita miikwak John DET:ACC cornACC givePASSPERF John was given the corn.

Passives with the ACC theme argument as Subject are unacceptable, whether the goal remains ACC or is marked oblique:

20) a. \*'u vaci Huanta miikwak b. \*'u vaci Huantau miikwak

B. ACC/DAT verbs: the ACC theme argument becomes the Passive Subject.

21) 'u vaci Huantau nenkiwak The corn was sold to John.

The goal argument cannot be made Subject of the Passive; only ACC arguments can become Passive Subjects.

22) \*Huan 'uka vacita nenkiwak

We can note a parallel with English Passives here. Since (3b)j

above is not allowed, a corresponding Passive is excluded.

3b) \*They communicated the president their concerns.

3c) \*The president was communicated their concerns.

To summarize: with simple ditransitive verbs, Passive Subjects are as follows:

23) a.ACC/ACC verbs: ACC goal become Subject b.ACC/DAT verbs: ACC theme becomes Subject

c.Only one PASSIVE is allowed, since there is no choice between alternate case arrays for a given verb. Dative movement is not an "optional" and freely productive process.

Derived verbs. In the preceding examples we have seen a number\_of apparently simple or underived verbs in Yaqui that must be marked in the lexicon as to whether they select an ACC/ACC or an ACC/DAT case array. In addition, there are numerous constructions in which a derivational suffix increases the valence of the verb, adding an ACC argument. If the underived verb in these constructions was transitive or ditransitive, the derived construction may have more than one ACC argument. In this section we will compare the ACC/ACC verbs without a valencechanging derivational suffix to verbs that are clearly morphologically derived, to see what evidence there may be for treating the former as syntactically derived. With one exception, the derivational suffixes add a new NOM subject, and the "old" or embedded Subject now receives ACC case.

24) Huan bwiika 25) Peo Huanta bwiik'ii'aa John sing Pete JohnACC  
singDESIDERATIVE John is singing. Pete wants John to sing.

With a transitive verb, ACC/ACC arrays appear in the derived construction.

26) Huan Peota vepsuk John PeteACC beatCOMPLETIVEPERF John beat up Pete.

27) 'empo Huanta 'uka Peota vepsusaen you JohnACC DET:ACC PeteACC  
beatCOMPLDIRECTIVEPAST You told John to beat up Pete.

When the underived verb is ditransitive, ACC/ACC/ACC arrays can appear.

28) Peo Huanta 'uka Hoseta 'uka vacita miiktuak Pete JohnACC DET:ACC JoeACC  
DET:ACC cornACC giveCAUSPERF Pete made John give the corn to Joe.j The second and any succeeding ACC NP arguments sound better with an ACC determiner; the determiners rule out any gardenpath misinterpretations in which ta is initially taken to mark a Possessor. In addition to the Desiderative suffix 'ii'aa, the Causative tua and the Directive sae, other derivational suffixes that add a new subject include the Quotative tia and the Indirect Causative tevo, (Jelinek and Escalante 1986). There is also an Applicative suffix. The Applicative does not add a new subject; it adds an argument with the thematic role of Benefactee, that receives ACC case:

29) Maria Huanta bwiikriak Mary JohnACC singAPPLICATIVEPERF Mary sang for John.

When the verb is transitive, the Applicative produces an ACC/ACC array;

30) 'aapo 'uka kava'ita 'etbwak he DET:ACC horseACC stealPERF He stole the horse.

31) 'aapo 'uka kava'ita nee 'etbwariak he DET:ACC horseACC me:ACC  
stealAPPLICATIVEPAST He stole the horse from ("off") me.

Example (31) shows that the Applicative, as in often the case across languages, can mark a participant that is disadvantaged by, as well as one that is advantaged by, some event. Triple ACC arrays can be produced at times by adding two derivational suffixes;

32) nee Peota 'uka Hoseta 'au vektatuaesaen I PeteACC DET:ACC JoeACC self  
shaveCAUSDIRECTPAST I told Pete to make Joe shave himself.

With derived verbs, a new ACC argument always appears, whether it is the "old" subject or the Applicative argument. When the Passive suffix is added, it subtracts an argument. Passive takes away a "new" subject, allowing the "old" subject to resurface.

33) a. Peo bwiikak Intransitive Pete singPERF  
Pete sang.

- b. Huan Peota bwiiktuak +Causative John PeteACC  
singCAUSPERF John made Pete sing.
- c. Peo bwiiktuawak +Passive Pete singCAUSPASSPERF  
Pete was made to sing.
- 34) a. Peo Huanta coconak Transitive Pete JohnACC punchPERFj  
Pete punched John.
- b. 'empo Peota 'uka Huanta coconsaen +Directive you PeteACC DET:ACC  
JohnACC punchDIRPAST You told Pete to punch John.
- c. Peo Huanta coconsaewak +Passive Pete JohnACC  
punchDIRPASSPERF Pete was told to punch John.

When Passive follows an Applicative suffix, the new APP argument becomes the Subject of the Passive sentence.

- 35) a. Peo 'uka tomita 'etbwak Transitive Pete DET:ACC moneyACC  
stealPERF Pete stole the money.
- b. Peo 'uka tomita nee 'etbwariak +Applicative Pete DET:ACC moneyACC me:ACC  
stealAPPPERF Pete stole the money off me.
- c. 'inipo 'uka tomita 'etbwariawak +Passive I DET:ACC moneyACC  
stealAPPPASSPERF I had the money stolen from me.

While the theme argument is the Subject of a Passive formed from a simple transitive, the theme argument cannot be the Subject of a Passive with an Applicative argument.

- 36) a. 'u tomi 'etbwawak DET money stealPASSPERF The money was stolen.
- b. \*'u tomi nee 'etbwariawak DET money me:ACC stealAPPPASSPERF The following chart shows the double object constructions according to verb type, required arguments, and how Passivization applies.

| Table 1                                     | Active                                       | Passive | argument array      | argument array |
|---------------------------------------------|----------------------------------------------|---------|---------------------|----------------|
| Remarks                                     |                                              |         | <u>Simple verbs</u> |                |
| a. NOM ACC ACC NOM ACC                      | <u>goal</u> becomes Subject; agent theme     | goal    | goal                | theme          |
| <u>theme</u> argument required              |                                              |         |                     |                |
| b. NOM ACC DAT NOM DAT                      | <u>theme</u> becomes Subject; agent theme    | goal    | theme               | goal           |
| <u>goal</u> is "optional"                   |                                              |         |                     |                |
| <u>Derived verbs</u> a. NOM ACC ACC NOM ACC | "old" agent resurfaces                       | agent   | agent               |                |
| theme agent theme as Passive Subject        |                                              |         |                     |                |
| b. NOM ACC ACC NOM ACC                      | <u>Applicative</u> is Subject; a agent theme | App     | App                 |                |
| theme <u>theme</u> argument is ACC          |                                              |         |                     |                |

( ) = optional adjunct; = argument added by the derivational suffix

Table 1 shows that the "simple" ACC/ACC verbs resemble the Applicative constructions in that the nontheme argument with ACC case becomes the Passive Subject. In both the morphologically and syntactically derived double ACC constructions, it is a nontheme oblique element that becomes an obligatory ACC argument. Finally, we want to point out an interesting pair of constructions with the verb yica "see" plus the Causative suffix. As in many languages, this form has the meaning "show".

- 37) 'aapo nee 'uka kava'ita vittuak ACC/ACC he me:ACC DET:ACC horseACC  
seeCAUSATIVEPERF He showed me the horse.
- Now it is also possible to use vittua with an oblique goal argument:
- 38) 'aapo neu 'uka kava'tta vittuak ACC/DAT he me:DAT DET:ACC horseACC  
seeCAUSATIVEPERF He sent me the horse.

We conclude that in view of the contrasting glosses, we are dealing with two derived verbs here, instead of the alternative ACC/ACC and ACC/DAT arrays seen in "Dative Movement" in English. Furthermore, it is interesting that what is happening here is the reverse of goal advancement. The Causative elsewhere always produces a new ACC argument, the "old" or

semantically embedded subject of the underived verb. Here, the Causative is producing a DAT argument rather than the expected ACC one, as in (37). In (38), an oblique argument corresponds to the direct argument seen in (37).

It should be noted here also that although the class of double ACC verbs in Yaqui is small, that the presence of such constructions is apparently an old and widespread feature of UtoAztecan. Givon (1980) lists a class of verbs of this type in Ute, including verbs meaning "give", "tell", and "show". Steele (in press) identifies verbs of this kind in Luisen~o.

Conclusions. The various theoretical frameworks that were compared with respect to this problem of analysis at the beginning of this paper are unanimous in outlawing sentences where two direct arguments have the same grammatical relation. Furthermore, it is clear that the two ACC marked objects of Yaqui verbs like miika "give" or 'u'aa "take away" do not have the same grammatical relation; the syntax of these two arguments is not the same. Only the ACC argument with the thematic role of goal can become the Passive Subject. We cannot distinguish formally between the two objects on the basisj

of word order, as we can in English; we have to refer to the thematic role of the argument. We have a choice: we can either take the position that Yaqui has some strange verbs with two direct arguments marked the same that really aren't the same, or we can assimilate these facts to the widely known phenomena that have been called "Dative Movement". The second alternative seems to be more useful in an attempt to develop a unified theory of language. The discourse function of this so-called "movement" is to give prominence to human, animate goals over inanimate themes. In languages like English that have a productive syntactic process of this kind we see ACC/ACC constructions that correspond to the Yaqui ones, and behave just the same way with regard to Passivization. In many languages, Dative and Benefactive are the same, pointing up the parallels between the double ACC and the morphologically derived Applicative construction in Yaqui.

A theory of grammar that recognizes both a level of thematic or semantic structure and a level of syntactic structure, and provides for more than one kind of mapping between these structures, seems to give us the best way of relating the Yaqui double ACC constructions in other languages. In Active constructions, agents are mapped into Subjects; in their corresponding Passives, patients are mapped into Subjects. In goal advancement, goals are mapped to ACC objects rather than to obliques. Nonstandard mappings between thematic role and grammatical relation are described as involving "movement". The notion of movement is an adequate metaphor for a language like English, where the speaker can ordinarily choose between constructions with or without goal advancement. But for languages like Warlibiri and Yaqui, where the assumed underlying syntactic structures are grammatical, speaking of different mappings between thematic role and grammatical relation is clearly preferable. An analogue of "move" is proposed here; a syntactic process of "reassign" would apply to nonstandard mappings between thematic role and case assignment in Yaqui, Warlpiri, and English as well.

**III.2 Jelinek, Eloise (1998) Voice and transitivity as functional projections in Yaqui.** In Miriam Butt and Wilhelm Geuder (eds) *The projection of arguments: Lexical and compositional factors*. Stanford: CSLI Productions. Pp 195-225.

This paper expands on a notion introduced by Grimshaw (1990) and Hale & Keyser (1993) in which argument structure itself is a structured domain, not merely a collection of features. Jelinek argues that the Inflectional component (INFL) of Universal Grammar is where argument structure is established. Arguments are introduced at various heads structurally beneath INFL. These arguments must agree with the entailments that go hand in hand with “thematic proto-roles”, as defined by Dowty (1989, 1991). The array of arguments selected for in the INFL complex must agree with these entailments, or a crashed derivation results. Jelinek looks at data from Yaqui, which has “strong” (i.e., overt in the syntax) heads for VOICE and TRANSITIVITY that introduce arguments in certain clause types. She concludes by establishing that the configuration of functional projections establishes the voice and valence of clauses in Yaqui, and that parametric settings make it possible for certain projections to be “strong” in some languages, and “weak” in others.

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# Voice and Transitivity as Functional Projections in Yaqui

ELOISE JELINEK

## 1 Introduction

The domain of sentence structure where languages show the greatest parametric difference is the inflectional component of the clause. Emmon Bach (1967) argued that the syntax of auxiliaries must be stipulated for particular languages, since their behavior does not follow from the general principles that apply to basic predicate argument structures. Across languages, we see INFL projections where various sentence operators are marked, including Mood, Modality, Tense, Aspect, and Negation. The overt elements present in INFL in particular languages include auxiliary or “light” verbs, “adverbial” particles, and clitic pronouns; in many languages we see these elements as components of a second position clitic string (Hale 1973).

A major part of current syntactic research is concerned with these functional heads or “light verbs” associated with argument structure in universal grammar (Chomsky 1991, 1992). Bobaljik (1995) shows that there is cross-language variation in the inventory of functional heads that are overtly marked in INFL. Jelinek (1995b) argues that

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languages select from a universally available set of functional heads to grammaticalize in INFL, and that these "strong" INFL projections may be separate words or clitics, or may be morphologically incorporated into the verb. There are various entailments among particular values of these INFL features, between Voice, Tense/Aspect, and Transitivity, for example, and languages elect to mark overtly some combination of these features in particular functional projections.

Grimshaw (1990), Hale and Keyser (1993), and Jelinek (1995b) argue that argument structure is in itself a structured domain, not merely a collection of features. Grimshaw draws attention to the numerous universal constraints on argument structure, and observes: "...the position taken in earlier work, that the lexicon is idiosyncratic and is acquired piece by piece, simply cannot be maintained. It fails to explain the high degree of regularity of the lexical system as well as how children come to acquire lexical information". Grimshaw argues for universal thematic and prominence hierarchies that determine argument structure. Hale and Keyser argue that argument structure is a syntactic domain, a collection of Lexical Relational Structure (LRS) representations.

On the analysis proposed here, the INFL component of the clause in universal grammar is the domain where argument structure is selected. Arguments are introduced at INFL heads, and the argument array selected must be compatible with the lexical semantics of the verb. Dowty (1989, 1991) identifies the basic "thematic proto-roles" that are manifested across languages, and claims that lexical meaning is best captured by entailments. The verb has certain entailments concerning compatible argument structure, established by the lexical semantic structure of the verb, or the level of Lexical Conceptual structure as defined by Hale and Keyser (1987). The compositional argument array selected in INFL must be consistent with these entailments, or the derivation fails.

The goal of this paper is to provide a compositional view of argument structure in the Uto-Aztecan language Yaqui, spoken in Arizona and northern Sonora. Yaqui has "strong" Inflectional heads marking VOICE and TRANSITIVITY, that are independent of the lexical head of the clause, and introduce arguments in particular construction types. The dependency between the distribution of these inflectional heads and the Stage vs. Individual Level contrast in predicate types will be shown.

## 2 Yaqui clause structure

Yaqui is an SOV language that is rich in verbal inflection. There is no Subject agreement. There are no free-standing auxiliary verbs. There is verbal compounding, and "center embedding." The copula is suffixed to nouns and adjectives to derive a complex predicate; it is null in present tense non-modal sentences.

### (1) Predicate noun

- |                   |                        |
|-------------------|------------------------|
| a. 'aapo ya'ut    | b. 'aapo ya'ut-tu-ne   |
| he leader         | he leader-BE-FUT       |
| 'He is a leader.' | 'He will be a leader.' |

### (2) Predicate Adjective

- |                |                         |
|----------------|-------------------------|
| a. 'aapo tu'ii | b. 'aapo tu'ii-tu-machi |
| he good        | he good-BE-MODAL        |
| 'He is good.'  | 'He should be good.'    |

### (3) Verbal sentence

- |                   |                      |
|-------------------|----------------------|
| a. 'aapo bwiik-ne | b. 'aapo bwiik-machi |
| he sing-FUT       | he sing-MODAL        |
| 'He will sing.'   | 'He should sing.'    |

These examples show Inflectional suffixes that follow the verb to derive finite sentences. This set of suffixes includes the copula, and elements that mark Modality, Voice, and Tense/Aspect; the latter two features are frequently marked in "portmanteau" elements in Yaqui.

### 2.1 The overt marking of Transitivity in Yaqui

In Yaqui, as in some other Native American languages, the valence of the clause is overtly marked in a projection  $\pm$  TRANSITIVE. There are verb doublets where a Transitive verb has the suffix *-ta*, while a corresponding Intransitive ends with *-te*. Some Intransitive verbs marked with *-te* are Unergatives, while others are Unaccusatives (Perlmutter 1978).

#### (4) Transitive/Unergative pairs:

| Transitive                     | Unergative               |
|--------------------------------|--------------------------|
| <i>chep-ta</i> 'step on x'     | <i>chep-te</i> 'jump'    |
| <i>'om-ta</i> 'anger x'        | <i>'om-te</i> 'be angry' |
| <i>noi-ta</i> 'take/bring x'   | <i>noi-te</i> 'go/come'  |
| <i>vehuk-ta</i> 'duck under x' | <i>vehuk-te</i> 'bow'    |

The Subjects of these Unergatives are either Agents or Experiencers.

## (5) Transitive/Unaccusative pairs:

| Transitive    |           | Unaccusative  |                |
|---------------|-----------|---------------|----------------|
| <i>vee-ta</i> | 'burn x'  | <i>vee-te</i> | 'burn'         |
| <i>kot-ta</i> | 'break x' | <i>kot-te</i> | 'break'        |
| <i>yook-a</i> | 'color x' | <i>yook-e</i> | 'change color' |
| <i>sip-a</i>  | 'cool x'  | <i>sip-e</i>  | 'become cool'  |

The subjects of these Unaccusatives are Patients. While the valence contrast is typically marked with *-ta* vs. *-te*, some verb pairs differ only in the final vowel, where the verb ending in *-a* is Transitive and the verb ending in *-e* is an Unaccusative. Many Yaqui verbs do not occur with a final vowel marking valence overtly in this way. For example, there is intransitive *bwiika* 'sing', and transitive *bwise* 'grab'. I assume that verbs of this type have abstract valence marking, since Yaqui verbs are always strictly either Transitive or Intransitive. In contrast, valence in English is always a "weak" feature, and there are many "bivalent" verbs.

## 2.2 Voice and the Theta Role of the Subject

Voice contrasts are marked in Yaqui in an overt functional head, providing a level of structure where subjects are licensed. I follow Kratzer (1994, 1996) who argues against designating subjects "external" arguments; in Kratzer's view, arguments are universally introduced by heads, not by phrases, and the arguments of a head fall within its projection. "External" arguments are added by a neo-Davidsonian secondary predication; that is, they are introduced by a functional head. Kratzer proposes that the functional projection where the subject argument is introduced be identified as VOICE, and that VOICE both assigns a theta-role to the "external" subject, and is responsible for assigning Accusative (or "internal") case to the "internal" argument, which it c-commands.<sup>1</sup>

Yaqui has both a Passive and a very productive Impersonal Passive. In an Impersonal Passive, less commonly seen across languages, an *intransitive* verb occurs with Passive morphology, producing a sentence where there are no direct NP arguments. Example (6b) is an ordinary Passive, and (7b) is an Impersonal; both include the Passive suffix *-wa*, and lack the referential Agent argument seen in the corresponding Active sentences, (6a, 7a).<sup>2</sup>

<sup>1</sup>See Ramchand (this volume) for an alternative proposal; Ramchand identifies ASPECT as the INFL projection where argument structure is determined.

<sup>2</sup>The suffix *-wa* regularly causes a preceding front vowel to raise.

- (6) a. 'ume 'o'ow-im 'uka maaso-ta me'-a-k  
 DET:PL man-PL DET:ACC deer-ACC kill-TR-PERF  
 'The men killed the deer.'
- b. 'u maaso me'-a-wa-k  
 DET deer kill-TR-PASS-PERF  
 'The deer was killed.' (Passive)
- (7) a. 'ume 'o'ow-im pahko-po ye'-e-ka  
 DET:PL man-PL ceremony-PP dance-INTR-PERF  
 'The men danced at the ceremony.'
- b. pahko-po yi'-i-wa-k  
 ceremony-PP dance-INTR-PASS-PERF  
 'People danced/there was dancing at the ceremony.'  
 (Impersonal)

In (6a) the object NP has ACC case. Unlike a Passive derived from a transitive construction, the Impersonal has no Patient argument to raise to subject, and (7b) has no overt (direct) arguments.

In some languages, Impersonals have a pleonastic subject, as in the following Dutch example (Annie Zaenen, p.c.).

- (8) Hier werd er veel geschaatst  
 here was it much skated  
 'There was a lot of (ice) skating here.'

It is possible to add an oblique agent phrase to an Impersonal construction (Perlmutter 1978):

- (9) Er werd veel geschaatst door de kinderen  
 it was much skated by the children  
 'There was a lot of (ice) skating by the children.'

Escalante (1990a,b) shows that Yaqui Passive constructions exclude oblique agents; this applies to the Impersonal Passives as well.

In Yaqui, for both transitive and intransitive verbs, we can predict whether or not a verb can occur with Passive *-wa* on the basis of the lexical semantic features of the verb; verbs that are compatible with an Active argument are also compatible with *-wa*. This suffix excludes a referential Agent in the overt syntax, and provides an interpretation of the sentence that includes an "implicit" non-referential Agent (Williams 1987). Transitive subjects are primarily Agents, as in example (6a) above, and in (10a).

- (10) a. 'aapo 'uka kari-ta vee-ta-k  
 he DET:ACC house-ACC burn-TR-PERF  
 'He burned the house.' (Agent subject)

- b. 'u kari vee-ta-wa-k  
 DET house burn-TR-PASS-PERF  
 'The house was burned.' (Patient Subject)

Many languages also permit Experiencer subjects, in transitive "psych" constructions, while other languages require "Dative subjects" or oblique Experiencers, for psych predicates. In languages that allow transitive psych verbs, these verbs generally permit Passive. A Transitive psych verb in Yaqui is shown in Example (11).

- (11) a. 'aapo bwa'am-ta waa-ta  
 he food-ACC want-TR  
 'He wants food.' (Experiencer subject)  
 b. 'u bwa'am kaa waa-ta-wa  
 DET food NEG want-TR-PASS  
 'The food is not wanted.' (Passive)

Across languages, possessive sentences typically exclude the Passive. Compare (12) and the Yaqui verb *hipue* 'have' in (13).

- (12) a. George has a book  
 b. \* A book is had by George  
 (13) a. 'aapo tomi-ta hipue  
 he money-ACC has-[TR]  
 'He has money.'  
 b. 'u tomi kari-po hipu'-wa  
 DET money house-PP has-[TR]-PASS  
 'The money is kept at home.'

In (13b), with an added locative expression, we see that the verb *hipue* receives a more agentive reading, 'to keep in a place'. Kratzer (1994) proposes a very general theta role "Holder" for the Active subjects of certain transitives. Verbs like *hipue* on its agentive 'keep' reading appear to belong to this class, with a more volitional character than simple possession. Active theta roles, then, are Agents, and less commonly, Experiencers and "Holders".

In Impersonal constructions in Yaqui, Passive *-wa* occurs with just those intransitive verbs whose animate subjects have Active theta roles, as in (14). These are the Unergatives.

- (14) a. kaa yi'-i-wa  
 NEG dance-INTR-PASS  
 'No dancing is going on.' (Agent subject)  
 b. ne-u 'om-ti-wa  
 1s-DAT angry-INTR-PASS  
 'There are (people) mad at me.' (Experiencer subject)

Unaccusative verbs have a single argument with a Patient theta role, and cannot occur with Passive *-wa*. In (8) we saw a Transitive verb and a corresponding Passive. Example (15) shows the related Unaccusative, that excludes Passive; the subject has an Affected theta role.

- (15) a. 'u kari vee-te  
 DET house burn-INTR  
 'The house is burning.' (Unaccusative)
- b. \* vee-ti-wa  
 burn-INTR-PASS  
 [\* There is something burning] (*-wa* excluded)

The examples in (16, 17) show the same contrasts.

- (16) a. 'aapo 'uka kuta-ta kot-ta-k  
 he DET:ACC stick-ACC break-TR-PERF  
 'He broke the stick.' (Transitive)
- b. 'u kuta kot-ta-wa-k  
 DET stick break-TR-PASS-PERF  
 'The stick was broken.' (Passive)
- (17) a. 'u kuta kot-te  
 DET stick break-INTR  
 'The stick is breaking.' (Unaccusative)
- b. \* kot-ti-wa  
 break-INTR-PASS  
 [\* there is something breaking] (*-wa* excluded)

The class of Unaccusatives varies somewhat across languages (Levin and Rappoport 1989). This variability may depend upon whether the Aktionsart of the verb in the language in question is compatible with the Affected theta role assigned to the Subject. Many languages (for example, German, Italian) group verbs of motion with Unaccusatives; others do not. Yaqui belongs to the latter group, and distinguishes the class of volitional motion verbs with Active animate subjects as Unergatives that permit *-wa*.

- (18) a. 'ume ha'amuch-im yaha  
 DET:PL woman-PL arrive-[INTR]  
 'The women are arriving.'
- b. 'aman yahi-wa  
 there arrive-[INTR]-PASS  
 '(People/they) are arriving there.'

Weather and temporal verbs exclude *-wa*; they exclude overt arguments at both the Active and Affected projections.



- b. \* bwase'-i-wa 'ume 'ilii 'uusi-m  
 cook-INTR-PASS DET:PL little child-PL  
 hi'bwa-tua-vetchi'ivo  
 eat-CAUS-FOR  
 [\* It is cooking to feed the children]

Passive psych verb constructions do not license purpose clauses, in English or Yaqui.

- (26) \* 'empo tu'uri-wa kaaro-ta 'e-u nenki-vetchi'ivo  
 you like-[TR]-PASS car-ACC 2s-DAT sell-[TR]-for  
 [\* You are liked to sell you a car]

While Yaqui transitive "psych" verbs allow Passive, the constraint on purpose clauses is narrower. Only those verbs that are compatible with volitional Agents license purpose clauses.

We have seen that Unergatives and Unaccusatives differ in 1) permitting the derivation of an Impersonal Passive, and 2) in licensing purpose clauses, since Unergatives have active subjects, and Unaccusatives do not. A third syntactic difference between these Intransitive construction types is the licensing of Applicative arguments. The Yaqui Applicative suffix *-ria* is a Transitivity marker that introduces an ACC marked NP argument, and is compatible only with Active subjects (Transitive or Unergative). Benefactives, like Purpose clauses, require volitional Agents, as in (27a). The derivation in (27b) fails.

- (27) a. 'inepo Maria-ta yi'-i-ria-k  
 I Mary-ACC dance-INTR-APPL-PERF  
 'I danced for Mary.'  
 b. \* 'u taasa Maria-ta ham-te-ria-k  
 DET cup Mary-ACC break-INTR-APPL-PERF  
 [\* The cup broke for Mary]

#### 2.4 Stage and Individual Level Predicates

Carlson (1977) and Kratzer (1989) develop an analysis of the syntax and semantics of Stage vs. Individual Level predicates. Informally, Stage Level predicates refer to properties that are "temporally or spatially bounded", while Individual Level predicates refer to properties that are more permanent traits of the individuals they are true of. Examples of the contrast:

- (28) a. Stage Level: Curtis is late/studying.  
 b. Individual Level: Curtis is tall/resourceful.

This contrast in predicate type has numerous and important syntactic reflexes. According to Kratzer, Stage Level predicates include a "Davidsonian" Event argument, while Individual Level predicates do



not. It is the Event argument that provides for the spatio-temporal boundedness of the Stage Level predicate. What is relevant for our purposes is that Active subjects presuppose events, and thus we can predict that transitives will be Stage Level. Compare:

- (29) a. The cat is chasing the mice. (Stage level; Event)  
 b. The cat is black. (Individual Level)
- (30) a. 'u miisi chikul-ta 'aamu  
 DET cat mouse-ACC stalk-[TR]  
 'The cat is stalking a mouse.'  
 b. 'u miisi chukui  
 DET cat black  
 'The cat is black.'

However, Events do not presuppose Agents or Experiencers. Weather verbs are Stage Level, referring to events; but they exclude Passive, as we saw in (17). They are not compatible with Active arguments, and the derivation fails.

The Individual Level predicates we have seen so far are nouns or adjectives, do not refer to events, and exclude Passive. The Yaqui verbs that we have considered are all Stage Level predicates that include Event arguments. We have seen that a subset of these exclude Passive, because their subjects fail to have the right kind of "Active" theta role (Unaccusatives), or have no theta role at all, like the weather/temporal verbs and "raising" verbs such as *vena* 'seem'. Diesing (1992) proposes that the subjects of Individual Level predicates have only a very general theta role such as "having the quality of". Individual Level predicates are not compatible with an Active theta role, and exclude the Passive.<sup>3</sup>

## 2.5 Raising to Subject

The trees shown in (31, 32) illustrate the syntactic structures proposed for Yaqui Active, Passive, Unergative and Impersonal clauses. In the Transitive construction (31a), the Active argument is introduced at VOICE, and raises to subject, [Spec, Asp]. The Patient argument is introduced at TRANS, and gets ACC case. In the Passive construction (31b), *-wa* excludes a referential Active argument at VOICE; the Patient argument does not receive ACC case and raises on up to [Spec, Asp].

<sup>3</sup>The event argument of a Stage Level predicate can be bound by a generic operator, in stating an attribute of a type as an individual.

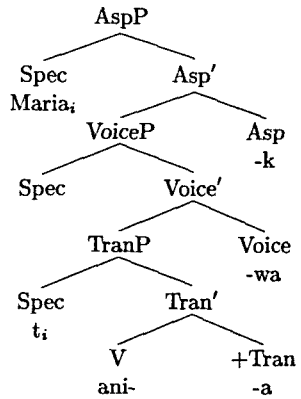
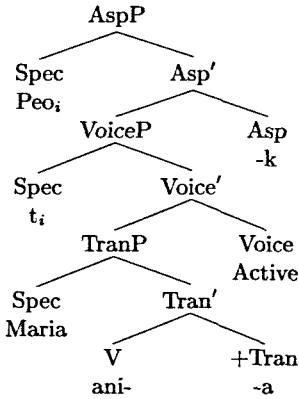
i) Cats chase mice.

ii) Mice are chased by cats.

Modal, aspectual and tense operators can introduce parallel changes in the interpretation of predicates as Stage vs. Individual level.

(31) a. Transitive Active clause

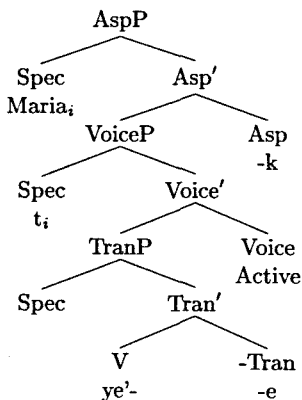
b. Passive



- a. Peo Maria-ta 'ani-a-k  
 Peo Mary-ACC help-TR-PERF  
 'Pete helped Mary.'
- b. Maria 'ani-a-wa-k  
 Mary help-TR-PASS-PERF  
 'Mary was helped.'

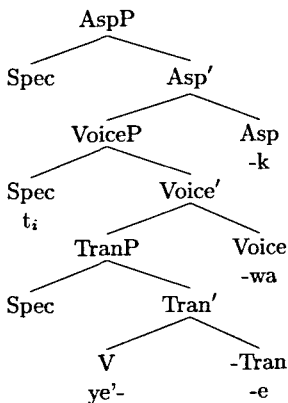
The Unergative in (32a) shows an Active argument introduced at VOICE, which raises to subject at [Spec, Asp]. No argument is introduced at TRANSITIVE. In the Impersonal Passive in (32b), *-wa* excludes a referential Active argument. Spec-to-Spec movement is on the left side of the tree, and head-to-head movement (not shown) is on the right.

## (32) a. Unergative clause



- a. Maria ye'e-ka  
 Mary dance-INTR-PERF  
 'Mary danced.'

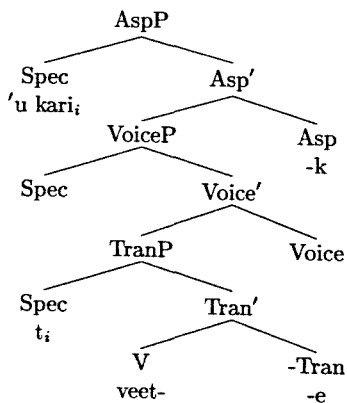
## b. Impersonal



- b. yi'-i-wa-k  
 dance-INTR-PASS-PERF  
 'There was dancing.'

Example (33) shows an Unaccusative; Passive cannot apply, since no Active argument is introduced at VOICE. The Patient raises to [Spec, Asp].

## (33) Unaccusative clause



- 'u kari veet-e-k  
 DET house burn-INTR-PERF  
 'The house burned.'

In languages with an overt  $\pm$ TRANSITIVE projection where valence is marked, valence is not a subcategorizational feature of verbs, and the projection where "internal" arguments are introduced and assigned an inactive theta role corresponds to VP. There may be more than one  $\pm$ TRANSITIVE projection, more VP levels, as shown in Section 3.

In sum: Arguments are introduced at either VOICE or TRANSITIVE, and the highest argument on the tree receives default case. Arguments lower in the tree receive ACC or structural case from the functional projection that dominates them. We can predict whether or not Passive can apply in a particular construction in Yaqui on the basis of whether or not it is compatible with an Active argument at the Voice projection. For a majority of the world's languages, Passive can bind an Active argument introduced by VOICE, only if there is also an Affected argument that can raise to a Specifier position where the subject appears. In the minority of languages with an Impersonal Passive, Passive can apply where no Affected argument has been introduced at TRANSITIVE, as long as an Active argument is licensed at VOICE.

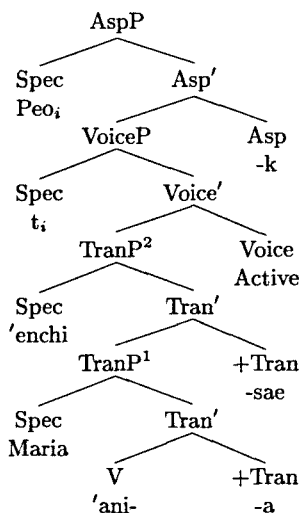
### 3 Other Transitivizers

There are other verbal suffixes that increase the valence of the clause by adding a new argument projection. The Desiderative adds an Experiencer; the Directive and Causative add Agents.

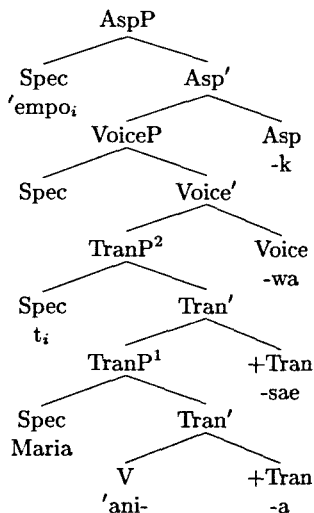
- (34) a. Maria bwiika-k  
 Mary sing-INTR-PERF  
 'Mary sang.'
- b. 'aapo Maria-ta bwiik-'ii'aa-k  
 he Mary-ACC sing-DESIDERATIVE-PERF  
 'He wanted Mary to sing.'
- c. 'aapo Maria-ta bwiik-sae-k  
 he Mary-ACC sing-DIR-PERF  
 'He told Mary to sing.'
- d. 'aapo Maria-ta bwiik-tua-k  
 he Mary-ACC sing-CAUS-PERF  
 'He made Mary sing.'

These added Active arguments appear at the Voice projection, in alternation with the Passive, producing a configuration in which the "old" Active argument receives ACC case. The Desiderative, Directive and Causative must overlie an Active argument (Transitive or Unergative subject, not an Unaccusative), which becomes Affected.

## (35) a. Directive



## b. Directive + Passive



a. Peo 'enchi Maria-ta 'ani-a-sae-k  
 Peo you-ACC Mary-ACC help-TR-DIR-PERF  
 'Pete told you to help Mary.'

b. 'empo Maria-ta 'ani-a-sae-wa-k  
 you Mary-ACC help-TR-DIR-PASS-PERF  
 'You were told to help Mary.'

This configuration produces an iteration of transitivity projections.<sup>4</sup> In (35b), Passive *-wa* excludes a referential argument at VOICE; the Affected argument immediately below VOICE raises to [Spec, Asp].

Yaqui has ditransitive constructions with a Dative and an Accusative argument, as shown in Example (36).

(36) a. 'aapo 'uka vachi-ta Peo-tau nenk-a-k  
 he DET:ACC corn-ACC Pete-DAT sell-TR-PERF  
 'He sold the corn to Pete.'

b. 'u vachi Peo-tau nenk-i-wa-k  
 DET corn Pete-DAT sell-TR-PERF  
 'The corn was sold to Pete.'

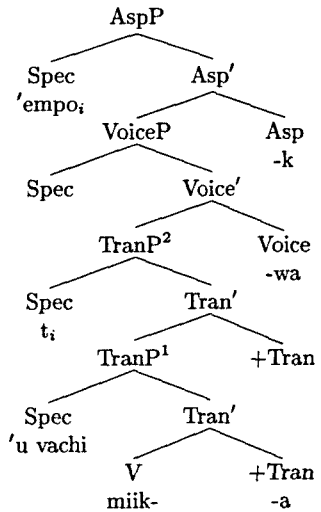
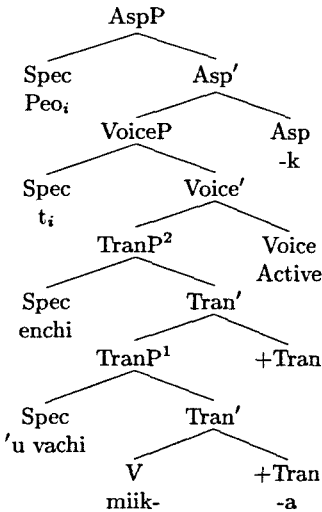
Dative case is never grammaticalized. "Dative movement" is not permitted in (36); that is, the goal argument of this verb cannot receive

<sup>4</sup>See Sityar (1995) for an analysis of Cebuano that includes a Voice projection and the iteration of Transitive projections

ACC case. In addition to these ACC DAT constructions, Yaqui has a small class of ditransitive verbs that select two Accusative arguments. These verbs require animate goal arguments, that are affected by the event described. This is not a case of “Dative Movement” in the syntax, since these verbs are ungrammatical with oblique Dative arguments.

(37) a. Double Accusative

b. Double ACC + Passive



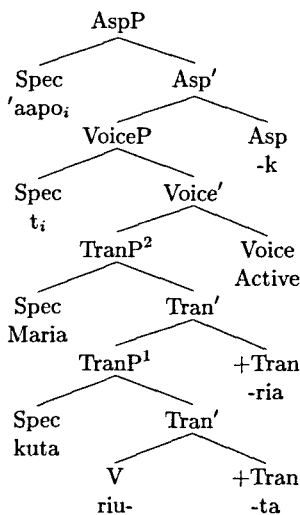
a. Peo enchi 'uka vachi-ta miik-a-k  
 Peo you-ACC DET:ACC corn-ACC give-TR-TR-PERF  
 'Pete gave you the corn.'

b. 'empo 'uka vachi-ta miik-wa-k  
 you DET:ACC corn-ACC give-TR-PASS-PERF  
 'You were given the corn.'

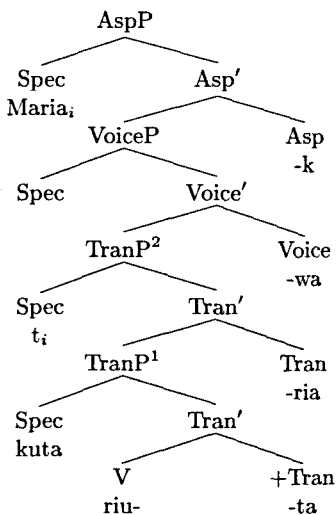
For the “Double Accusatives”, I assume a second, abstract Transitivity that introduces the second object, the Goal. These ACC NPs, like the DAT and ACC arguments in (37), can be scrambled in the phonological component, since the requirement that the goal be animate usually excludes ambiguity. However, it is clear that the underlying order puts the Goal above the Patient/Theme, since it is the Goal argument that raises to Subject when a referential Agent is excluded by Passive *-wa*; compare (38b) and (39b). Each Transitivity element adds a layer of structure, and assigns ACC case to the Specifier position it dominates. The verb *miika* is used in cultural contexts when things

(usually food) are given “with good heart”, implying a special relationship between giver and recipient. This recipient is affected in a way that the goal argument in (37) is not. Other verbs in the small closed class of Double Accusatives appear to have similar semantic properties (Jelinek and Escalante 1987). There is an Applicative suffix that adds a Benefactee argument. When Passive follows the Applicative, it is the Benefactee that raises to Subject. This is the case whether the sentence is underlyingly transitive or intransitive.

(38) a. Applicative clause



b. Applicative + Passive



a. 'aapo Maria-ta 'uka kuta-ta riu-ta-ria-k  
 he Mary-ACC DET:ACC wood-ACC split-TR-APPL-PERF  
 'He split the wood for Mary.'

b. Maria 'uka kuta-ta riu-ta-ria-wa-k  
 Mary DET:ACC wood-ACC split-TR-APPL-PASS-PERF  
 'Mary had the wood split for her.'

This example shows that the Applicative transitivity projection lies above the projection where Patients are introduced.<sup>5</sup> In (38a), VOICE introduces an active argument, and assigns ACC case to the Benefactee introduced by the Applicative. In (38b), Passive excludes a referential active argument, and the Benefactee raises to subject. As with the other transitivity projections, only verbs that are compatible with

<sup>5</sup>The gloss for (38b) is inadequate; this is not a causative construction.

Active arguments (Transitives or Unergatives) can add Benefactees, since Applicatives, like Purpose clauses, require volitional Agents. As in (27b) above, the Applicative is excluded in (39), an Unaccusative.

- (39) \* 'u kuta Maria-ta riu-te-ria-k  
 DET wood Maria-ACC split-INTR-APPL-PERF  
 'The wood split for Mary.'

The Applicative suffix immediately follows the  $\pm$  Transitive projection, and lies below any other transitivizing suffixes.

- (40) a. Peo 'apo'ik Maria-ta bwiik-ria-sae-n  
 Pete 3sACC Maria-ACC sing-[INTR]-APPL-DIR-PAST  
 'Pete told him to sing for Mary.'  
 b. 'aapo Maria-ta bwiik-ria-sae-wa-n  
 3sNOM Maria-ACC sing-[INTR]-APPL-DIR-PASS-PAST  
 'He was told to sing for Mary.'

The reverse order of these projections, Directive followed by Applicative, is excluded:

- (41) \* Peo 'apo'ik Maria-ta bwiik-sae-ria-n  
 Pete 3sACC Maria-ACC sing-[INTR]-DIR-APPL-PAST

The argument introduced by the Applicative is Affected, and presupposes an Active argument at VOICE; it can raise to Subject only if Passive applies, providing existential closure over a non-referential Agent.

#### 4 Transitivity in Yaqui Possessive sentences

Another interesting typological property of Yaqui and some other Uto-Aztecan languages is the presence of "bahuvrihi" Possessive sentences. The term "bahuvrihi" is from Sanskrit grammar, and means "having much rice". Bahuvrihi constructions are found in English:

- (42) a. He is long-haired/warm-hearted/brown-eyed.  
 b. He is talented/gifted/conceited.

Bahuvrihi constructions are generally defined as containing an incorporated adjective: 'X has an A that is B', as in (41a); but the term is extended to cover examples like (42b), where an unmodified noun shows verbal (Perfective) inflection. Across languages, bahuvrihi constructions are typically Individual Level predicates, referring to inalienably possessed items (body parts, character traits, etc.), as in (42). In Arizona Yaqui this Possessive construction has been extended so as to cover alienably possessed items as well. With alienable possession, we have a radically different construction type, since we have Stage Level predicates with an Event argument.



- (43) a. Inalienable (permanent) possession Ind. Level  
 b. Alienable (temporally bounded) possession Stage Level

We can account for these Yaqui constructions on the assumption that the possessed noun is followed by an abstract Transitivity. The bahuvrihi Possessives differ principally from canonical transitives in that a noun rather than a verb serves as lexical head of the clause. I propose that this noun has raised to the position of lexical head, leaving a trace.

- (44) a. 'aapo t livrom<sub>t</sub>-ek  
 he book-[TR]-PERF  
 'He has a book/is "book-ed".' [*livrom*: from Spanish *libro*]  
 b. 'aapo t livrom<sub>t</sub>-'ean  
 he book-[TR]-MODAL-IRR  
 'He should have had a book.'  
 c. 'aapo livrom ('He [is] a book')

These constructions are derived via a syntactic process rather than a lexical one; any Yaqui noun can occur as the lexical head of a bahuvrihi, as long as it occurs with some overt INFL head (Voice, Tense/Aspect, Modality); note that (44c) cannot be a bahuvrihi. Also, PERF aspect has present time reference in bahuvrihis, in contrast to its past time reference with verbs. Any modifiers of the head noun receive ACC case, as in (45).

- (45) a. 'aapo ['uka siali-k t] kar<sub>t</sub>-ek (kari 'house')  
 he DET:ACC green-ACC house-[TR]-PERF  
 'That green house is his.'  
 b. 'inepo [wepulai-k t] maara<sub>t</sub>-kan  
 I one-ACC daughter-[TR]-PAST-PERF  
 'I had one daughter.'

In (45), we see that ACC case on adjectives is *-k*, distinct from PERFECTIVE Aspect, which changes final *-i* to *-e*, and is underlyingly *-(e)k(a)*. Definiteness and number of the head noun are marked via modifiers. The ACC case marked demonstratives, adjectives and quantifiers that occur as complements in bahuvrihi sentences appear also in canonical transitives as case-marked constituents with "empty" heads.

- (46) a. 'aapo 'uka [e] vich-a-k  
 he DET:ACC saw-TR-PERF  
 'He saw that [one].'  
 b. 'aapo siali-k [e] vich-a-k  
 he green-ACC saw-TR-PERF  
 'He saw a green [one].'

Only nouns can serve as the lexical head of a bahuvrihi; adjectives, quantifiers, etc., are excluded. In (47), as elsewhere in Yaqui, Accusative case is not visible when Plural marking is present.

- (47) 'aapo [woi-m t] livrom<sub>t</sub>- machi  
 he two-PL book-[TR]-MODAL  
 'He should have two books.'

While bahuvrihis include full NPs, with complements of the head noun receiving ACC case, Noun Incorporation constructions in the language include only lexical nouns, and exclude complements to them. With Noun Incorporation, the verb is morphologically intransitive.

- (48) a. 'aapo maaso-ta peu-ta-k  
 he deer-ACC butcher-TR-PERF  
 'He butchered a deer.' (Transitive)
- b. 'aapo maaso-peu-te-n  
 he deer-butcher-INTR-PAST  
 'He was deer-butchering.' (Noun Incorporation)
- c. \* 'aapo bwe'uu-k maaso-peu-te-n  
 he big-ACC deer-butcher-INTR-PAST  
 [\*he was big deer-butchering]

Furthermore, the bahuvrihi noun is subject to existential closure, and can serve as a discourse antecedent, as in (49a). This is not the case with Noun Incorporation structures, as shown in (49b,c). Compare:

- (49) a. 'aapo [bwe'uu-k t] chuu'u<sub>t</sub>-kan, taa Peo  
 he big-ACC dog-[TR]-PAST-PERF, but Pete  
 'a-me'-a-k  
 3sACC-KILL-TR-PERF  
 'He had a big dog, but Pete killed it.'
- b. \* 'aapo maaso-peu-te-n, taa Peo  
 he deer-butchering-INTR-PAST, but Pete  
 'a-'etbw-a-k  
 3s-steal-TR-PERF  
 [he was deer-butchering, but Pete stole it]
- c. 'aapo maaso-ta peu-ta-n, taa Peo  
 he deer-ACC butcher-TR-PAST, but Pete  
 'a-'etbw-a-k  
 3s-steal-TR-PERF  
 'He was butchering a deer, but Pete stole it.'

Reduplication, an Affixal quantifier, marks Iterative aspect. The Iterative provides overt Aspectual marking, and can license a bahuvrihi. Compare examples (50a) and (50b).<sup>6</sup>

- (50) a. 'aapo hiva tu'ii tekil-ta wa-waa-ta  
 he always good job-ACC ITER-want-TR  
 'He always wants a good job.'
- b. 'aapo hiva [tu'ii-k t] te-tekil<sub>t</sub>  
 he always good-ACC ITER-job-[TR]  
 'He always has a good job.'

Bahuvrihi nouns may include relative clauses as complements. Example (51) shows a relative in an ordinary transitive sentence, and (52) shows a bahuvrihi sentence with a relative clause complement to the head noun.

- (51) 'aapo 'uka kava'i-ta ['em hinu-ka-'u-ta]  
 he DET:ACC horse-ACC [2sPOSS buy:TR-PERF-REL-ACC]  
 vich-a-k  
 see-TR-PERF  
 'He saw the horse that you bought.'
- (52) 'aapo ['uka t ['em hinu-ka-'u-ta]]  
 he [DET:ACC [2sPOSS buy:TRL-PERF-REL-ACC]]  
 kava'<sub>t</sub>-ek  
 horse-[TR]-PERF  
 'He owns the horse that you bought.'

In bahuvrihis with Relative Clause complements, is also possible to leave a copy of the moved head noun in place.

- (53) 'aapo 'uka kava'i-ta ['em hinu-ka-'u-ta]  
 he DET:ACC horse-ACC [2sPOSS buy:TR-PF-REL-ACC]  
 kava'-ek  
 horse-[TR]-PERF  
 'He owns the horse that you bought.'

Other evidence in support of this movement and trace analysis of the bahuvrihi constructions is provided by contrasting scopal properties of strong quantifiers that may be included in these constructions. Compare:

- (54) Peo hiva [t] tom<sub>t</sub>-ek  
 Pete always money-PERF  
 'Pete's always got money.'

<sup>6</sup>The complex verb 'work' is *teki-panoa*.

- (55) Peo [si'ime-ta t] tom<sub>t</sub>-ek  
 Pete all-ACC money-PERF  
 'Pete's got all the money.'

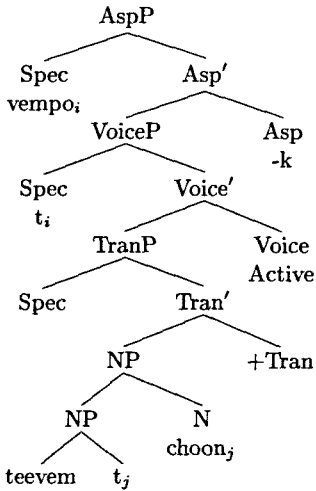
Example (54) shows adverbial quantification over the predicate; the object NP consists of the trace of the bahuvrihi noun. Example (55) shows Determiner quantification over the possessed NP, which contains the Determiner quantifier *si'ime* 'all', marked Accusative.

In sum: the bahuvrihis differ from noun incorporation structures in 1) valence; 2) the present time reference of the Perfective; 3) modifiers of the head noun; 4) existential closure over the Possessed NP; and 5) the exclusion of constructions with no overt INFL projections. The analysis of the Yaqui clause developed in the previous discussion can be usefully applied to the bahuvrihi constructions. These clauses have both subject and object arguments, introduced at the VOICE and TRANSITIVE projections. The subject has the "Holder" theta role identified by Kratzer. The Passive supplies additional evidence that the Yaqui bahuvrihi possessives with ACC complements are transitive:

- (56) vempo [teeve-m t] choon<sub>t</sub>-ek  
 they long-PL hair-[TR]-PERF  
 'They have long hair.' (Individual Level)
- (57) vatnaata-kai, [teevem t] cho-chon<sub>t</sub>-wa-n  
 earlier-COMP, long-PL ITER-hair-[TR]-PASS-PAST-IMPF  
 'In the old days, long hair was worn [had].'(Passive;Stage Level)

The structures I propose for the bahuvrihi Possessive sentences are as shown in (58):

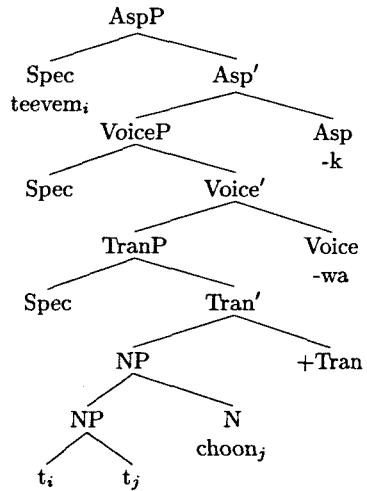
## (58) a. Bahuvrihi clause



a. vempo [teeve-m t] choon<sub>t</sub>-ek  
 they long-PL hair-PERF  
 'They have long hair.'

b. [ADV] ... [teeve-m t] cho-chon<sub>t</sub>-wa-k  
                   long-PL ITER-hair-[TR]-PASS-PERF  
 '[Formerly], (people) had long hair.'

## b. Passive bahuvrihi clause



In (58a), an Active argument is introduced at VOICE, and raises to [Spec, AspP]. The head noun *choon* raises to the position of lexical head of the clause, and then undergoes successive head movement to Aspect, *-k*. The complement to the head noun, *teevem*, has ACC case. In (58b), a referential Active argument is excluded by Passive *-wa*, which marks a non-referential agent. The complement of the possessed noun cannot receive ACC case, and raises to [Spec, Asp]. The head noun *choon* raises to the position of lexical head of the clause, then undergoes head movement to *-wa* and *-k*. Reduplication marks Iterative aspect in (58b). It is possible to add other transitivity projections to bahuvrihis, producing Desiderative, Causative or other ditransitive constructions, as in (59b,c). This provides additional evidence that the "Holder" theta role of the bahuvrihi subject is classed as Active.

(59) a. 'aapo [tu'ii-k t] tekil<sub>t</sub>-ek  
 he good-ACC job-[TR]-PERF  
 'He has a good job.' (Transitive)

- b. Peo 'apo'ik [tu'ii-k t] tekil<sub>t</sub>-tua-k  
 Pete him good-ACC job-CAUS-PERF  
 'Pete caused him to have a good job.' (+Causative)
- c. 'aapo [tu'ii-k t] tekil<sub>t</sub>-tua-wa-k  
 he good-ACC job-CAUS-PASS-PERF  
 'He was caused to have a good job.' (+Causative+Passive)

In English bahuvrihi constructions, the head noun can only take incorporated complements:

- (60) a. His parents are mean-spirited.  
 b. I bought a two-handled jug.

English bahuvrihi constructions are not transitive, and valence is not a strong feature overtly marked in a functional head. At spell-out in English, the verb and the valence projection are merged, and transitivity is a subcategorizational feature of the verb, not an INFL projection that can occur independently of a lexical verb, as in the Yaqui bahuvrihis.

## 5 The "use" or classificatory bahuvrihi constructions

In addition to the bahuvrihi Possessive sentences considered so far, Yaqui also has a related construction type where two distinct lexical nouns are included, and there is no movement of a head noun. In these sentences the Accusative marked object constituent contains a full NP, rather than a trace, and may also contain complements to the possessed noun. These constructions are comparable to "classificatory" noun incorporation structures, and have a "use" interpretation, as in (61).<sup>7</sup>

- (61) a. vempo 'uka kari-ta teopo-k  
 they DET:ACC house-ACC church-[TR]-PERF  
 'They have/use that house as/for a church.'  
 (They "church" that house.)
- b. 'inepo 'uka kuta-ta vo'onia-kan  
 I DET:ACC stick-ACC cane-[TR]-PAST-PERF  
 'I had that stick as/for a cane.'
- c. 'aapo 'ume swera-m muteka-ne  
 he DET:PL sweater-PL pillow-[TR]-FUT  
 'He will have that sweater as a pillow.'

The predicate noun in the "use" constructions excludes complements, but they may be included in the NP object constituent.

<sup>7</sup>Yaqui nouns borrowed from English and Spanish often receive the plural suffix.

- (62) a. 'inepo 'uka 'ili kuta-ta vo'onია-k  
 I DET:ACC little stick-ACC cane-[TR]-PERF  
 'I use that little stick as a cane.'
- b. \* 'inepo 'uka kuta-ta 'ili(-k) vo'onია-k  
 I DET:ACC stick-ACC little(-ACC) cane-[TR]-PERF  
 [\*I use that stick as a little cane; I little-cane that stick]

Obligatory properties of the "use" constructions:

- (63) 1. Have a full object NP constituent, with a lexical noun as head, in addition to the transitivized predicate noun.  
 2. The object NP is exclusively definite, while the predicate noun is indefinite and non-referential.  
 3. Exclude any complements to the predicate noun.  
 4. Are exclusively Stage Level predicates, describing a temporary use of an alienably possessed item.

These "use" constructions permit the Passive:

- (64) vatnaata-kai kuta-m vo-vo'onია-wa-n  
 formerly-COMP stick-PL ITER-cane-[TR]-PASS-PAST-IMPF  
 'In those days, sticks were used/had as canes.'

We saw above that in the Possessive bahuvrihi sentences the head noun is subject to existential closure, and can serve as a discourse antecedent. Example (49a) is repeated here:

- (49) a. 'aapo [bwe'uu-k t] chuu'u<sub>t</sub>-kan, taa Peo  
 he big-ACC dog-[TR]-PAST-PERF, but Pete  
 a-me'-a-k  
 3sACC-KILL-TR-PERF  
 'He had a big dog, but Pete killed it.'

This is not the case in the "use" constructions. In (65), it is the material object, the stick referred to by the object NP, that broke.

- (65) 'aapo 'uka kuta-ta vo'onია-n, taa  
 he DET:ACC stick-ACC cane-[TR]-PAST-IMPF, but  
 kot-te-k  
 break-INTR-PERF  
 'He had/was using that stick as a cane, but it broke.'

The "use" interpretation defines the nature of the relationship between a) the Possessor subject, b) the object NP and c) the predicate noun in these transitive sentences. Recognizing Transitivity and Voice as separate functional projections that may occur with either a verb or

a noun to derive a finite clause gives us a simple account of bahuvrihi structure that is consistent with other facts about Yaqui grammar.

## 6 Concluding remarks

This analysis of the relation between the lexical head of a clause and argument structure was motivated by the morphosyntactic data: there are languages that have overt functional projections, VOICE and  $\pm$ TRANSITIVE, that introduce Active and Affected arguments, and entail an event argument. Jelinek (1995b) identifies these functional projections in Straits Salish and Navajo. Languages vary parametrically in the strength of these INFL projections. In languages such as Yaqui where  $\pm$  TRANSITIVE is a "strong" projection that introduces Affected arguments, and is iterable, this projection corresponds to "VP" (and "VP shell") in languages where valence is "weak", a subcategorizational feature of the verb. Murasugi (1992,1994) classifies the obligatory Transitive marker in Eskimo clauses as an auxiliary verb 'do'. This is reminiscent of the function of "light" verbs in Chinese and other languages, where a "light" verb ('do' or 'make') often derives a complex predicate from a lexical noun. Across languages, the auxiliary 'be' is associated with the derivation of the passive voice, and the auxiliary 'have' is often associated with transitives and unergatives. Hale and Keyser (1987) propose an abstract causal verb as a universal feature of transitive clauses.

On this kind of a compositional analysis, the VOICE and TRANSITIVE projections a) introduce arguments and assign theta roles to them; and b) provide the structural framework for case assignment. The highest argument always receives default Nominative case. Accusative or structural case is assigned to arguments introduced at a lower projection. There may be both Spec to Spec movement of arguments, and Head to Head movement of the predicate to Inflectional heads.

The chart in (66) shows the distribution of the Active and Affected arguments and Passive *-wa* across clause type in Yaqui.

| (66) | Active | Affected | Example                              |
|------|--------|----------|--------------------------------------|
|      | +      | +        | (16a) Transitive Active              |
|      | WA     | +        | (16b) Passive                        |
|      | -      | +        | (17a) Unaccusative                   |
|      | -      | *WA      | (17b) [*excluded]                    |
|      | +      | -        | (18a) Unergative                     |
|      | WA     | -        | (18b) Impersonal                     |
|      | -      | -        | (19) Weather/temporal [null subject] |



In more complex constructions, there may be additional transitivizing projections. In the Causative and Directive constructions, a new Agent is introduced at VOICE, dominating a lower Agent, which becomes an Accusative marked affected argument. In the Double Accusative and Applicative constructions, an Affected Goal/Benefactive argument is introduced at a TRANSITIVE head inserted below the VOICE projection. If Passive excludes a referential Agent at VOICE, the argument introduced at the projection just below VOICE raises to Subject.

In sentences with a predicate noun or adjective, as in our initial examples (1,2) above, there are no VOICE or TRANSITIVE projections. Diesing (1992) proposed that the subjects of predicates of this kind do not originate in a VP internal position, but are base generated in INFL. The subjects of predicate nouns and adjectives are exclusively definite or specific (Diesing 1992; Diesing and Jelinek 1995), unless they are under the scope of a quantifier. I do not assume here that some subjects originate in VP internal positions, rather that some subjects are thematic, that is, have theta roles that are compatible with the entailments of the verb. The subjects of predicate nouns and adjectives are not thematic, and are licensed by the copula or Tense/Aspect. These constructions may be Individual Level, or Stage Level, if they are temporally bounded at Tense/Aspect.

In the Yaqui bahuvrihi sentences, a noun is raised to the position of lexical head of the clause. This noun occurs with the VOICE and TRANSITIVE INFL projections. The Active argument introduced at VOICE has the theta role of "Holder". Any complement of the head noun of the possessed NP appears at a TRANSITIVE projection, along with the trace of the moved noun. These complements receive Accusative case. Passive may apply, since the "Holder" theta role of the subject is compatible with Passive. If a full object NP is present, we see the "use" or classificatory interpretation of the predicate noun. The bahuvrihi sentences may be Stage or Individual Level; the "use" constructions are exclusively Stage Level. In a system where TRANSITIVE is a strong feature that is overt in the syntax, marked in an affix or "light verb" that is distinct from the lexical head of the clause, it is possible for lexical items other than verbs to head finite sentences, as we see in these bahuvrihi constructions. Jelinek (1995a) argues that in Salish, where VOICE and TRANSITIVE are also overt projections, any open class lexical item may head a finite clause.<sup>8</sup>

<sup>8</sup>Ramchand (this volume) argues that "verb" is not a unified notion, but consists of two logically separate constituents, Aspect (where argument structure is selected) and the lexical verb. In Scottish Gaelic, the Aspectual head occurs with "verbal nouns" as well as verbs.

Argument structure is compositional, and argument arrays that are incompatible with the lexical semantic features of the verb cannot be composed with it, as Dowty (1989, 1991) argues. There are constraints on the thematic roles associated with the Active and Affected argument projections. Some of these constraints appear to be universal, and others are language particular. We have seen that in Yaqui, as in English, Active arguments must be Agents, Experiencers, or "Holders". In addition, the Yaqui Passive cannot apply if the Active argument is inanimate — the non-referential Agent marked by *-wa* is necessarily animate.

- (67) a. 'u tahi 'uka kari-ta nason-ta-k  
 DET fire DET:ACC house-ACC damage-TR-PERF  
 'The fire damaged the house.'
- b. 'u kari nason-ta-wa-k  
 DET house damage-PASS-PERF  
 'The house was damaged (by animate beings).'

Example (67b) cannot be used to speak of damage by fire. In Navajo, as in many other languages, only Agents and Experiencers appear as Active arguments; Possessive sentences are existential constructions. Furthermore, Experiencers cannot be direct Objects in Navajo; Experiencers are either subjects or oblique (Postpositional) arguments (Jelinek and Willie 1996). Similarly in Choctaw, an "Active/Stative" language, Experiencers are exclusively subject or Possessor arguments (Jelinek 1989). While Passives generally are compatible with Applicatives and purpose clauses, Passives of psych verbs and purpose clauses are not compatible. Example (26) above is repeated here:

- (26) \* 'empo tu'uri-wa kaaro-ta 'e-u nenki-vetchi'ivo  
 you like-[TR]-PASS car-ACC 2S-DAT sell-[TR]-for  
 [\* You are liked to sell you a car]

Only those verbs that are compatible with volitional Agents license purpose clauses.

Further evidence of constraints between theta role and argument position imposed by the lexical semantics of the verb is provided by the Double Accusative constructions in Yaqui. These constructions involve the small class of ditransitive verbs that select an Accusative marked goal argument in addition to the Accusative marked Patient. The lexical semantics of these verbs entail animate goal arguments, that are affected by the event described. This is not the case with the ACC DAT constructions, where the goal is not affected in the same way. As we saw in examples (36)–(37) above, Passive makes the affected animate Goal the subject of a Double ACC construction, while the Passive of an

ACC DAT construction makes the Patient subject. Dative case is never grammaticalized, and there is no "optional" Dative movement.

We have seen evidence of entailments between argument projections that may be linked to theta roles. The Applicative appears immediately above the lowest TRANSITIVE projection, where Patients can be introduced; both these projections must underlie any other transitivizers. This follows from the exclusively Affected theta role of both Patients and Benefactees, which presuppose an Agent. The Desiderative, Directive and Causative, which introduce Active arguments, must overlie a lower Active argument, which becomes Affected.

As Grimshaw (1990), and Hale and Keyser (1993) argue, the parallels across languages in predicate argument structure, and theta role and case assignment, are such that we are forced to recognize argument structure as a configurational domain in its own right. Ramchand (this volume) points to an "emerging consensus" on argument structure as a distinct structural domain.

The configuration of functional projections — the position and number of arguments introduced — establishes the voice and valence of the clause. These functional projections are the domain of the expression of a number of deictic and quantificational features that are distinct from the lexical verb. Arguments that are not presuppositional are either bound by a quantifier or receive existential closure (see Heim 1982). We have seen that the Yaqui Passive provides existential closure over a non-referential (indefinite) Agent. Tenny (1987) argues that affectedness is the key Aspectual notion, and that the affectedness of arguments can be defined in terms of the (quantificational) notion of delimitedness: "the direct argument 'measures out' the event described by the linguistic expression". In Yaqui, Voice and Transitivity are overt projections that introduce Active and Affected arguments. These projections are morphologically separate from the Aspect projection, as well as from the lexical verb (or noun). Yaqui provides evidence that languages vary parametrically in the selection of particular sets of INFL features to mark overtly. Various dependencies and entailments among the INFL features make it possible for a given feature to be "strong" (overt in the syntax) in one language and "weak" (not overt) in another. These functional projections constitute an integrated syntactic domain that forms part of the quantificational component of the grammar.

## References

- Bach, Emmon. 1967. **Have** and **Be** in English Syntax. *Language* 43(2):462-485.
- Bach, Emmon, Eloise Jelinek, Angelika Kratzer, and Barbara Partee (ed.).

1995. *Quantification in Natural Languages*. Dordrecht: Kluwer Academic Publishers.
- Bobaljik, Jonathan D. 1995. *Morphosyntax: The Syntax of Verbal Inflection*. Doctoral dissertation, MIT.
- Carlson, Gregory. 1977. *Reference to Kinds in English*. Doctoral dissertation, University of Massachusetts, Amherst. Published 1980, Garland, New York.
- Chomsky, Noam. 1991. Some Notes on Economy of Derivation and Representation. In *Principles and Parameters in Comparative Grammar*, ed. Robert Freidin. Cambridge, Massachusetts: The MIT Press.
- Chomsky, Noam. 1992. A Minimalist Program for Linguistic Theory. In *MIT Occasional Papers in Linguistics 1*. Cambridge, Massachusetts: The MIT Press.
- Diesing, Molly. 1992. *Indefinites*. Cambridge, Massachusetts: The MIT Press.
- Diesing, Molly, and Eloise Jelinek. 1995. Distributing Arguments. *Natural Language Semantics* 3(2):123-176.
- Dowty, David. 1989. On the Semantic Content of the Notion "Thematic Role". In *Properties, Types and Meanings*, ed. Barbara Partee, Genaro Chierchia, and Ray Turner. 69-130. Dordrecht: Kluwer Academic Publishers.
- Dowty, David. 1991. Thematic Proto-roles and Argument Selection. *Language* 67(3):547-619.
- Escalante, Fernando. 1990a. Setting the Record Straight on Yaqui Passives. *International Journal of American Linguistics* 56(2):289-292.
- Escalante, Fernando. 1990b. *Voice and Argument Structure in Yaqui*. Doctoral dissertation, University of Arizona.
- Grimshaw, Jane. 1990. *Argument Structure*. Cambridge, Massachusetts: The MIT Press.
- Hale, Kenneth. 1973. Person Marking in Walbiri. In *A Festschrift for Morris Halle*, ed. Stephen A. Anderson and Paul Kiparsky. New York: Holt, Rinehart and Winston.
- Hale, Kenneth, and Samuel J. Keyser. 1987. A View from the Middle. Technical Report 10. Lexicon Project Working Papers, Center For Cognitive Science, MIT.
- Hale, Kenneth, and Samuel J. Keyser. 1993. On Argument Structure and the Lexical Expression of Syntactic Relations. In *The View from Building 20: Essays in Honor of Sylvain Bromberger*, ed. Kenneth Hale and Samuel J. Keyser. Cambridge, Massachusetts: The MIT Press.
- Heim, Irene. 1982. *The Semantics of Definite and Indefinite Noun Phrases*. Doctoral dissertation, University of Massachusetts, Amherst.
- Jelinek, Eloise. 1989. Subjects in an "Active/Stative Language": Choctaw. Paper presented at the Workshop on External Arguments, MIT.

- Jelinek, Eloise. 1995a. The Compositionality of Argument Structure. Ms., University of Arizona (Lectures given at the Mathesius Institute, Charles University, Prague, in April 1995.).
- Jelinek, Eloise. 1995b. Quantification in Straits Salish. In *Quantification in Natural Languages*, ed. Emmon Bach, Eloise Jelinek, Angelika Kratzer, and Barbara Partee. Dordrecht: Kluwer Academic Publishers.
- Jelinek, Eloise, and Fernando Escalante. 1987. Passives and Impersonals in Yaqui. Paper presented at the *Conference on American Indian Languages, American Anthropological Association Annual Meetings*, Chicago.
- Jelinek, Eloise, and MaryAnn Willie. 1996. "Psych" Verbs in Navajo. In *Athabaskan Language Studies: Essays in Honor of Robert W. Young*. Albuquerque, New Mexico: University of New Mexico Press.
- Kratzer, Angelika. 1989. Stage and Individual Level Predicates. *Papers on Quantification, NSF Grant Report*. Department of Linguistics, University of Massachusetts at Amherst.
- Kratzer, Angelika. 1994. On External Arguments. In *Functional Projections, University of Massachusetts Occasional Papers in Linguistics*. Amherst, Massachusetts: University of Massachusetts.
- Kratzer, Angelika. 1996. Severing the External Argument from its Verb. In *Phrase Structure and the Lexicon*, ed. J. Rooryk and L. Zaring. Dordrecht: Kluwer Academic Publishers. *Studies in Natural Language and Linguistic Theory*.
- Levin, Beth, and Malka Rappoport. 1989. Approaches to Unaccusative Mismatches. In *Proceedings of the Northeastern Linguistic Society (NELS) 19*, 314-328. Graduate Student Linguistics Society, University of Massachusetts, Amherst.
- Murasugi, Kumiko. 1992. *Crossing and Nested Paths: NP Movement in Accusative and Ergative Languages*. Doctoral dissertation, MIT.
- Murasugi, Kumiko. 1996. The Transitivity Morpheme as Auxiliary in Inuit. PhD thesis in progress, McGill University.
- Perlmutter, David. 1978. Impersonal Passives and the Unaccusative Hypothesis. In *Proceedings of the Fourth Annual Meeting of the Berkeley Linguistics Society (BLS)*.
- Roberts, Ian. 1985. *The Representation of Implicit and Dethematized Subjects*. Doctoral dissertation, USC.
- Sityar, Emily. 1995. Voice and the Licensing of Subjects in Cebuano. In *Proceedings of CONSOLE II*, ed. Regine Eckardt and Veerle van Geenhoven, 239-252. The Hague. Holland Academic Graphics.
- Tenny, Carol. 1987. *Grammaticalizing Aspect and Affectedness*. Doctoral dissertation, MIT.
- Williams, Edwin. 1987. Implicit Arguments, the Binding Theory and Control. *Natural Language and Linguistic Theory* 4:151-180.

**III. 3 Jelinek, Eloise (2003) Quantification in Yaqui Possessive Sentences. *MIT Working Papers in Endangered and Less Familiar Languages* 5. 201-214**

A rich set of new data about Yaqui bahuvrihi possession (where the possessed noun is marked with a Tense/Aspect marker, and there is no overt verb) is the primary contribution of this paper. Using data from different types of quantification (weak, strong, determiner, adverbial), Jelinek shows that these structures are a heterogeneous class of phenomena, which include nominal movement into T for morphological reasons, and nominal copying. She also shows that these constructions do not behave like noun incorporation in the language. This draws attention to important data on the nature of possession and its interaction with quantification, and to variation in the typology of incorporation cross-linguistically.

## Quantification in Yaqui Possessive Sentences\*

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There is a type of possessive sentence in Yaqui in which there is no "lexical" verb of Possession, and the head noun of the underlying possessed NP is raised to the verbal position. The resulting construction is transitive, and may undergo the passive. The distribution of Determiner and Adverbial quantification in these and related construction types is reviewed.

### 1.0. Introduction: The syntax of Yaqui possessive sentences

Yaqui has the usual kind of possessive sentences with the transitive verb *hipue* "have, keep".

(1)a. 'aapo kava'i-ta hipue<sup>1</sup>  
he horse-ACC has  
'He has a horse.'

b. vempo 'uka tomi-ta kari-po hipue  
they DET:ACC money-ACC house-at keep  
'They keep the money at home.'

Yaqui also has a *bahuvrihi* Possessive sentence type. The traditional term *bahuvrihi* is derived from Sanskrit grammar, and refers to the Possessive construction seen in English sentences such as those in (2):

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\* There is currently dispute among the members of the Yaqui tribe as to how their language (*Hiaknooki*) should be officially designated. In the interim, I will use the name approved by the Yaqui Tribal Council, *Yaqui*.

This research was done in collaboration with the late Fernando Escalante, a native speaker of Arizona Yaqui who received a Ph.D. in Linguistics from the University of Arizona. An earlier version of this paper with Escalante as co-author was given at SSILA 1993. I am also indebted to Maria Amarillas, Rosario Amarillas, Frances Delgado, and Maria Molina, as well as other members of the Yaqui community in Tucson. I am grateful to Heidi Harley for numerous discussions of this material; she is not responsible for any of my errors.

<sup>1</sup> Abbreviations are as follows: ACC accusative; CAUS causative; COMP complementizer; DEM demonstrative; DESD desiderative; DET determiner; FUT future; IMP imperfective; ITER iterative; MODAL modal; NEG negation; PASS passive; PAST past; PERF perfective; PL plural; POSS possessive; RDP reduplication; REL relativizer; SG singular.

- (2)a. He is brown-eyed.  
 b. He is kind-hearted.  
 c. He is talented.

If there is an initial attributive word in the English *bahuvrihi* nominal, it is incorporated into the Participle, as shown by the hyphens in (2a, 2b). There is an underlying nominal in sentence final position, followed by the Perfective suffix *-ed*, deriving a Participle. In English, this construction type can only be used for inalienably possessed items, usually a physiological or character trait. In Yaqui, *bahuvrihis* can be used for either alienably or inalienably possessed items, while the verb *hipue* can be used only for alienably possessed items (Escalante 1990).

- (3)a. 'aapo husai-m puuse-k  
 he dark-PL eye-PERF  
 'He is brown-eyed.'
- b. #aapo husai puusi-m hipue  
 he dark eye-PL have  
 [he has brown eyes (cf. glass eyes in a box).]

In Arizona Yaqui, this construction type shows an elaborate development. Any lexical noun, either alienably or inalienably possessed, may appear with any of the set of Tense/Aspect/Modality suffixes that occur with verbs, producing a *bahuvrihi* (Jelinek and Escalante 1988; see also Haugen 2002).

- (4)a. 'inpo kava'-ek  
 I horse-PERF  
 'I have a horse/some horses.'
- b. 'inpo tomi-ne  
 I money-FUT  
 'I will have money.'
- c. 'inpo chuu'u-machi  
 I dog-MODAL  
 'I should have a dog/some dogs.'

Perfective aspect has present time reference in these Possessives, just as in the corresponding English construction. Imperfective aspect is marked with the Imperfective suffix *-e*, and with reduplication marking the Iterative:

- (5) 'aapo hiva ka-kava'-e  
 he always RED:horse-IMP  
 'He always has a horse.'



*Quantification in Yaqui Possessive Sentences*

If a noun ends in the high vowel *-i*, (cf. *kava'i* "horse" < Spanish *caballo*), this vowel becomes *-e* in the presence of the Aspect suffixes *-e* (IMP) or *-(e)k* (PERF). These affixes do not affect other word final vowels.

The *bahuvrihi* must end in some Tense/Aspect/Modality suffix. Without such an affix, the sentence is interpreted as a present tense copular construction.

(6)a. 'aapo kava'-ek  
he horse-PERF  
'He has a horse.'

b. # 'aapo kava'i  
he horse  
'He is a horse.'

The T/A/M suffix is mutually exclusive with any suffix marking number or case of the possessed item. However, number and case are marked on any attributive word that appears with the possessed noun.

(7)a. 'inepo wepulai-k maara-k  
I one-ACC daughter-PERF  
'I have one daughter.'

b. 'inepo woi-m maara-k  
I two-PL daughter-PERF  
'I have two daughters.'

c. 'inepo woi-m tutu'uli-m maara-k  
I two-PL pretty-PL daughter-PERF  
'I have two pretty daughters.'

In (7a) we see the Accusative suffix *-k* on the numeral "one". (The suffix *-k* marks ACC case on singular adjectives; unlike the Perfective, it does not affect a preceding high vowel.) In (7b) we see the Plural marker *-m* on the numeral "two"; Plural and Accusative marking do not co-occur on the same word. In (7c) we see the Plural *-m* suffix on both the numeral and the adjective.

Let us compare a Possessive sentence of this type with a normal transitive sentence in Yaqui:

(8) 'inepo [tutu'uli kava'i-ta] hinu-k  
I pretty horse-ACC buy-PERF  
'I bought a pretty horse.'

In the transitive sentence in (8), there is an Accusative marked object constituent preceding the verb. In (9) there is also an Accusative marked object, but it differs from the object constituent seen in (8). In (9) we see the Accusative suffix *-k* on the adjective.

- (9) 'inepo [tutu'uli-k t ] kava'-ek  
 I pretty-ACC horse-PERF  
 'I have a pretty horse.'

In the absence of a lexical root such as *hinu* "buy" serving as head of the clause, the head noun of the possessed NP, *kava'i* "horse" has moved up into the verbal position to check the feature [ROOT], and is marked Perfective, leaving a trace in the object NP.

The adjectival Accusative shows up in ordinary transitives.

- (10) 'inepo tutu'uli-k hinu-k  
 I pretty-ACC buy-PERF  
 'I bought a pretty one.'

I adopt here the basic assumptions of the Distributed Morphology approach (Halle and Marantz 1993, Harley and Noyer 1999), in recognizing two syntactic primitives, Roots vs. the Functional Projections, which derive morphosyntactic structures. The division between Roots and Functional Projections corresponds more or less to the traditional split between open and closed class categories.

Since it is always the head noun of the object NP that moves into the verbal position, possessive sentences of this kind with an adjective or a quantifier in the verbal position are excluded.

- (11)a. \*'aapo tutu'ul-ek                      b. \*'aapo si'im-ek  
       he pretty-PERF                        he all-PERF  
       [he has a pretty one]                [he has it/them all]

As we saw in Ex. (4) above, the noun that raises into the verbal position in the Yaqui possessives need not have any modifiers. In this case only the trace serves as the object constituent.

Possessed nouns may also include relative clause complements. Ex. (12) shows a relative in a transitive sentence, and (13) shows a Possessive sentence with an 'internally headed' relative clause.

- (12) 'aapo ['uka kava'i-ta 'em-'etbwa-ka-'u-ta ] vicha-k  
       he [DET:ACC horse-ACC 2SG.POSS-steal-PERF-REL-ACC] see-PERF  
       'He saw the horse that you stole.'

- (13) 'aapo ['uka 'em-'etbwa-ka-'u-ta ] kava'-ek  
       he [DET:ACC 2SG.POSS-steal-PERF-REL-ACC] horse-PERF  
       'The horse that you stole is his.'

With relative clause complements in Possessives, an NP head may be optionally included, "doubling" the Root that serves as lexical head of the clause. In this variant, the Root is copied but the original is optionally not deleted.

### *Quantification in Yaqui Possessive Sentences*

- (14) 'aapo ['uka kava'i-ta 'em- 'etbwa-ka-'u-ta ] kava'-ek  
he [DET:ACC horse-ACC 2SG.POSS steal-PERF-REL-ACC] horse-PERF  
'The horse that you stole is his.'

#### **2.0. Noun Incorporation in Yaqui**

Jelinek (1998) shows that the *bahuvrihi* constructions differ from noun incorporation (NI) structures (Baker 1988) in the language in several important respects. First, the possessed nouns are referential; aside from modal and quantified contexts, there is existential closure over the possessed noun.

- (15) Peo kar-ekan, taa veete-k  
Pete house-PAST:PERF, but burn-PERF  
'Pete had a house, but it burned.'

Furthermore, these possessive constructions may include Determiner/Demonstratives, Quantifiers and adjectives, all of which show Accusative case marking, as we have seen above in Ex. (7). Ordinary noun incorporation constructions exclude such modifiers (16b), whereas they are permitted in the possessives (16c).

- (16)a. 'aapo maaso-'aamu  
he deer-hunt  
'He is deer-hunting.'
- b. \*'aapo bwe'uu-k maaso-'aamu  
he big-ACC deer-hunt  
'He is big deer-hunting.'
- c. 'aapo bwe'uu-k maaso-k  
he big-ACC deer-PERF  
'He has a big deer.'

These noun incorporation constructions do not permit existential closure over the incorporated noun (Jelinek 1998):

- (17)\*'aapo maaso-peute-n, taa Peo 'a 'etbwa-k  
he deer-butcher-PAST:IMP, but Pete it steal-PERF  
(He was deer-butchered, but Pete stole it.)

#### **3.0. The distribution of quantifiers in Yaqui possessives**

Since Determiner and Adjectival quantifiers are constituents of NPs, while Adverbial quantifiers are associated with VPs, the distribution of quantifier types in Yaqui possessive sentences should shed some light on the categorial status and constituency of the predicate in these constructions.

### 3.1. Determiner quantification

Both 'weak' and 'strong' quantifiers (Milsark 1974) appear in Yaqui Possessives. Weak quantifiers are the cardinality expressions, numerals and words like "few" and "many". We saw an example of a numeral in (7) above. Other examples include (18):

- (18) Peo 'iliiki-m/huevena-m kava'-ek  
Pete little-PL/lot-PL horse-PERF  
'Pete owns a few/many horses.'

When these 'measure' adjectives occur with mass nouns, they are singular and overtly case marked:

- (19) Peo 'iliiki-k/huevena-k vach-ek  
Pete little-ACC/lot-ACC corn-PERF  
'Pete has a little/a lot of corn.' (mass noun)

An example of a strong quantifier is *si'ime* "all", which also occurs with both count and mass nouns. Note that the mass noun takes Accusative marking in (19, 21), while the count noun has plural marking in (20).

- (20) Peo si'ime-m/vatte si'ime-m kava-ek  
Pete all-PL/almost all-PL horse-PERF  
'Pete has all/most of the horses.' (count noun)

- (21) Peo si'ime-ta/vatte si'ime-ta vach-ek  
Pete all-ACC/almost all-ACC corn-PERF  
'Pete has all/almost all of the corn.' (mass noun)

We have seen that nouns that are not under the scope of a strong quantifier in possessive sentences are given an indefinite reading and receive existential closure. However, it is also possible to mark the possessed noun definite with a Demonstrative/Determiner.

- (22) Peo hunuka kar-ek  
I DEM:ACC house-PERF  
'Pete owns that house/That's Pete's house.'

### 3.2. Adverbial quantification

So far we have been looking at Determiner Quantification, and the adjectival quantifiers associated with NPs. Now let us consider Adverbial Quantification (Lewis 1975) in possessive sentences.<sup>2</sup> Ex. (23-24) both include the adverb *hiva* "always". Ex. (23) is an ordinary transitive with a case-marked NP, and (24) is a possessive with a case-marked adjective.

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<sup>2</sup> Bach et al. (1995) investigate the distribution of determiner vs. adverbial quantification in natural languages.

### Quantification in Yaqui Possessive Sentences

(23) 'aapo hiva tu'ii tekil-ta tu'ur-e  
he always good job-ACC want-IMP  
'He always wants a good job.'

(24) 'aapo hiva tu'ii-k te-tekil-e  
he always good-ACC RED:job-IMP  
'He always has a good job.'

(The noun *tekil* "job" contrasts with the verb *tekipanoa* "work".) In Ex. (23), *tekil* appears with a suffix *-e* marking Imperfect Aspect, and reduplication marking Iterative Aspect. Another adverbial:

(25) 'aapo hakwo-huni'i kaa te-tekil-e  
he when-whatever NEG RED:job-IMP  
'He never has a job.'

### 3.3. Scope ambiguities

When possessive sentences contain Negation plus the adverbial quantifier *hiva* "always", the order of these adverbs in the syntax does not mark relative scope in the interpretation.

(26) 'aapo kaa hiva te-tekil-e  
he NEG always RED:job-IMP  
a. He doesn't always have a job.  
b. He always doesn't have a job.

This sentence is ambiguous. (Sentence (25) can be also be used to convey the second reading.) Other word orders, where the NEG adverb *kaa* precedes *te-tekil-e* or is sentence initial, do not resolve the ambiguity. Sentences with NEG plus the strong quantifier *si'ime* "all" show the same ambiguity.

(27) nee kaa si'ime-m kava'-ek  
I NEG all-PL horse-PERF  
a. Not all the horses are mine. [I have some]  
b. All of the horses are not mine. [I have none]

Here there is a single overt lexical head *kava'i*, while the contrasting interpretations involve scope over NP vs. VP.

### 3.4. Other quantifier combinations

The strong adverbial quantifier *hiva* may be combined with a weak quantifier in a possessive sentence.

(28) 'aapo hiva woi-m te-tekil-e  
he always two-PL RED:job-IMP  
'He always has two jobs.'

And, possessive sentences with the adverbial quantifier *hiva* "always", plus the strong quantifier *si'ime* "all" are also accepted.

(29) Peo hiva to-tom-e  
Pete always RED:money-IMP  
'Pete always has money.'

(30) Peo si'ime-ta tom-ek  
Pete all-ACC money-PERF  
'Pete has all the money.'

(31) Peo hiva si'ime-ta to-tom-e/tom-ek  
Pete always all-ACC RED:money-IMP/money-PERF  
'Pete always has all the money.'

Ex. (31), the sentence with both strong quantifiers, is accepted with either the Perfective or the Imperfective aspect, although the Perfective is slightly preferred by some speakers. Compare the following sentence with a lexical verb:

(32) 'aapo hiva si'ime tomi-ta nu-nu-'e  
he always all money-ACC RED:get-IMP  
'He always gets all the money.'

Another example of *hiva* with the Perfective:

(33) 'aapo hiva tom-ekai, naa weeye  
he always money-PERF:COMP, about go  
'Always having money, he goes about.'  
(He always travels around with money.)

#### 4.0. Quantifiers and Noun Incorporation in Yaqui

It was noted above that in Yaqui Noun Incorporation, there need not be existential closure over the incorporated object, and attributive elements are excluded.

(34)a. 'aapo maaso-'aamu  
he deer-hunt  
'He is deer-hunting.'

b. \*'aapo bwe'uu-k maaso-'aamu  
he big-ACC deer-hunt  
'He is big deer-hunting.'

*Quantification in Yaqui Possessive Sentences*

Compare also:

- (35) 'aapo chin-pua  
he cotton-pluck  
'He is cotton-picking.'

A significant difference, however, is that incorporated nouns in NI constructions are exclusively indefinite, and that while adverbial quantifiers are permitted, quantifiers that take scope over just the incorporated noun are absolutely excluded.

- (36) 'aapo hiva chin-pua  
he always cotton-pluck  
'He is always cotton-picking.'

- (37) \*'aapo huevena(-ta)/si'ime(-ta) chin-pua-k  
he much(-ACC)/all(-ACC) cotton-pluck-PERF  
[he cotton-picked a lot/all]

In sum, while nouns in standard NI constructions exclude ANY complements, we have seen that Determiners/Demonstratives, Adjectives, Relative clauses, and Quantifiers can appear as case marked constituents of possessive sentences. It is important to note, however, that NONE of these constituents are "stranded", in the sense that they are unique to possessive sentences. They all appear also as Accusative objects in ordinary transitive sentences. In fact, the only kind of ACC marked element that we have not seen in possessive sentences, as opposed to ordinary transitives, is a noun. The exception to this generalization is the repeated head noun in possessive sentences with relative clause complements.

- (38) 'aapo ['uka 'em-'etbwa-ka-'u-ta ] kava'-ek  
he [DET:ACC 2SG.POSS-steal-PERF-REL-ACC] horse-PERF  
'The horse that you stole is his.'

- (39) 'aapo ['uka kava'i-ta 'em-'etbwa-ka-'u-ta ] kava'-ek  
he [DET:ACC horse-ACC 2SG.POSS-steal-PERF-REL-ACC] horse-PERF  
'The horse that you stole is his.'

Note that even when the head noun is not repeated, as in (38), the relative clause complement is a nominalized construction. Another kind of argument 'doubling' appears with extraposed objects, which must be licensed by an object pronoun in the normal preverbal object position. Consider Ex. (40), an ordinary transitive construction with an "antitopic":

- (40) 'aapo 'a-hinu-k, hunuka siali kaaro-ta  
he 3SG.ACC-buy-PERF, DEM:ACC green car-ACC  
'He bought it, that green car.'

There is an object clitic 'a- in the main clause, and an "extraposed" coreferent

ACC NP in an "afterthought" or antitopic construction. The same antitopic construction type appears in Yaqui possessive sentences:

- (41) 'aapo 'a-kaaro-k, hunuka siali kaaro-ta  
he 3SG.ACC-car-PERF, DEM:ACC green car-ACC  
'It's his car, that green car.'

### 5.0. Voice

Adjectives may appear with "null" heads in ordinary transitive and intransitive constructions in Yaqui,

- (42)a. TRANSITIVE  
'aapo 'uka siali-k vicha-k  
he DET:ACC green-ACC see-PERF  
'He saw the green one.'

- b. INTRANSITIVE  
'u siali wette-k  
DET green fall-PERF  
'The green one fell.'

And, as we have seen, in possessive sentences, the object constituent may be overt or a trace.

- (43)a. 'aapo 'uka siali-k kaaro-k b. 'aapo [t] kaaro-k  
he DET:ACC green-ACC car-PERF he car-PERF  
'He owns this green car.' 'He has a car.'

### 5.1 Passive

Since Possessives appear with and without an overt Accusative constituent, we see the Passive distributed accordingly: Passive can apply IFF there is an Accusative marked constituent. Compare (44, 45).

- (44)a. 'aapo tekil-ek b. \*tekil-wa-k  
he job-PERF job-PASS-PERF  
'He has a job.' [a job is had]

Examples (45a,b) show an active and a passive possessive.

- (45)a. vempo teeve-m choon-ek  
they long-PL hair-PERF  
'They have long hair.'
- b. vatnaata-kai, teeve-m cho-chon-wa-n  
earlier-COMP, long-PL RED:hair-PASS-PAST:IMP  
'In the old days, long hair was worn [had].'



## 5.2 Other Valence Changes

Passive can follow the Desiderative or Causative, which add an agent argument to the sentence. This agent is deleted when Passive applies.

- (46)a. Peo 'apo'ik tekil-tua-k  
Pete him job-CAUS-PERF  
'Pete caused him to have a job.' CAUSATIVE
- b. 'aapo tekil-tua-wa-k  
he job-CAUS-PASS-PERF  
'He was caused to have a job.' CAUS+PASSIVE
- (47)a. Peo 'apo'ik tekil-'ii'aa-n  
Pete him job-DESD-PAST:IMP  
'Pete wanted him to have a job.' DESIDERATIVE
- b. 'aapo tekil-'ii'aa-wa-n  
he job-DESD-PASS-PAST:IMP  
'It was wanted that he have a job.' DESD+PASSIVE

## 6.0 The "use" constructions

There is another construction type, clearly related to the possessive in Yaqui, where a complete Accusative marked object NP can appear. This noun CANNOT be identical with the noun appearing in the V node. These sentences therefore include subject and object nominals, as well as the noun Root in the verbal position, and their syntax and interpretation is quite distinct from that of the simple *bahuvrihi* possessives.

- (48) vempo 'uka kari-ta teopo-k  
they DET:ACC house-ACC church-PERF  
'That house is their church.' [They church-have that house.]  
[They have/use that house as/for a church.]
- (49) inepo 'uka kuta-ta vo'onía-kan  
I DET:ACC stick-ACC cane-PAST:PERF  
'That stick was my cane.' [I had that stick as a cane.]

The ACC marked noun may appear with modifiers, but the sentence final noun—the clausal predicate—cannot do so.

- (50) 'inepo 'uka 'ilii kuta-ta vo'onía-k  
I DET:ACC little stick-ACC cane-PERF  
'I use that little stick as a cane.'

- (51) \**'inepo* *kuta-ta* *'ilii(-k)* *vo'onia-k*  
 I stick-ACC little(-ACC) cane-PERF  
 [I use a stick as a little cane]

Since the "use" constructions are transitive, they permit the Passive.

- (52) *vatnaata-kai* *kuta-m* *vo-vo'onia-wa-n*  
 formerly-COMP stick-PL cane:RDP-PASS-PAST:IMP  
 'In those days, sticks were used/had as canes.'

Since the 'use' constructions contain both a noun serving as head of the object NP constituent, and another serving as the clausal predicate, we cannot maintain a raising analysis for these constructions. They are somewhat reminiscent of a type of noun incorporation construction seen elsewhere in Native America that also include other nouns (Baker 1988, pp. 145-46).

- (53) *wa'-k-nuhs-ahni:nu:* [John lao-nuhs-a']  
 AGR-1sS/3N-house-bought/PERF that [John-3M-house-SUF]  
 'I bought John's house.' (Tuscarora, Williams)

- (54) *hati-hnek-aets* *o-v:ta:k-i'*  
 3M.PL-liquid-gather PRE-syrup-SUF  
 'They gather maple syrup.' (Onondaga, H. Woodbury)

In (53), the bracketed material is identified as an adjunct. Ex. (54) is a construction type that has been called "classificatory" noun incorporation (see Mithun 1984, 1986).

Like many other languages, Yaqui has intransitive classificatory noun incorporation as well.

- |                                                                                                                                                             |                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <p>(55)a. <i>'aapo</i> <i>lioh-nooka</i><br/>         he god-talk:IMP<br/>         'He is praying.'<br/>         (<i>lioh</i> &lt; Spanish <i>dios</i>)</p> | <p>b. <i>'aapo</i> <i>maaso-ye'-e</i><br/>         he deer-dance-IMP<br/>         'He is deer-dancing.'</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|

Finally, Yaqui has possessive constructions using kinship terms that include nominal subject and objects, along with the kinship term carrying T/A/M inflection in the verbal position.

- (56)a. *Huan* *Hose-ta* *sa-ek*  
 John Joe-ACC older.brother-PERF  
 'Joe is John's older brother.'
- b. *Peo* *Alberto-ta* *'uus-ek*  
 Pete Albert-ACC son-PERF  
 'Albert is Pete's son.'

## 7.0 Interrogatives

The syntax of interrogatives in possessive sentences in Yaqui is also of relevance here. A Wh-word, like other quantifiers, cannot be used as the clausal predicate.

- (57) \*Huan hitaa(sa)-k  
John what-(?)-PERF  
[what does John have?]

(The word *hitaa* "what", like its non-interrogative counterpart *hita* "something", does not take an additional *-ta* to mark case.) To ask such a question as (57), it is necessary to use the ordinary transitive *hipue* "have". Thus, (58) can only be used in speaking of alienably possessed items.

- (58) Huan hitaa-sa hipue  
John what-? have  
'What does John have?'

However, Wh-words may be used as subject or object constituents in questions formed on possessive constructions.

- (59) havee hunuka kare-k  
who DEM:ACC house-PERF  
'Whose house is that?'

- (60) Hose hita-sa kare-k  
Joe what-? house-PERF  
'Which house is Joe's?'

Or, the Wh-word can be raised and the subject postposed:

- (61) hita-sa kare-k 'u Hose  
what-? house-PERF DET Joe  
'Which house is Joe's?'

In sum, the behavior of Wh-words is parallel to that of other quantifiers in these possessive sentences.

## 8.0 Conclusions

This survey of the *bahuvrihi* construction types in Yaqui has focused on the distribution of various quantifier types (weak, strong, Determiner, Adverbial) in possessive sentences in the language. We are led to conclude that Yaqui has several types of *bahuvrihi* and related constructions. The simplest type is the possessive sentence where the head noun of the underlying possessed NP raises to check the feature [ROOT] in the verbal position of the clause, as in Ex. (3) above, leaving a trace in the object position. A closely related construction type has some overt complement of the raised noun that receives Accusative case

marking and remains in the object position (Ex. (3)). There are also possessives with relative clauses in the object position, both internally headed and with a head noun (12-14). We have identified also the "use" construction where the object constituent contains a separate head noun, distinct from the noun in the verbal position (48, 49). A subtype here are the constructions that state kinship relations (56). The "use" and kinship construction types that include two nominals (Subject, Object), in addition to the noun in the verbal position, are clearly distinct from the simple *bahuvrihi* constructions that involve the raising of the head noun of the Possessed NP to the verbal position. Finally, we noted the distribution of Wh-words in these possessives. Yaqui resembles other Uto-Aztecan languages in presenting a wide array of possessive construction types; this development of the *bahuvrihis* appears to be unique to Yaqui in the language family.

### References

- Bach, Emmon, Eloise Jelinek, Angelika Kratzer and Barbara Partee, eds. 1995. *Quantification in Natural Languages*. Kluwer.
- Baker, Mark. 1988. *Incorporation, A Theory of Grammatical Function Changing*. Chicago: University of Chicago Press.
- Escalante, F. 1990. *Voice and Argument Structure in Yaqui*. Ph.D. Dissertation. University of Arizona.
- Halle, M. and A. Marantz. 1993. Distributed Morphology and the pieces of inflection. In K. Hale and S. J. Keyser, eds., *The View from Building 20*. Cambridge, MIT Press, 111-176.
- Harley, H. and R. Noyer. 1999. Distributed Morphology. *Glott International* 4.4, 3-9
- Haugen, Jason. 2002. Denominal Verbs in Yaqui. Paper presented at SSILA.
- Jelinek, Eloise. 1998. Voice and Transitivity as Functional Projections in Yaqui. Miriam Butt and Wilhelm Geuder, eds., *The Projection of Arguments*. CSLI, Stanford.
- Jelinek, Eloise and Fernando Escalante. 1988. "Verbless" Possessive Sentences in Yaqui. *In Honor of Mary Haas. Papers from the Haas Festival Conference*, W. Shipley, ed., Mouton.
- Lewis, D. 1975. Adverbs of Quantification. In E. Keenan, ed., *Formal Semantics of Natural Language*, 3-13. New York: Cambridge University Press.
- Milsark, G. 1974. *Existential Sentences in English*. Ph.D. dissertation, MIT.
- Mithun, Marianne. 1984. The Evolution of Noun Incorporation. *Language* 60: 847-95.
- Mithun, Marianne. 1986. On the Nature of Noun Incorporation. *Language* 62:32-38.

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III.4 Heidi Harley and **Eloise Jelinek** (2007) The Yaqui Impersonal as an Existential Verb. Previously unpublished.

This paper proposes that the Yaqui 'passive' suffix *-wa* is a non-active Voice head, which can usefully be glossed as an existential auxiliary verb EXIST. In contrast to a simple copula, the *-wa* EXIST verb has overt existential force. Langacker (1976) identifies *-wa* with Uto-Aztecan *-tʰwa*, 'be'. This paper surveys the environments in which *-wa* occurs, and situates it within the clausal architecture. It then shows that *-wa* constructions truly lack a syntactically realized external argument. Finally, it argues in support of the claim that *-wa* is an existential verb, and discuss its ability to expressthetic judgments. This paper provides the first in-depth discussion of the morphosyntax and semantics of the Yaqui impersonal. The resulting analysis sheds light on the role of Voice in the verbal architecture crosslinguistically and the syntactic status of the 'suppressed' argument in impersonal constructions.

## THE YAQUI IMPERSONAL AS A THETIC CONSTRUCTION\*

Impersonal agreement in a non-agreement language

Impersonals are a language universal construction type which remains relatively unstudied. These constructions show a number of specialized syntactic features related to the fact that they lack a lexical subject with potential deictic properties – that is, they lack a subject that may receive focus. The English impersonals in (1) show pleonastic subjects (“it”, “they”), which may not carry stress.

- 1) a. It is said that Columbus discovered America.
- b. They say that Columbus discovered America.

McCloskey (in press), Stenson (1989) and Harley (2000) have drawn attention to the syntactic and semantic properties of impersonal constructions in Irish and other European languages.

Irish is one of the languages which lack an overt pleonastic subject such as the English “it”.

Impersonals show a special “autonomous” (i.e., subjectless) inflection of the Irish verb, which is historically related to a passive, and is often translated as a passive; the construction is

exemplified in (2):

- 2) cuitear            i mboscai    iad  
    put.PRES.AUT    in boxes      them  
    They are put in boxes. (McCloskey 1c)

To quote McCloskey:

“The puzzle of understanding the autonomous form is ....what becomes of the subject argument of the verb in which the inflection applies....[what] licenses silence where the most prominent argument of the verb ought to be?”

In this paper we document some unusual properties of impersonal constructions in Yaqui, where a similar problem of analysis arises. Yaqui (Hiaki, Yoeme), is a language belonging to the Cahitic branch of Uto-Aztecan, spoken in Arizona and Northern Mexico. Yaqui has a verbal suffix *-wa* that derives an impersonal construction. These impersonals are

often glossed as passives by bilingual native speakers, or as having an ‘understood’ non-referential third person plural human subject (“people, they”). Compare:

- 3) a. Ume ha’amuchim vachi-ta tuuse  
The.pl women.pl corn-acc grind.trans  
The women are grinding corn.
- b. Vachi tuusi-wa  
corn grind.TRANS-*wa*  
Corn is being ground; People/They are grinding corn.

Yaqui has no other passive. Impersonals, like passives, have the discourse function of making it possible to assert the existence of an event or situation without specifying an agent or subject. When a *-wa* construction includes a nominative nominal, as in (3b), this nominal is the accusative object of the corresponding transitive construction, as in (3a).

If an active verb of Yaqui has a direct object, that direct object argument becomes the subject of the corresponding impersonal—it cannot retain its accusative case and direct object status. In this latter respect Yaqui impersonals differ conspicuously from impersonals in Irish and other languages, which retain the same object-marked nominals as the corresponding non-impersonal sentences. We will show below, however, that *-wa* constructions are true impersonals in that they need not have any surface subject whatsoever. Although the construction requires promotion of the object argument if there is one, *-wa* may also perfectly felicitously apply to intransitive verbs, producing a truly subjectless construction.

We propose that the Yaqui suffix *-wa* is a non-active Voice head which can usefully be glossed as an existential auxiliary verb EXST. This verb has overt existential force, as opposed to a simple copula. Langacker (1976) identifies *-wa* with Uto-Aztecan *-tɪwa*, “be”. In the next section, we survey the environments in which *-wa* occurs, and situate it within the clausal architecture. We then show that *-wa* constructions truly lack any syntactically realized external



argument. Finally, we argue in support of the claim that *-wa* is an existential verb, and discuss its ability to expressthetic judgments.

### 1 The distribution of *-wa* as a verbal suffix.

Yaqui is an SOV language with case-marked NPs. Ex.(4a) shows an intransitive sentence; (4b) shows a corresponding impersonal with *-wa*. Note the absence of any overt subject nominal in (4b)—*aman* ‘there’, is an optional adverbial locative element, not a DP.

- 4) a. Ume yoemia aman yaha  
 The.PL people there arrive.PL  
 The people are arriving there.
- b. Aman yahi-wa  
 There arrive.PL-EXST  
 (People, they) are arriving there; Arriving there is going on.

Ex. (5a) below shows a transitive, and (5b) the corresponding impersonal.

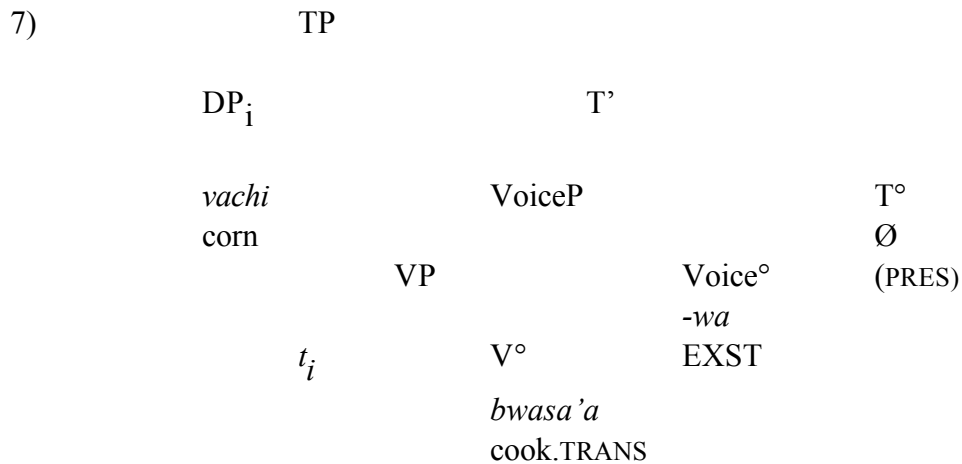
- 5) a. Hose vachi-ta bwasa’a  
 Joe corn-ACC cook.TRANS  
 Joe is cooking corn.
- b. Vachi bwasa’a-wa  
 Corn cook.TRANS-EXST  
 There is corn being cooked; (People, they) are cooking corn.

In terms of its morphological distribution within the verb complex, the suffix *-wa* follows any derivational verbal suffix (illustrated in section 2), and precedes any element from the set of Tense/Aspect suffixes: The following is a paradigm of the Tense/Aspect inflections of the Yaqui verb with *-wa*:

- 6) bwiik-wa sing-EXST  
 bwiik-wa-k sing-EXST-PRF  
 bwiik-wa-n sing-EXST-PST.IMPRF  
 bwiik-wa-ka-n sing-EXST-PST.PPL-IMPF

This distribution suggests that *-wa* occupies an auxiliary or “light” verb projection just

below Tense/Aspect. A Voice projection in this position, between the lexical and functional portions of the clausal architecture, has been proposed by Kratzer (1996), Jelinek (1998) and adopted in Harley (2006), among others. Assuming that *-wa* is located in that Voice head, a partial structure for the impersonal in (5b) is illustrated in (7):



The suffix *-wa* may not attach to any verb that does not refer to an action or experience

of a human being. Compare:

- 8) a. munim      bwase  
 bean-PL      cook.INTR  
 (The) beans are cooking.
- b. \*bwase-wa  
 cook:INTR-*wa*  
 [Cannot mean 'Food/something is cooking'; can only mean (infelicitously)  
 'People are cooking' (unaccusative—that is, in the process of being cooked)]

Similarly, the transitive active sentence in (9a) has no corresponding impersonal:

- 9) a. Tuuka,      ume totoim      sii      voam      yoh-yohta-n  
 Yesterday   the.PL chickens.pl   EMPH   feathers   RED-drop-PST.IMPF  
 "Yesterday, the chickens were dropping a lot of feathers." (i.e. molting)
- b. \*Tuuka      sii      voam      yoh-yohta-wa-n  
 Yesterday   EMPH   feathers   RED-drop-EXST-PST  
 [Cannot mean,  
 "A lot of feathers were dropping yesterday (from unspecified birds)."  
 Can only mean "People were dropping a lot of feathers yesterday."]

Since unaccusative verbs typically do not assign agent or experiencer theta-roles, and consequently typically occur with non-human arguments, many unaccusative verbs in Yaqui exclude *-wa*. However, *-wa* occurs freely with verbs such as “die”, which apparently is interpreted as having an experiencer subject:

- 10) Sawaria-ta-mak                      koko-wa-n                      [FE said -po; **ck**]  
 Yellow.(fever)-ACC-with      die.PL-EXST-PST.IMPF  
 People were dying from yellow fever.

Similarly, verbs of motion, which Harley, Haugen and Tubino (2006) argue are unaccusative in Hiaki, may be marked with *-wa*, since they typically take a human argument:

- 11) Yee-mahta-wa-'a-po                      tenni-wa  
 People-teach-EXST-EV-to      run.PL-EXST  
 People/they are running to school (the place where people are taught).

And certain “psych” verbs may be marked with *-wa*:

- 12) Ne-u    omti-wa  
 me-to    angry-EXST  
 People/they are mad at me; There are people mad at me.

Even the predicative copula may occur with *-wa* in its transitive reading as “serve/act as” = “being”. Compare (13 a,b,c):

- 13) a      Aapo    ya'ut  
           he      leader  
           He is a leader.
- b.      Aapo    ya'ut-tu-n  
           He      leader-be-PST.IMPF  
           He was (used to be) a leader.
- c.      Ya'ut-tu-wa  
           Leader-be-EXST  
           (People, they) are being (acting as) leaders, i.e. assuming authority.

The copula is null in present tense sentences (13a). Overt *-tu* serves as a base for the attachment of other verbal suffixes, including the Tense/Aspect suffixes (13b) and *-wa* (13c).

## 2 -*wa* in derived contexts.

There is both noun and verb incorporation in Yaqui, producing a complex verb which permits -*wa* attachment. (14a) illustrates an active sentence with verb incorporation. (14b) presents the corresponding impersonal with verb incorporation; and (14c) an impersonal with both noun and verb incorporation:

- 14) a. Peo Hose-ta yi'i-mahta-k  
Pete Joe-ACC dance-teach-PRF  
"Pete taught Joe to dance."
- b. Hose yi'i-mahta-wa-k  
Joe dance-teach-EXST-PRF  
Joe was taught to dance; (People, they) taught Joe to dance.
- c. Hose maaso-yi'i-mahta-wa-k  
Joe deer-dance-teach-EXST-PRF  
Joe was taught to deer-dance (People, they) taught Joe to deer-dance.

Among the nominals which may be incorporated are the reflexive pronoun, and an object pronoun referring to humans:

- 15) a. Tu'ii-si emo-ania-wa  
good-ADV self-help-EXST  
People/they are helping themselves/each other well.
- b. Yee-ania-wa  
People-help-EXST  
People/they are helping people; People are being helped.

Compare the following transitive sentence:

- 16) Peo yee-ania-n  
Pete people-help-IMPF.PST  
Pete helped people.

Yaqui has a set of highly productive derivational verbal suffixes that are apparently derived from former lexical verbs that no longer occur independently in the language. (Some other affixal verbs, such as *naate*, 'begin', alternate between free and bound forms, and some

of the suffixes which only occur as bound forms in Yaqui do occur as free verbs in the closely related language Mayo, spoken in Mexico.) In (17), active sentences containing the causative

suffix *-tua* and the directive suffix *-sae* are presented:

- 17) a. Maria Hose-ta yi'i-tua-k  
 Mary Joe-ACC dance-CAUS-PRF  
 Mary made Joe dance.
- b. Maria Hose-ta yi'i-sae-k  
 Mary Joe-ACC dance-DIR-PRF  
 Mary told Joe to dance.

Other similar suffixes that are parallel in this aspect of the morphosyntax include *-ria*, the

benefactive, and *-ii'aa*, meaning “want X to do Y”. All of these constructions allow *-wa*.

- 18) a. Hose yi'i-tua-wa-k  
 Joe dance-CAUS-EXST-PRF  
 Joe was made to dance; People made Joe dance..
- b. Hose yi'i-sae-wa-n  
 Joe dance-DIR-EXST-IMPF.PST  
 Joe was told to dance; People told Joe to dance.
- c. Maria yi'i-ria-wa-n  
 Mary dance-BEN-EXST IMPF.PST  
 Mary was “danced for”; People danced for Mary.
- d. Maria yi'i-'ii'aa-wa-n  
 Mary dance-DESID-EXST-PST  
 Mary was desired to dance; People wanted Mary to dance..

The *-wa* suffix cannot occur inside these derivational morphemes (19). We assume, following e.g. Harley 1995 and later work, that causative, benefactive and other derivational morphemes occupy ‘light’ verbal projections, appearing above the projection which hosts the verbal root but below the inflectional realm. The fact that *-wa* must occur outside these suffixes, as shown by the ungrammaticality of (19e), shows that these light verbal projections also occur below Voice. (This is consistent with the assumptions in the previous literature discussing the

relationship between vP and VoiceP.)

- 19) e. \*Hose yi'i-wa-tua-k  
Joe dance-EXST-CAUS-PRF  
(Would mean: "Jose caused people to dance / caused there to be dancing")

The Hiaki impersonal *-wa*, then, occurs immediately between the lexical layer and the inflectional layer of verbal projections in the clause.

### 3 The Yaqui impersonal does not have a covert subject

We turn now to the question of whether there is a covert external argument in Yaqui *-wa* constructions—a syntactically present null subject, that might be identified as *pro*, or *PRO*.

In languages which allow it, a referential “little” *pro* subject is interpreted according to the

agreement features of the relevant verb, as in a Spanish or Italian sentence:

- 20) *pro* beve molto vino  
\_\_\_\_\_ drink.3SG much wine  
He/she drinks a lot of wine.

The Yaqui verb does not show agreement as to person. Nonetheless in ordinary (non-impersonal) sentences, a subject may be dropped in discourse context. (21a) contains an overt referential subject; (21b) is interpreted in the same way. Note that the direct object retains its

case-marking in (21b):

- 21) a. Vempo pahko-po wakas-ta bwasa'a  
they fiesta-at meat-ACC cook.TRANS  
At the fiesta, they [deictic] are cooking meat.
- b. \_\_\_\_\_ Pahko-po wakas-ta bwasa'a  
fiesta-at meat-ACC cook.TRANS

The omission of the subject in (21b) is licensed in only an appropriate discourse context, where the subject has a specific discourse antecedent; the subject of (21b) is necessarily referential. (21b) cannot be taken as an impersonal. An impersonal interpretation

requires *-wa*, as in (22).

- 22) Pahko-po wakas bwasa'a-wa  
fiesta-at meat cook-EXST  
At the fiesta, meat is being cooked.; People/they are cooking meat.

Next we consider whether Yaqui impersonals might have a PRO subject. "Big" PRO is restricted to non-finite contexts in English, as in (23):  
23) PRO to know him is PRO is to love him.

But this not true of Irish, where autonomous impersonals are finite and yet have a PRO subject (Stenson 1989). However, a more important feature serves to differentiate *-wa* from impersonals in other languages. This is the distribution of case. In pro and PRO contexts, objective case is assigned to any direct object argument of the clause. In transitive impersonals in the European languages, we see patient NPs marked with accusative case. For example, Irish autonomous impersonals differ conspicuously from Yaqui Impersonals in that in transitive impersonals, the single NP, with a patient theta role is marked with objective case.

This is shown in (2) above, repeated here as (24).

- 24) cuitear i mboscai iad  
put.PRES.AUT in boxes them  
They are put in boxes; (They) put them in boxes. (McCloskey 1c)

In contrast, Yaqui speakers strongly reject impersonals of transitives with object case marking on the NP. (25a) confirms that it is ungrammatical for the internal argument of an impersonal construction to retain its direct object marking. Rather, the internal argument appears as a nominative subject as shown in (25b)(=5b); compare also (21b) and (22)).

- 25) a. \*Vachi-ta bwasa'a-wa  
corn-ACC cook-TRANS-EXST  
b. Vachi bwasa'a-wa  
Corn cook.TRANS-EXST  
There is corn being cooked; (People, they) are cooking corn.

The NP with the patient theta-role, ‘vachi’ (“corn”), cannot carry objective case-marking in the *-wa* construction. We conclude that there is no null pro or PRO subject pronoun in the *-wa* construction, since if there were, it would occupy the subject position, preventing the internal argument from becoming the subject. Similarly, the Yaqui impersonal, has no pleonastic subject such as “it”, or “there”, as is frequently seen in impersonals across languages; again, in such a situation, we would expect the Irish pattern, where the object retains its accusative marking. This does not occur in Yaqui. We assume that, unlike an active Voice head, the impersonal *-wa* Voice head introduces no argument whatsoever in its specifier, and assigns no accusative case (Kratzer 1996).

It then follows that in impersonals of intransitive verbs, when no internal argument is available for promotion to subject (as in (4b), repeated below as (26)), the impersonal construction is truly subjectless.

- 26) Aman yahi-wa  
 There arrive.PL-EXST  
 (People, they) are arriving there; Arriving there is going on.

Further, Yaqui has no oblique “by” phrase that may be attached to impersonals (Escalante, 1990a). In short, the missing external argument may not be specified in the construction at all.

#### 4 *-wa* in derived nominals: Asserting the existence of an event

There is a relativizing suffix *-me* in Yaqui that derives nominals which usually refer to the subject of the verb or verb complex to which it attaches. In (27a), an active intransitive clause is given. (27b) illustrates the corresponding subject-nominal form with *-me*:

- 27) a. Hose bwiika  
 Joe sing  
 Joe is singing, sings.



- b. U      bwiika-me  
 The    sing-REL  
 The one who is singing, sings (now)

The nominal of (27b) refers to the subject of a clause bearing tense/aspect information; a contrast between a present-tense interpretation like that in (27b) and a past interpretation in (28a) is possible (employing the past participle suffix *-ka*); further, there is a clear contrast between (27b) and (28a) on one hand and (28b) on the other; (28b) is a derived nominal formed with the agentive suffix *-reo*, not temporally bound.

- 28) a. U      bwiika-ka-me  
 The    sing-P.PPL-REL  
 The one who sang
- b. U      bwiik-reo  
 The    sing-AG.NOM  
 The singer (not temporally bound)

When *-me* is attached to a transitive verb, it again refers to the subject of that transitive verb; the object retains its accusative case:

- 29) a. Peo    uusi-ta      mahta  
 Pete    child-ACC    teach  
 “Pete is teaching the child.
- b. Uu    uusi-ta      mahta-me  
 The.SG child-ACC    teach-REL  
 The one who is teaching the child.

Of course, *-wa* can apply to the verb in (29a), creating a clause in which the object is promoted to become a subject (30a). The nominalizer *-me* can be attached to such an impersonal verb, creating a nominal referring to the derived subject of the verb:

- 30) a. Uusi            mahta-wa  
 child            teach-EXST  
 The child is being taught.
- b. U      mahta-wa-me  
 The    teach-EXST-REL

The one who is being taught, the student.

Importantly, however, one can also attach *-me* to the impersonal form of an *intransitive* verb. Consider the impersonal corresponding to the intransitive clause in (27a), presented in (31). In this sentence, there is no overt syntactic subject, and we have argued in section 3 above that there is no covert syntactic subject either.

- 31) Bwiik-wa  
sing-EXST  
There are people singing.

When the nominalizer *-me* attaches to such subjectless impersonal clauses, the nominal simply refers to the occurrence of an *event*—not to some unspecified subject argument. This confirms the conclusion of the preceding section that *-wa* impersonals of intransitive sentences are truly subjectless. They are simply assertions of events, with no syntactic subject.

- 32) a. Ume bwiik-wa-me  
The.PL sing-EXST-REL  
The (current) singing; the songs that are being sung  
\*The ones who are singing
- b. Ume bwiik-wa-ka-me  
The.PL sing-EXST-P.PPL-REL  
The (previous) singing; the songs that were sung  
\*The ones who were singing

This assertion of an event is a property of all stage-level constructions (Kratzer 1995). It is our claim that *-wa* in stage-level sentences (cf. 27b) makes this property morphologically overt—it is used to assert the occurrence of an event or the existence of a situation.

In the preceding examples, we have seen *-wa* as an existential quantifier. This existential quantifier may also occur under the scope of a generic operator, as we might expect:

- 33) a. Tucson-po, tu'ii-si hiapsi-wa  
Tucson-in, good-ADV live-EXST  
In Tucson, people/they live well.
- b. ume nau weweri-m vit-ta'a-wa

The.PL together relatives-PL see-know-EXST  
People/they recognize relatives;  
Those who are related know each other by sight.

These generic constructions are not temporally restricted, as occurs in the stage-level sentences we have seen above.

## 5 Some typological observations.

In the derivation of impersonals, languages employ a variety of strategies to avoid a referential NP in the subject position. Some languages, including English, employ “it” or a vague “they”, as in “they say...” constructions, as in (1) above. We see the pleonastic “it” in examples like (34):

- 34) a. It’s raining.  
b. It’s late already.

Weather and temporal constructions in Yaqui cannot use *-wa*, which, as noted above, is confined to situations involving human beings. The bare verb, with no AGR, is employed:

- 35) a. yuke                                   It’s raining.  
b. haivu kupte                           It’s late already.

Languages such as French and German have overt impersonal subjects in locative impersonal constructions.

- 36). a. Hier man spricht Deutsch.  
Here IMP speaks German  
b. Ici on parle francais  
Here IMP speaks French

As noted above, Spanish and Italian are pro-drop languages with rich verbal agreement. This agreement licenses an interpretation with a definite subject that has a discourse antecedent. In impersonals in these languages, a reflexive is employed, avoiding a construction with an NP subject.

- 37) Aquí se trabaja mucho,  
Here REFL works a.lot  
People/they work a lot here.

In transitive impersonals, the verb agrees in number with the NP with the object theta role, as in a passive.

- 38) a. Se habla español  
REFL speak.SG Spanish
- b. Aquí se hablan español y portugués  
Here REFL speak.PL Spanish and Portuguese

Objective case, visible with a pronoun, is assigned to an NP with an Object theta role:

- 39) se me ayuda mucho con esto  
REFL 1sg.ACC help a.lot with this.  
People are helping me a lot with this.

The reflexive construction in the impersonal precludes a subject argument.

## 6 Concluding remarks: Impersonals and theticity.

The discourse function of impersonals is to assert that some event or situation obtains, while no semantically “external” argument—a transitive agent or experiencer, or an intransitive subject—is specified. Yaqui *-wa* constructions are taken to apply to some unspecified, maximally vague human plural subject. Weather and temporal sentences exclude *-wa*, since they do not involve human beings.

Since the days of Aristotle, canonical sentences in universal grammar are traditionally held to have a bipartite structure: there is a predicational base, and some predicate assigned to that base, in what is now recognized as a topic/comment structure. Topics are familiar, presuppositional material, while comments are new information in that context. But not all sentences have a topic/comment structure. Sasse (1987), following work by the nineteenth century philosophers Brentano and Marty, notes the contrast between “categorical”

constructions, which in discourse function are bipartite constructions in which a predicate is assigned to a subject, vs. “thetic” constructions that are intended as simple “assertions of states of affairs”. Compare:

- 40) Q. What is my mother doing?  
A. Your mother is CALLING you. (Categorical)
- 41) Q. What is going on?  
A. Your MOTHER is calling you. (Thetic)

Krifka (1991:49) identifies the thetic/categorical contrast as a matter of topic/comment structure; categorical sentences have topics, whereas thetics do not. In (38A), a predicate is assigned to a subject which is the topic of the sentence (“your mother”). In contrast, (39A) is a thetic construction, which identifies some event as a whole. The shift of the peak stress in the English example (39A) to the subject NP shows that the entire utterance is in focus, and that there is no topic/comment structure.

Across languages, we see a number of syntactic devices employed to derive thetic constructions, where there is no topical subject. Kuroda (1972) analyzes the *-ga/-wa* contrast in Japanese as marking a thetic/categorical contrast.

- 42) a. Neko ga asoko de nemutte iru (Thetic)  
cat NOM there sleep is  
“The/a cat is sleeping there”
- b. Neko wa asoko de nemutte iru (Categorical)  
cat TOP there sleep is  
“The/a cat is sleeping there”

The sentence in (42a), where the subject is marked with the *-ga* particle, is appropriate for reporting a thetic judgment, for example, perception of a situation in which a/the cat is sleeping in a certain place—it asserts the existence of the eventuality. The sentence in (42b), with the *-wa* particle on the subject, reports a categorial judgment about a specific, presupposed cat; it says,

of that cat, that it is sleeping there. The bare noun in (42b) cannot be understood as a nonspecific indefinite.

The Yaqui *-wa* Impersonals exclude the expression of a semantically “external” argument and thus avoid subjects that are topics. Crucial support for the claim that there is no thematically external argument in Yaqui impersonals—a putative empty category in that position—is the promotion of a thematically internal argument to an IP position, as shown in section 3 above.

Other languages mentioned here derive impersonals via various constructions that avoid a subject that serves as a predicational base; thus we see *pro* and *PRO* constructions. Stenson (1989) argues that the subject argument in Irish Impersonals is *PRO*. The fact that in transitive Impersonals in Irish, an internal object NP receives objective case marking, is evidence for a (non-topical) subject argument in IP.

Indefinites cannot be topical; they are not presuppositional. The LF locus of indefinites is the VP (Diesing 1992), and sentences with indefinite subjects are thetics that lack a topic/comment structure. Some languages elect to exclude simple sentences with indefinite subjects entirely; Egyptian Arabic is an example (Jelinek 1981; Diesing and Jelinek 1995).

44) a. \*kaan walad 9al-baab  
Was boy at.the-door  
[a boy was at the door]

b. kaan fiih walad 9al-baab  
Was in.it boy at.the-door  
There was a boy at the door.

Both Yaqui impersonals and Egyptian Arabic locative existential sentences as in (44) lack a topic/comment structure. When there is no topic/comment structure, the entire clause is under focus, and there is an existential interpretation.

Other languages (Irish, Spanish) that we have briefly surveyed show overt objective case marking in transitive Impersonals -- evidence that they have an EC in subject position. In sum, in this very small and biased sample, we have seen the following strategies employed to avoid a topical subject NP in Impersonals:

- 46) a. Pleonastic subjects: English “one, they”; German “man”, French “on”, etc.  
b. PRO subject, as in Irish.  
c. Impersonals as reflexive constructions: Spanish, Italian “se”, “si”.  
d. Yaqui *-wa*, which casts Impersonals as “agentless” existentials..

Pleonastics, PRO, and reflexives cannot serve as topics, since they are not presuppositional. Impersonals are universallythetic constructions. While all the syntactic strategies listed in (46) for deriving impersonals succeed in precluding a topic/comment structure, only Yaqui does so by excluding any potentially topical argument whatever, without relying on dummy subjects or reflexives, etc. It will be of interest to determine how commonly this typological feature is present in impersonals in universal grammar.

## References

- Diesing, M. 1992. Indefinites. Cambridge, MA: MIT press
- Diesing, M. & Jelinek, E. 1995. Distributing arguments, *Natural Language Semantics* 3, 123-76.
- Escalante, F. 1990a. Setting the record straight on Yaqui passives. *IJAL* 56:289-92.
- Escalante, F. 1990b. Voice and Argument Structure in Yaqui. Ph.D. dissertation, University of Arizona.

- Harley, H. 1995. Subjects, events and licensing. PhD. dissertation, Massachusetts Institute of Technology.
- Harley, H. 2000. Irish, the EPP, and PRO. Ms, University of Arizona. Available at <http://dingo.sbs.arizona.edu/~hharley/PDFs/HarleyIrish&PRO2000ms.pdf>
- Harley, H. 2006. Revisiting Voice: Lessons about VP from Applicatives, Causatives and Impersonals in Hiaki. Talk presented at the University of Arizona, October 12, 2006.
- Harley, H., J. Haugen and M. Tubino-Blanco. 2006. Applicative constructions and suppletive verbs in in Hiaki (Yaqui)". In the proceedings of the Complex Predicates Workshop, Rice University, March 16-18, 2006.
- Jelinek, E. 1991. Impersonal passives and stage/individual level predicates. Proceedings of the West Coast Conference on Formal Linguistics 10, Arizona State University, Tempe.
- Jelinek, E. 1981. On Defining Categories: AUX and PREDICATE in Colloquial Egyptian Arabic. Ph.D. dissertation, University of Arizona.
- Jelinek, E. 1998. Voice and transitivity as functional projections in Yaqui. In M. Butt and W. Geuder (eds.), *Projections from the Lexicon*, 177–206. CSLI: Stanford
- Kratzer, A. 1996. 'Severing the external argument from its verb.' In J. Rooryck and L. Zaring (eds.) *Phrase Structure and the Lexicon*. Dordrecht: Kluwer Academic Publishers. 109-137.
- Kratzer, A. 1995. Stage-level/individual-level predicates. In *The Generic Book*, G.N. Carlson and F.J. Pelletier (eds.), 125–175. Chicago: University of Chicago Press.
- Krifka, Manfred 1991. A Compositional Semantics for Multiple Focus Constructions. Proceedings from the First Conference on Semantics and Linguistic Theory (SALT 1), 127-158.
- Kuroda, S.-Y. 1972. The categorical and the thetic judgment. *Foundations of Language*



9:153-185.

Langacker, R. W. 1976. Non-distinct arguments in Uto-Aztecan. University of California

Publications in Linguistics 82. Berkely and Los Angeles: University of California.

McCloskey, J. In press. The grammar of autonomy in Irish. In D. Gerdts, J. Moore & M.

Polinsky, (Eds.) Hypothesis A/Hypothesis B: Linguistic Explorations in Honor of David

M. Perlmutter. Cambridge, MA: MIT Press.

Sasse, H.-J. 1987. Thethetic/categorical distinction revisited. *Linguistics* 25:511-580.

Stenson, N. 1989. Irish autonomous impersonals. *Natural Language and Linguistic Theory* 7

(3): 373-406.

**Eloise Jelinek**  
**(1924-2007)**  
**Curriculum Vitae**

**EDUCATION**

Ph.D., 1981. University of Arizona, Linguistics.

Title of Dissertation: "On Defining Categories: AUX and PREDICATE in Colloquial Egyptian Arabic." Dissertation Advisor: Adrian Akmajian

B.A. M.A., University of Michigan, Anthropology, with Major in Linguistics. Honors.

**APPOINTMENTS**

- Professor Emerita, University of Arizona. Retired June 1992.
- Assoc. Research Scientist, Cognitive Science, University of Arizona.
- Yaqui Language Workshop. Summer Session, University of Arizona, 1995 to 2001.
- Visiting Faculty, Mathesius Institute, Charles University, Prague, Summer 1995.
- Director, Yaqui Dictionary Project, Bureau of Applied Research in Anthropology, University of Arizona. 1992 - 1993.
- Faculty, LSA Linguistic institute, University of Arizona, Summer 1989.
- Research Associate, Linguistics, University of Arizona, 1978 - 1979. AUX Project, sponsored by the National Science Foundation.

**GRANTS AND AWARDS**

- National Science Foundation. Grant for Workshop on Athabaskan Morphosyntax, held at the Linguistic Institute, University of New Mexico, 1995. With Mary Willie.
- Charles University, Prague. Faculty support grant for the Mathesius Institute, 1995.
- Social and Behavioral Sciences, University of Arizona. Mini-grant for cross-language research on the syntax and semantics of pronouns, in collaboration with Molly Diesing. 1991 - 1992.
- Graduate College, University of Arizona. Grant for a Conference on Native American Languages and Literature, April, 1990. With Ofelia Zepeda and Mike Hammond.
- Lindley Foundation. Grant for field work on the Choctaw language; in Broken Bow, Oklahoma, Summer 1990.
- National Science Foundation Grant for a Conference on Non-Standard Case and Argument Structure. Linguistic Institute, University of Arizona, July 1989.
- Wenner-Gren Foundation Grant for field work on Samish (Coast Salish) summers of 1987 and 1988.
- Lindley Foundation, Grant for field work on Samish (Coast Salish), Summer 1986.
- University of Groningen, the Netherlands. Travel grant to present invited papers at conferences at the Universities of Groningen and Amsterdam, April 1986.
- National Science Foundation. Travel grant to attend the 1985 International Conference on Historical Linguistics in Pavia, Italy, to present invited paper.
- Jacobs Fund, Whatcom Museum Foundation, Grant for field work on Nisgha (Tsimshian), Summer 1985.
- American Philosophical Society, Grant for field work on Lummi, (Coast Salish), Summer 1982.

## PUBLICATIONS

### EDITED VOLUMES

- Carnie, Andrew, **Eloise Jelinek** and Mary Willie (2000) *Papers in Honor of Ken Hale. MIT Working Papers in Endangered and Less Familiar Languages* 1. Cambridge: MITWPL
- Jelinek, Eloise**, Sally Midgette, Keren Rice and Leslie Saxon (1996). *Athabaskan Language Studies. Essays in Honor of Robert W. Young*. University of New Mexico Press, 1996.
- Bach, Emmon, **Eloise Jelinek**, Angelika Kratzer and Barbara Partee (1995) *Quantification in Natural Languages*, Dordrecht: Kluwer.

### JOURNAL ARTICLES AND BOOK CHAPTERS

- Jelinek, Eloise** (2007) Review of Zarina Estrada Fernández, Crescencio Buitimea Valenzuela, Adriana Elizabeth Gurrola Camacho, María Elena Castillo Celaya, and Anabela Carlón Flores. *Diccionario yaqui–español y textos: Obra de preservación lingüística. International Journal of American Linguistics*. 73: 377-378
- Jelinek, Eloise** (2006) The pronominal argument parameter. In Peter Ackema (ed) *Arguments and Agreement*. Oxford Oxford University Press. pp 261-288
- Jelinek, Eloise** and Andrew Carnie (2003) Argument Hierarchies and the Mapping principle Carnie, Andrew, Harley, Heidi Willie, MaryAnn (eds.) *Formal Approaches to Function in Grammar*. Amsterdam: Benjamins. pp. 265-96
- Kenneth L. Hale, **Eloise Jelinek** and MaryAnn Willie (2003) Topic and Focus Scope Positions in Navajo. In Simin Karimi (ed). *Word order and Scrambling*. Malden: Blackwell Publishers. 1-21.
- Jelinek, Eloise** (2002) *Agreement, Clitics and Focus in Egyptian Arabic*. in Jamal Ouhalla, and Ur Shlonsky (eds); *Themes in Arabic and Hebrew Syntax*. Dordrecht, Netherlands: Kluwer Academic. pp. 71-105
- Jelinek, Eloise** and Fernando Escalante (2001) Unaccusative and Unergative Verbs in Yaqui, in Eugene Casad, and Thomas L. Willett (eds.) *Uto-Aztecan: structural, temporal and geographic perspectives: Papers in honor of W. Miller*. Hermosillo: Universidad Autonoma de Sonora. pp. 171-204.
- Jelinek, Eloise** (2001) Review of John Dedrick and Eugene Casad (1999) Sonora Yaqui Language Structures. *Journal of Linguistic Anthropology* 11: 162.
- Jelinek, Eloise** (2000) Predicate Raising in Lummi, Straits Salish. In Andrew Carnie and Eithne Guilfoyle (eds.) *The Syntax of Verb Initial Languages*. Oxford: Oxford University Press. pp. 213-233.
- Willie, Mary Ann and **Eloise Jelinek** (2000) Navajo as a Discourse Configurational Language. In Theodore Fernald and Paul Platero, eds., *Athabaskan Syntax: Perspectives on a Language Family*. Oxford. pp. 252-278 [included in volume]
- Demers Richard, Fernando Escalante and **Eloise Jelinek** (1999) Prominence in Yaqui words. *International Journal of Linguistics* 65: 40-55

- Jelinek, Eloise** (1998) Voice and transitivity as functional projections in Yaqui. In Miriam Butt and Wilhelm Geuder (eds) *The projection of arguments: Lexical and compositional factors*. Stanford: CSLI Productions. Pp 195-225.
- Jelinek, Eloise** (1998) Prepositions in Northern Straits Salish and the noun/verb question. In Czaykowska-Higgins, Ewa and M. Dale Kinkade, eds., *Salish languages and linguistics: theoretical and descriptive perspectives*. Mouton. pp 325-348.
- Jelinek, Eloise** and Richard Demers (1997) Reduplication as a Quantifier in Salish. *International Journal of American Linguistics* 63: 302-315 [included in volume]
- Jelinek, Eloise** (1996) "Definiteness and Second Position Clitics in Straits Salish." In Aaron Halpern and Arnold Zwicky, (eds.) *Approaching Second: Second Position Clitics and Related Phenomena*, Stanford: CSLI. Pp 271-297
- Jelinek, Eloise** and Mary Ann Willie (1996). "Psych Verbs in Navajo." In Eloise Jelinek, Sally Midgette, Keren Rice and Leslie Saxon (eds.) *Athabaskan Language Studies. Essays in Honor of Robert W. Young*. University of New Mexico Press. pp. 15-34
- Jelinek, Eloise** (1995) "Quantification in Straits Salish." In Emmon Bach, Eloise Jelinek, Angelika Kratzer and Barbara Partee, (eds.) *Quantification in Natural Languages*. Dordrecht: Kluwer. Pp. 487-540
- Deising, Molly and **Eloise Jelinek** (1995) Distributing Arguments. *Natural Language Semantics* 3: 123-176. [included in volume]
- Jelinek, Eloise** and Richard Demers (1994) Predicates and Pronominal Arguments in Straits Salish. *Language* 70: 697-736. [included in volume]
- Jelinek, Eloise** (1990). Grammatical Relations and Coindexing in Inverse Constructions. In Dziwirek, Katarzyna; Farrell, Patrick and Mejias-Bikandi, Errapel (eds.); *Grammatical Relations: A Cross-Theoretical Perspective*. Stanford, CA: Center for Study of Lang. & Information Systems. pp. 227-246
- Jelinek, Eloise** (1988) 'Verbless' Possessive Sentences in Yaqui. In Shipley, William (ed.) *In Honor of Mary Haas: From the Haas Festival Conference on Native American Linguistics*. Berlin: Mouton de Gruyter. pp. 411-429
- Sandoval, Merton and **Eloise Jelinek** (1989) The bi-construction and pronominal arguments in Apachean. In Keren Rice and Ed Cook (eds) *Athapaskan Linguistics: Current Perspectives on a Language family*. Berlin: Mouton. pp. 335-377
- Jelinek, Eloise** (1989). "The Case Split and Argument Type in Choctaw." In Maracz, Lazlo K. and Pieter Muysken (eds.), *Configurationality: The Typology of Asymmetries*. Dordrecht: Foris. pp 117-141
- Jelinek, Eloise** (1987) Headless Relatives and Pronominal Argument; A typological perspective. In Kroeber, Paul D. and Robert E. Moore (eds.) *Native American Languages and Grammatical typology: Papers from a Chicago Linguistics Society Parasession*. Bloomington: Indiana Linguistics Club. pp. 136-147.
- Jelinek, Eloise** (1987) Auxiliaries and Ergative Splits: A Typological Parameter. in Harris, Martin and Ramat, Paolo (eds.). *Historical Development of Auxiliaries*. Berlin: Mouton de Gruyter. pp. 85-108.
- Jelinek, Eloise** (1984). Empty Categories, Case and Configurationality. *Natural Language and Linguistic Theory* 2: 39-76.

- Jelinek, Eloise** and Richard Demers (1983) The Agent Hierarchy and Voice in Some Coast Salish Languages. *International Journal of American Linguistics* 49: 167-185.
- Jelinek, Eloise** (1983) Person-Subject Marking in AUX in Egyptian Arabic. In Frank Heny and B. Richards (eds.) *Linguistic Categories: Auxiliaries and related puzzles*. Dordrecht: Reidel. Pp. 21-46.
- Jelinek, Eloise** (1981) Review of Alice Freed: *The Semantics of English Aspectual Complementation*. Synthese Language Library, Vol. 8, Dordrecht, 1979. *Synthese* 53.143-53.
- Jelinek, Eloise (1981). "Egyptian Arabic", in Susan Steele (ed) with Adrian Akmajian, Richard Demers, Eloise Jelinek, Chisato Kitagawa, Richard Oehrle, and Thomas Wasow *An Encyclopedia of Aux*, Cambridge MIT Press.
- Jelinek, Eloise and Chisato Kitagawa (1981) "Some Properties of Purpose and Consequence Constructions", *Metropolitan Linguistics*, Linguistic Circle of Metropolitan University, Tokyo.

#### WORKING PAPER AND CONFERENCE PROCEEDINGS

- Jelinek, Eloise** (2003) Quantification in Yaqui Possessive Sentences. *MIT Working Papers in Endangered and Less Familiar Languages* 5. 201-214
- Jelinek, Eloise** (2000). "Datives and Argument Hierarchies". In Andrew Carnie, Eloise Jelinek, and Mary Willie (eds) *Papers in Honor of Ken Hale. MIT Working Papers in Endangered and Less Familiar Languages* 1: 51-70.
- Jelinek, Eloise** (1999) "Wh-clefts in Lummi". Proceedings of WECOL 1998, Arizona State University, Tempe. 211-229
- Jelinek, Eloise** (1999) Pronoun Classes and Focus. *University of Massachusetts Occasional Papers in Linguistics*, 1998, 21, 143-160
- Jelinek, Eloise** (1998). "Wh-clefts in Lummi." Proceedings of the 33rd International Conference on Salish and Neighboring Languages, University of Washington, Seattle. 257-265.
- Jelinek, Eloise** (1997) Topic and Focus in Navajo Inverse. *Proceedings of the West Coast Conference on Formal Linguistics* 15: 241-255
- Jelinek, Eloise** and Richard Demers (1996) Reduplication, Quantification, and Aspect in Straits Salish. *Proceedings of the 31st International Conference on Salish and Neighboring Languages*, University of British Columbia, Vancouver 75-78.
- Jelinek, Eloise** (1993) "Prepositions and the Domains of Incorporation." *Proceedings of WECOL* 1993, 212-232.
- Jelinek, Eloise** (1993) "Prepositions in Straits Salish and the Noun/Verb Question". Working Papers of the 28th International Conference on Salish and Neighboring Languages, University of Washington, Seattle, pp. 159-174.
- Deising Molly and **Jelinek, Eloise** (1993) The Syntax and Semantics of Object Shift. *Working Papers in Scandinavian Syntax* 51:1-54.
- Jelinek, Eloise** (1993) Languages without Determiner Quantification pp. IN: Guenter, Joshua S. (ed.); Kaiser, Barbara A. (ed.); Zoll, Cheryl C. (ed.); Proceedings of the Nineteenth Annual Meeting of the Berkeley Linguistics Society 404-422

- Jelinek, Eloise** (1993) Ergative Splits and Argument Type. *Papers on Case and Agreement. MIT Working Papers in Linguistics* 18: 15 – 42.
- Jelinek, Eloise** (1991) Impersonal Passives and Stage/Individual Level Predicates. *Proceedings of the West Coast Conference Formal Linguistics 10*. CSLI, Stanford. 235-246.
- Jelinek, Eloise** and Fernando Escalante (1989) Double Accusative Constructions in Yaqui. *Proceedings of the Pacific Linguistics Conference*, University of Oregon, Eugene. 120-132
- Jelinek, Eloise** (1986) The Ergativity Hypothesis and the Argument Hierarchy in Nisgha. *Papers from the 21<sup>st</sup> International Conference on Salish and Neighboring Languages*, Seattle. 7-17
- Jelinek, Eloise** (1986) Yaqui Minus Control. *Proceedings of the Second Pacific Linguistics Conference*, University of Oregon, Eugene. **PAGE**
- Jelinek, Eloise** and Richard Demers (1985). Constraints on Arguments in Lummi, *Proceedings of 20th International Conference on Salish and Neighboring Languages*, Vancouver, B.C. 169-189
- Jelinek, Eloise** (1985) "Ergativity and the Argument Type Parameter". *Proceedings of the First Pacific Linguistics Conference*, University of Oregon, Eugene. **PAGE**
- Richard Demers and **Eloise Jelinek** (1984) Word-Building Rules and Grammatical Categories in Lummi. *Working Papers of Ling. Circle of Univ. of Victoria*, 4 (2): 39-49.
- Eloise Jelinek** and Richard Demers (1983). On the Absence of Empty Categories in Lummi. *Proceedings of the 18th International Conference on Salish and Neighboring Languages*, University of BC, Vancouver, B.C.. 313-333
- Jelinek, Eloise** (1983) Case and Configurationality, *Coyote Papers Working Papers in Linguistics* 5: 73-108.
- Jelinek, Eloise** and Richard Demers (1982) Adjoined Clauses in Lummi. *Working Papers for the 17th International Conference on Salish and Neighboring Languages*. Portland State University, Portland. 205-245
- Demers, Richard and **Jelinek, Eloise** (1982) The Syntactic Functions of Person Marking in Lummi. *Working Papers, 17th International Conference on Salish and Neighboring Languages*, Portland, Oregon. 24-47.
- Demers, Richard and **Jelinek, Eloise** (1981) An Agent Hierarchy in Some Coast Salish Languages. *Occasional Papers in Linguistics No. 2, University of Montana, 16th International Conference on Salish and Neighboring Languages*. 31-62

#### CONFERENCE PRESENTATIONS AND INVITED LECTURES

2000. "Scrambling in Navajo." With Ken Hale and Mary Willie. Paper for the International Conference on Scrambling and Word Order, University of Arizona.
2000. "Zeros and Reference." Invited paper, for GLOW 2000, Bilbao
1999. "Datives and Argument Hierarchies." Paper presented at WCCFL, University of Arizona, Tucson.
1998. "Wh-clefts in Salishan." Paper presented at WECOL, Arizona State University, Tempe.
1998. "Focus and Argument Structure." Linguistics Colloquium, University of Arizona.

1997. "Functional Projections and Clitics." Invited Colloquium, Arizona State University, Tempe.
1996. "Anaphora and Focus in Navajo". Invited address, WCCFL, University of California at Irvine.
1996. "Transitivity and Voice in Yaqui." Linguistics Colloquium, University of Arizona, Tucson.
1996. "Navajo as a Discourse Configurational Language." Athabaskan Workshop, Swarthmore College. With Mary Willie.
1996. "Reduplication, Quantification, and Aspect in Straits Salish." Paper for the 31st ICSNL, University of British Columbia, Vancouver. With Richard Demers.
1995. "Functional Projections in Yaqui." Paper presented at the annual meeting of the Society for the Study of the Indigenous Languages of America, Linguistic Institute, San Diego.
1995. "Agreement, Clitics and Focus in Egyptian Arabic." Linguistics Colloquium, University of Arizona.
1995. "Pronoun Classes and Focus." Workshop on Focus, University of Massachusetts at Amherst.
1995. "Psych-Verbs in Navajo." Athabaskan Conference, Linguistic Institute, University of New Mexico. With Mary Willie.
1995. "The Compositionality of Argument Structure in Lummi". Paper presented at the 30th ICSNL, University of Victoria, British Columbia.
1995. "Argument Structure in Some Native American Languages." Invited lecture series presented at the Mathesius Institute, Charles University, Prague.
1994. "Transitivity and Voice in Lummi". Paper presented at the 29th ICSNL, Salish-Kootenai Community College, Pablo, Montana.
1993. "Languages without Determiner Quantification." Invited paper at BLS, University of California at Berkeley.
1993. "Pronoun Attachment to the Verb in Navajo." Paper presented at the Athabaskan Conference, Santa Fe. With Mary Willie.
1993. "Quantification in Possessive Sentences in Yaqui." Paper presented at SSILA, Linguistics Institute, Columbus, Ohio. With Fernando Escalante.
1993. "Definiteness and Second Position Clitics in Straits Salish." Paper presented at the Conference on Second Position Clitics at the LSA Linguistics Institute, the Ohio State University, July 1993, organized by Arnold Zwicky and Aaron Halpern.
1993. "Incorporated Prepositions". Invited paper, WECOL, University of Washington, Seattle.
1992. "Ergativity and Argument Type". Invited lecture, MIT.
1992. "Distributing Arguments". Invited address, WECOL, Tucson, Arizona.
1992. Colloquia presented at MIT, Cornell University, and the University of Massachusetts at Amherst; with Molly Diesing.
1991. "Yaqui Possessive Sentences". Paper presented at the LSA Annual Meetings, Chicago.
1991. "Impersonal Passives and Stage/Individual Level Predicates." WCCFL 1990, Arizona State University, Tempe.
1991. "Lexical Categories in Universal Grammar." Keynote address, FLSM II, University of Michigan, Ann Arbor.

1991. "Clitics, Focus and Voice in Yaqui." Uto-Aztecan Conference, Santa Cruz. With Fernando Escalante.
1991. "Arguments and Adjuncts in Navajo." Athabaskan Conference, Santa Cruz. With Ken Hale and Mary Willie.
1991. "Person hierarchies and ergative splits". University of Arizona Colloquium.
1990. "Grammatical Relations and Coindexing in Inverse Systems." Paper presented at the 5th Biennial Conference on Grammatical Relations, University of California at San Diego.
1990. "Syntax without Nouns and Verbs". Cognitive Science Brown Bag Series, University of Arizona.
1990. "Voice in Navajo". Athabaskan Conference, University of British Columbia, Vancouver.
1990. "Quantification in Salish". Paper presented at the ICSNL, University of British Columbia, Vancouver.
1990. "Active/Stative Case in Muskogean." Annual Summer Meeting of the Society for the Study of the Indigenous Languages of America, University of British Columbia, Vancouver.
1989. "Case Splits and Argument Type". Paper presented at the NSF Conference on Non-Standard Case and Argument Structure, Linguistics Institute, Tucson.
1989. "The Case Split and Switch Reference in Muskogean" SSILA Summer Meeting, Linguistics Institute, Tucson.
1989. "Argument Type in Athabaskan: Evidence from Noun Incorporation", Conference on American Indian Languages, Annual Meeting of the American Anthropological Association, Washington, DC.
1989. "External Arguments in an Active-Stative Language: Choctaw." Invited paper, MIT Conference on External Arguments, organized by Carol Tenny.
1988. "Native American Languages and Language Universals", and "Internal and External Arguments"; two invited lectures given at Carleton College, Northfield, Minnesota, May 1988.
1988. "Yaqui Voice Alternations and Argument Focus", Paper presented at the Uto-Aztecan Conference, Reno, Nevada.
1988. "The Languages of Native America", Invited Weekend Workshop at Idyllwild College, Idyllwild, California.
1988. "Incorporation in Yaqui", paper presented at the Conference on American Indian Languages, Annual Meeting of the American Anthropological Association, Tempe, Arizona. With Fernando Escalante.
1988. "Quantification without Nouns in Coast Salish", invited paper presented at a Symposium on Cross-Linguistic Quantification, organized by Barbara Partee, Emmon Bach, and Angelika Kratzer, LSA Annual Meetings, New Orleans.
1987. "Yaqui Complex Verbs." Linguistics Colloquium, University of Arizona.
1987. "Contrasts in Argument Type." Invited paper, Summer Institute of Linguistics Conference, Catalina, Arizona.
1987. "Dative Movement in Yaqui", paper presented at the Uto-Aztecan/ Hokan-Penutian workshop, University of Utah, Salt Lake City. With F. Escalante.)
1987. "Modality in Samish". Paper presented at the 22nd ICSNL, Victoria, B.C.
1987. "Headless Relatives". Paper presented at a CLS Parasession, University of



- Chicago, Chicago.
1987. "Some Problems With Mapping Conventions in Navajo". Paper presented at the Athabaskan Conference, Victoria, B.C. With Mary Willie.
1987. "Passives, Impersonals, and Middles in Yaqui". Paper presented at the Conference on American Indian Languages, Annual Meetings of the American Anthropological Association, Chicago. With Fernando Escalante.
1987. "On Resolving a Paradox in the Analysis of Navajo Syntax". LSA Annual Meeting, San Francisco.
1986. "Warlpiri as a Pronominal Argument Language", invited paper, MIT Workshop, January 9, 1986.
1986. "Warlpiri as a Non-Configurational Language", keynote address for Configurationality Conference in Groningen, The Netherlands.
1986. "Pronominal Arguments and Non-configurationality", invited paper presented at conference in Amsterdam, The Netherlands.
1986. "Some Properties of Pronominal Argument Languages", invited colloquium presented at the University of California at Berkeley, May, 1986.
1986. "Possessive Sentences in Yaqui." Paper presented at the Haas Festival Conference, Santa Cruz. With Fernando Escalante.
1986. "Possibility and Necessity in Natural Language", paper presented at the LSA Annual Meeting, New York.
1985. "Auxiliaries and Ergative Splits". Seventh International Conference on Historical Linguistics. Pavia, Italy. (Invited paper).
1985. "The Projection Principle and the Argument Type Parameter", LSA Annual Meetings, University of Washington, Seattle.
1985. "Complex Verbs in Yaqui". Paper presented at the Friends of Uto-Aztecan Conference, Tucson. With Fernando Escalante.
1984. "The Ergative Split in Warlpiri", Linguistics Colloquium, University of Arizona.
1982. "The Syntactic Categories of Egyptian Arabic", Linguistics Colloquium, University of Arizona.
1980. "Person-Subject Marking in AUX in Egyptian Arabic", paper presented at the Fourth Groningen Round Table Conference, July 1980. Groningen.

#### MANUSCRIPTS:

Jelinek, Eloise (1999) *Pronominal Arguments and Information Structure*. Was supposed to appear in *Pronominal Arguments: Morphology and Syntax*. Johannes Helmbrecht and Dagmar Jung, eds., Benjamins. But was never published.

#### LANGUAGE INSTRUCTION MATERIALS

- 1997, 1998. Revised *Yaqui Language Workbook*. University of Arizona, MS.
1996. *Yaqui Language Workbook*. University of Arizona, Southwest Indigenous Languages Workshop. With Maria Amarillas, Frances Delgado, Rosa Estrella, Raquel Garcia, Maria Molina, and Sofia Morales (Yaqui language teachers in bilingual education, Pascua Yaqui tribe). Copyright: Pascua Yaqui Tribe.

#### SERVICE