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 treat 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.[1] 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 (2000), and to a certain extent Isaak (2000), the effects of argument hierarchies follow from a correspondence—formally encoded—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 claim that argument hierarchies are the 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 a 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 (2002).

2.   The Mapping Principle

Argument hierarchies come in a number of different types cross-linguistically. We find hierarchies based on definiteness/animacy/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. on the hierarchy these elements are more likely to be asserted than presupposed.

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 presuppositional 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 what 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[2]. 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$_{x,y}$ [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.

(4)

TP

Restrictive clause

VP
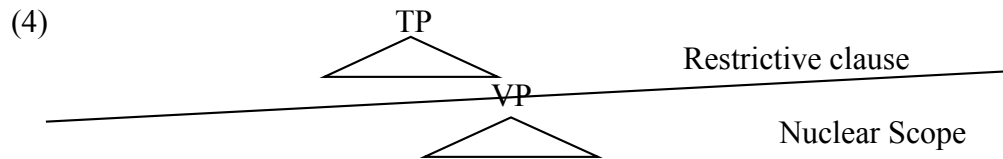
Nuclear Scope

On a more formal level, only variables are allowed in the nuclear scope. These 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 be 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[3] 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[4] as means of describing presuppositionality. We follow the writings of Partee, Heim, Diesing et al. in identifiying topic/focus structure as the information

structure of the sentenc. Old (presuppositional) information in the sentence is topical, familiar and backgrounded. New information in the sentence is unfamiliar and focused. Across langauges, 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 in English, and with Topic and Focus particles 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 (2002). 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 (2001, XXXX). 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:

(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.

(8)
```
        AspP
       /    \
            Asp'
           /    \
        Asp      VP
                /  \
               V    O
```
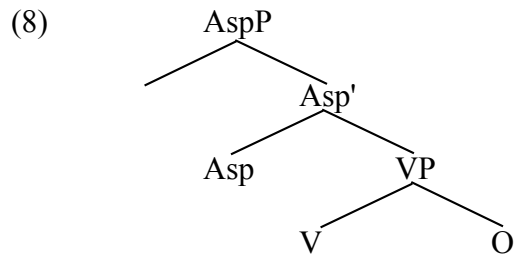
The link between aspect, aktionsarten and objects is well known (see among many others Tenny 19XX), and is expressed in this phase. The second phase in a transitive clause contains the external argument introducing light predicate (v), the subject NP and Tense:

(9)
```
        TP
       /  \
           T'
          /  \
         T    vP
             /  \
            S    v'
                /  \
               v    …
```
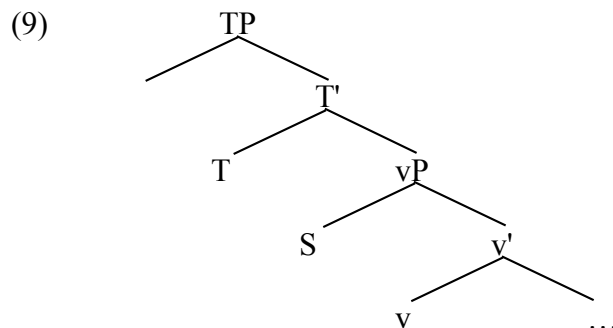
As should be obvious from combining the two trees in (8) and (9), this particular view requires the split VP or inner aspect approach of Travis

(19XX) and Koizumi (1993, 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 (see Larson 1988, Collins and Thráinsson 19XX). The nature of the spacio-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 (2002) 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 kissing the kid (when I walked into the room).

We follow Chomsky (2001) 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)   [$_{AspP}$ Prog [$_{VP}$ kiss [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→ Asp → vP).

(12)   [$_{AspP}$ [the boy]$_i$ Prog [$_{VP}$ kiss t$_i$]]

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. Let us call the structure in (12) = Z. The next phase contains Z, but may not refer to nor interpret its contents:

(13)   [$_{TP}$ There T [$_{vP}$ some linguist [$_{v'}$ 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 the shifted goals with ditransitive verbs appear shifted in the higher phase as well (the appear to the left of both shifted and unshifted objects). We attribute this to case and use the notion of phase edge to derive the result. Similarly, cases of split ergativity, clearly require situations where objects move into higher phases to get absolutive/nominative case (see Carnie 2002) 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.

3. 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.

3.1 Object Shift/Scrambling[5].

We have already seen one example of object shift in this paper, that of the positioning of specific DPs in German, seen in examples (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 Malagasy (Rackowski and Travis 2000), and Mayan (Carnie 2002), and verb/object ordering in Scots Gaelic (Adger 1997), and particle shift in English (Diesing and Jelinek 1995) to name only a few.

3.2   *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-i aldi

Ali one book-ACC bought

"A book is such that Ali bought it."

b)   Ali bir kitap   aldi

Ali one book bought

"Ali bought some book or another."

Overt accusative marking correlates to specificity/presuppositionality. This is evidenced further 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-ɨ 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)   … [AspP   ACC   [VP   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.

3.3   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 object by contrast cannot (data from Diesing and Jelinek 1995: 144)

(17)   a.   ma-biyibiiʕ-hum-š

NEG-selling-THEM-NEG

"he isn't selling them"

b.   * ma-biyibiiʕ-š humma

NEG-selling-NEG they

c.   ma-biyibiiʕ-š burtu'aan.

NEG-selling-NEG oranges

"he is not selling oranges"

d.   *ma-biyibiiʕ 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.

4.   Dative/Accusative Alternations[6]

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 Basilco (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[7]:

(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^{w}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   c. *Huan Peo-ta-u nenka-k

       "John sold the corn."

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. The + sign in the above examples 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. 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.) 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 up 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 ,ovement 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 (32a), Ellen is caused to

possess a letter; but as a result of (33a), 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* raised. 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.[8]

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 *'oŋəs* "give" appears with the auxiliary or "light" verb *-t*, one of a small closed set of transitivizers:

(35)　　'oŋəs-t-s=lə'=Ø　　　　　　('ə　cə sčeenəx^w)

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[9]—the absolutive, which is the only null pronoun in any paradigm.

(36)　　'oŋəs-t-Ø=lə'=sx^w　　　　　　(cə　x^{w}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'iłč)

   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)   Kinłání-góó   déyá

Flagstaff-to   1SG.NOM.go.FUT

"I will go to Flagstaff"

(39)   * 'awéé'-góó   jooł   yíłmáás

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   [y*aa* 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[10] 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'į' yáłti'   b. bich'į' yáłti'

   3-to   3NOM-speaking   3-to   3NOM-speaking

   "He is speaking to her."   "He is being spoken to by her."

   Direct   Inverse

We thus have the identical situation to that of Lummi: we have structural case on pronouns; and inherent case on DPs.
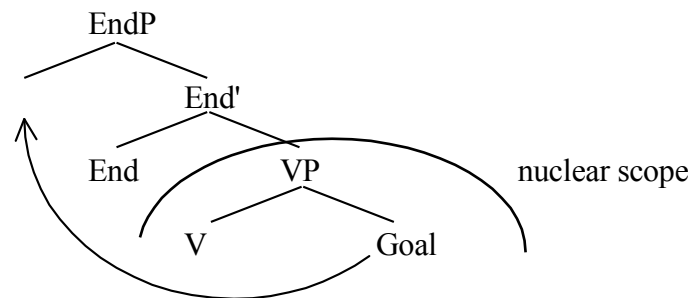
In sum: in languages where information structure is marked overtly in the morphosyntax, there is no "optional" dative movement; there are syntactic constraints on the distribution of the dative. In Lummi, goal pronouns are direct objects; only nominals may be marked oblique. In Navajo the structural 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 of all 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 spaciotemporal 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.

(42)   *Phase 1:*

```
              EndP
             /    \
                  End'
                 /    \
              End      VP         nuclear scope
                      /   \
                    V      Goal
```

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 place the goal at the phase edge, allowing the next phase to access it.

(43)   *Phase 2*
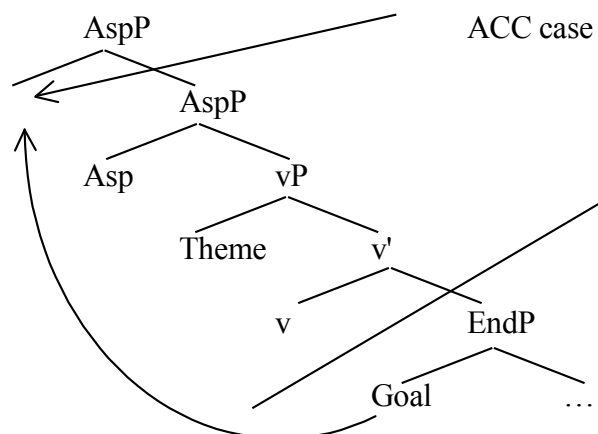
Notice that the interpretation of the nominal is fixed in the first phase, so subsequent movement for PF phenomena like Case will not affect the semantics. In order to get the correct word order in a language like English, we also need to claim that the verb undergoes short verb movement (Johnson 1991) (V$\rightarrow$ End $\rightarrow$ v^1 $\rightarrow$ 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:*

EndP
     End'
End   VP   Nuclear scope
       V   Goal
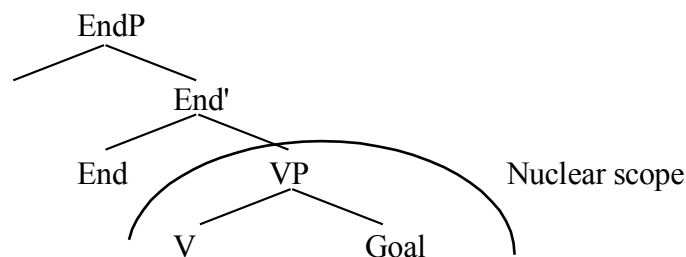
Again, case checking is required. But here the goal is not accessible to the next phase (it is not on the phase edge). The only way to avoid crashing is to mark the goal with an inherent case. Were we writing this paper in the late 1980s or early 1990s, we'd say that this inherent case marking occurred under government from End (lexicalized as *to* or *from*). Interestingly, recently (in *Beyond Explanatory Adequacy*, ms. 2001) 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 being 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 (Jelinek 19XX and Willie and Jelinek 19XX). Recall that pronominals are inherently[11] 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[12] 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.
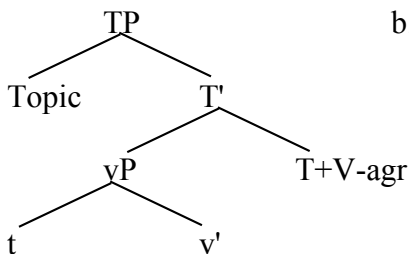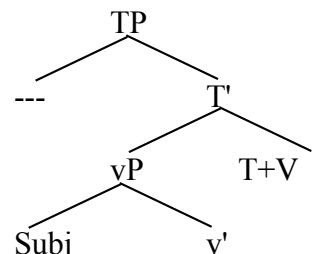
4.1   Topicality Agreement in Oromo

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 from Clamons et al. 1999):

(45)   intal-t-ií-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"

Verbs in Oromo show agreement with presupposed/topical subjects (45), but not with focal/non-presuppositional NPs (46). 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 spec, TP will trigger agreement (47a). Low subjects in vP will not (47b):

(47)   a.   TP   b.   TP
             /   \   /   \
       Topic   T'   ---   T'
               /   \   /   \
          vP   T+V-agr   vP   T+V
        / \   / \
       t   v'   Subj   v'

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   yiiłtsą́

        boy   3OBJ-1SG.SUBJ-saw

        "I (Topic) saw +the boy."

    b.   ashkii   shiiłtsą́

        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 given above: 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)   asdzą́ą́ at'ééd ałk'ésdisí yeiní'ą̀   DIRECT

       woman$_i$ girl$_j$ candy$_k$ 3$_j$-to-3OBJ$_k$-3SUBJ$_i$-gave

       "The woman gave the candy to the +girl."

(50)   asdzą́ą́ at'ééd ałk'ésdisí beiní'a   INVERSE

       woman$_i$ girl$_j$ candy$_k$ 3$_j$-to-3OBJ$_k$-3SUBJ$_i$-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 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'eed yizts'ǫs   DIRECT

    boy   girl   3-3-kissed

    "The boy kissed the +girl."

(52) ashkii at'eed bizts'ǫs   INVERSE

    boy   girl   3-3-kissed

    "The boy was kissed by the +girl."

Just as we use the passive to maintain discourse continuity in English,

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'ééd yizts'ǫs   DIRECT

        boy PART girl   3-3-kissed

        "A boy kissed the girl."

     b.   ashkii at'ééd   léi' yizts'ǫs   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'ǫs   INVERSE

        boy   girl   PART 3-3-kissed

        "The boy was kissed by a girl."

b. *ashkii léi' at'ééd bizts'ǫs   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.

4.2   Lummi Ergative Splits[13]

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 a bilingual Lummi speaker through a paradigm such as the following.

(55)   a.   nəp-t-oŋəɬ=sxʷ

           advise-TRANS-1PL.ACC=2SG.NOM

           "You advised us."   2NOM >1ACC

      b.   nəp-t-Ø=sxʷ

           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-oŋəɬ   or   *nəp-t-oŋəɬ-s

           [*He advised us]   *3ERG > 1ACC

      e.   nəp-t-ŋ=ɬ

           advise-TRANS-PASSIVE=1PL.NOM

           "We were advised."   1NOM

The speaker produces the example sentences comfortably until he is asked to say (55d) "He advised us." Then he stops, looks surprised and uneasy, and then if he is a good consultant, 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 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 (19XX) 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 (in Lummi -- I address cross-linguistic issues below). 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[14]. There is a
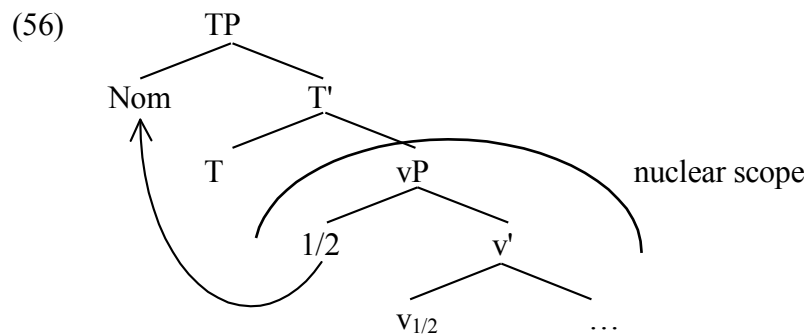
morphological template in Lummi: V+(transivity)+(voice)+(internal argument)=(external argument clitic). For example, double object constructions are simply impossible in Lummi (as seen above in section 3), because there is only one morphological slot for internal arguments in the verb complex. The unavailability of (e) follows from the fact that we have both an ergative and an accusative pronoun competing for a single morphological position.

It should be noted that a language need not have a case split to have a person hierarchy; some Salish languages with a hierarchy have all NOM/ACC arguments, and Tsimshian, with all ERG/ABS arguments, uses the passive to avoid 3 > 1, 2. In Navajo, as we will see below, the inverse voice is used to avoid violation of a complex animacy hierarchy, and in constructions with both 1/2 and 3 person arguments, 1/2 is always topical and 3 is in focus. Thus, In some hierarchies, we do not see lexical gaps, but excluded sentence types, lending evidence to the claim that languages may show semantic differences.
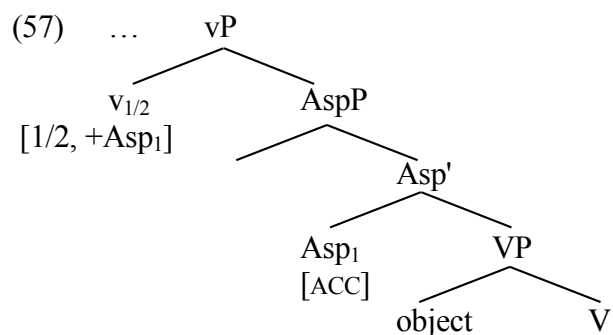
Let us translate Jelinek's account into the phasing approach advocated here. The basic intuition that ergative case marking represents a lexically case marked internal argument construed within the nuclear scope is retained. The difference between the Jelinek's account and the one we present here is notational (and we hope without negative empirical consequences.) occurs in terms of the nature of the little 'v' category. (The

trees sketched here should be taken heuristically. Lummi is a predicate initial pronominal argument language, and we don't claim that these trees correspond directly to the structure of Lummi, but on a more abstract level represent the relations among the arguments and their interpretation.)

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)
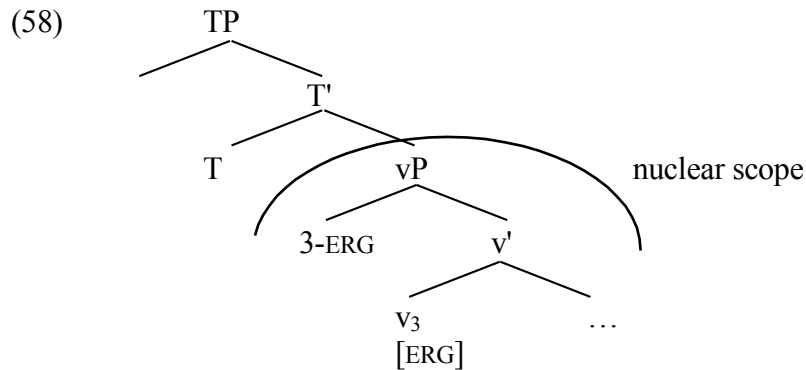
(56)

```
                TP
          _____|_____
        Nom            T'
         ↑        _____|_____
         |       T            vP          nuclear scope
         |           _____|_____
         |          1/2              v'
         |                      _____|_____
         |                    v_{1/2}      …
```

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:

(57)   …   vP
```
          _____|_____
       v_{1/2}        AspP
    [1/2, +Asp_1]   ____|____
                            Asp'
                        _____|_____
                      Asp_1        VP
                      [ACC]     ____|____
                             object      V
```

Contrast this with a third person subject, which is interpreted focally.[15] 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 Asp$_2$, which cannot assign ACC case. The subject, construed internal to the nuclear scope, does not raise, and takes the inherently assigned ergative case marking.

(58)

```
            TP
           /  \
              T'
             /  \
            T    vP        nuclear scope
                /  \
            3-ERG   v'
                   /  \
                 V₃    …
                [ERG]
```

With respect to the object, which takes (external) absolutive case. On lower phase, the object is caseless and cannot receive case from the defective Asp$_2$. 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 Asp$_2$P for generalized EPP reasons, thus placing it at the phase edge.— we abstract away from this intermediate step)

(59)

TP
T'
T
[ABS]
vP
3-ERG
v'
v₃
[3, ERG, +Asp₂]
Asp₂P
Asp₂'
Asp₂
VP
V
Obj
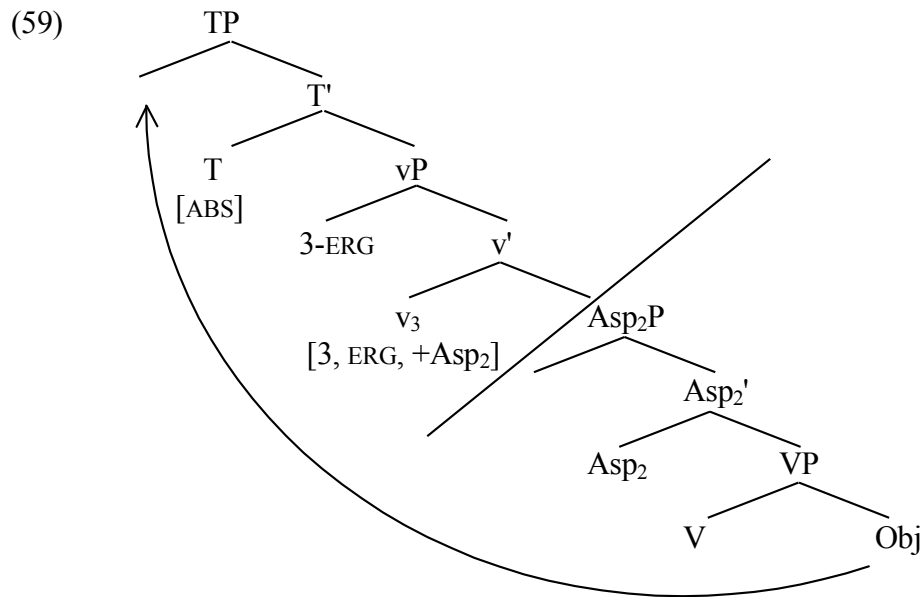
Again, these trees should not be taken literally, as mentioned above. The predicate initial and pronominal argument statuses of Lummi, not to mention the morphological template, muddy the waters. What is crucial, however, is that ergative and accusative cases compete for a morphological slot (as encoded 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 Asp₂P[16], so the object (of any kind) can raise to the specifier of TP for case checking.

4.3 Word order in Kirundi[17]

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 words 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).
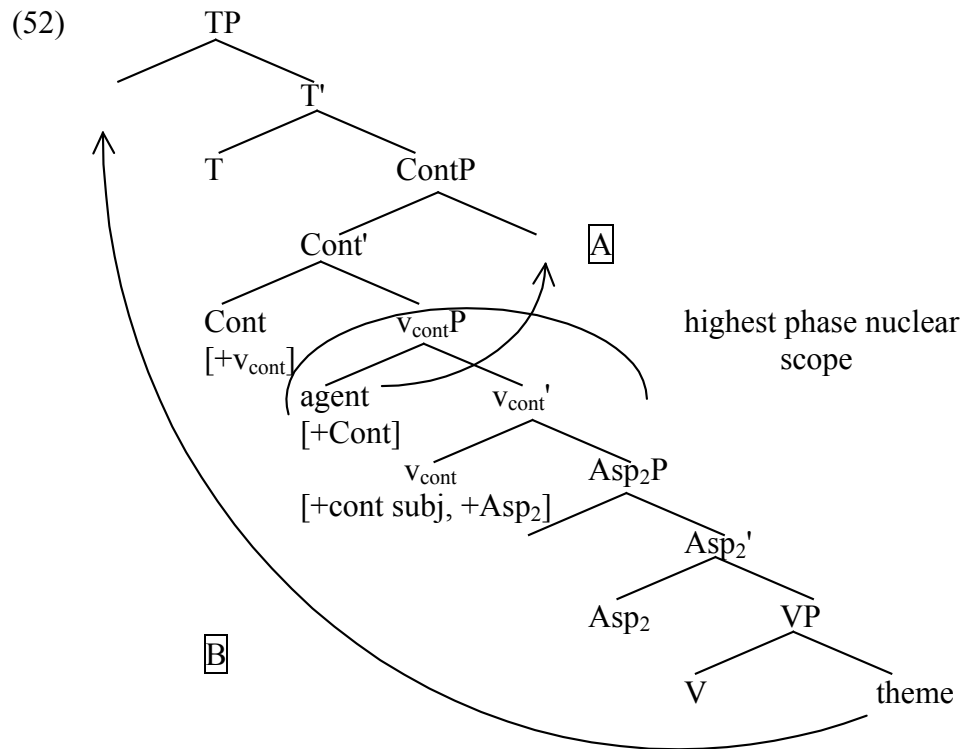
An interesting alternation occurs when a subject, rather than an object is contrastively focused, this is seen in the pair of sentences in (11)

(51) 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 object is final, and the object is in initial position and mostly importantly, the object agrees with the verb. In order to account for this pattern we appeal to the information structure of these constructions. After Kiss (19XX), we assume that contrastive focus is quantificational. It picks a member out of a presupposed set (despite the fact that the name here contains the word "focus"). As such, contrastively focused elements are incompatible with the nuclear scope of the clause. 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 (asserted) focus, we relabel it Cont (for contrastive focus). This position immediately dominates the vP. For reasons that need not concern us here (having to do with the relative order of focused elements, adverbials and embedded clauses and the strict clause finalness of contrastive focus), he posits a rightwards specifier for this position. Cont has the dual function of acting as the host

for NPs that must escape the nuclear scope, 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 picked out as members of a presupposed set[18]. This v is realized as a Ø and we call it v_{cont}. It, in turn, selects for the Asp head listed above as Asp_2 (the non-case assigning Asp). v_{cont} is the mirror image of the v_3 we proposed for Lummi, in that both of them select for the defective Asp2, but v_3 introduces an argument which is construed internal to the nuclear scope, and v_{cont} introduces an argument which is obligatorily moved to the restrictor.

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).
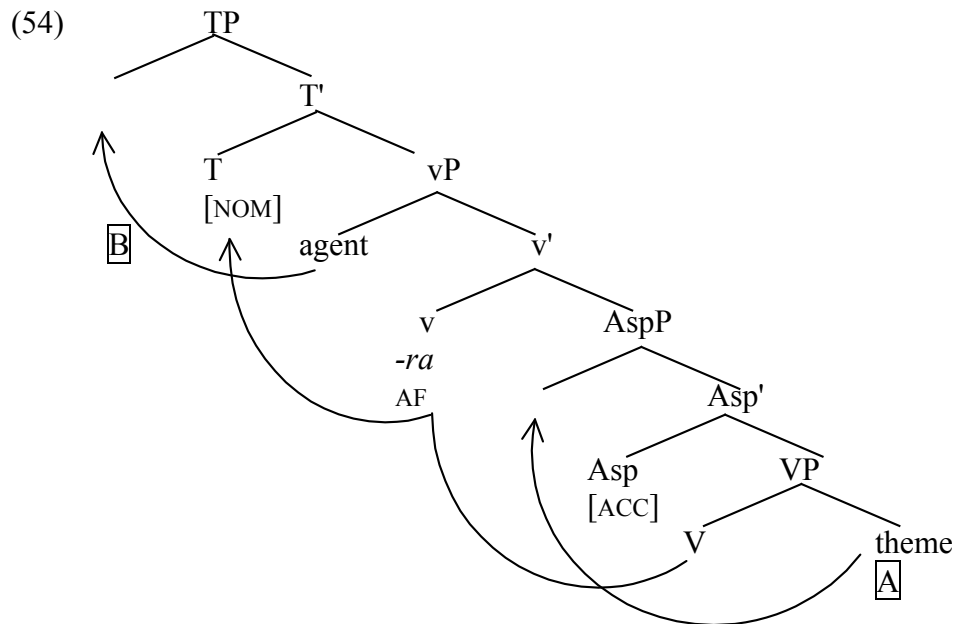
(52)

```
                    TP
                   /  \
                      T'
                     /  \
                    T    ContP
                        /     \
                    Cont'        A
                   /    \
                Cont     v_cont P        highest phase nuclear
               [+v_cont]  /   \               scope
                      agent    v_cont'
                      [+Cont]  /    \
                         v_cont      Asp₂P
                    [+cont subj, +Asp₂]  \
                                        Asp₂'
                                       /     \
                                    Asp₂      VP
          B                                  /  \
                                            V    theme
```

The agent raises out of the nuclear scope (movement $\boxed{A}$ in 52) so that it may be construed as part of the restrictor, at the same time it inherently checks its case in the specifier of ContP. Since the selected-for Asp2 does not assign accusative case, the theme moves[19] to the specifier of TP, where it gets nominative case and triggers verbal agreement. 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 the lower VP. Cont dominates this VP:

(53)
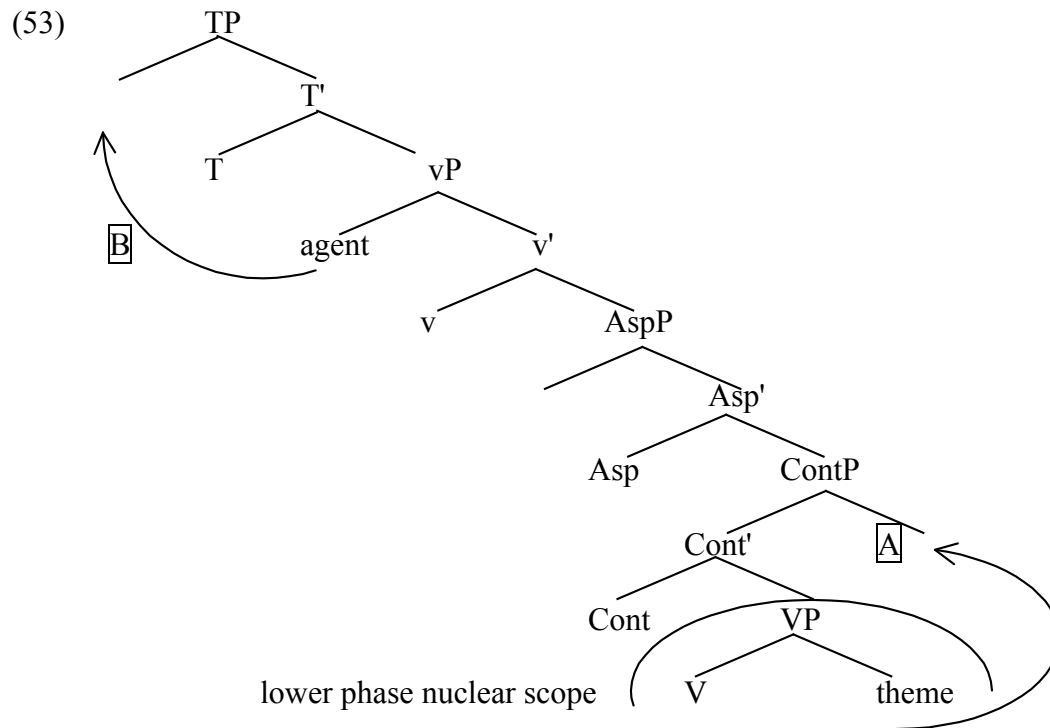
Here the theme moves to the specifier of ContP to escape the nuclear scope and be inherently case marked A. The subject raises to the specifier of TP, where it triggers subject agreement B. Again the verb raises through all the functional categories, to pick up the relevant morphemes.

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 (54):

(54)

```
              TP
               \
                T'
               /  \
              T    vP
            [NOM]  /  \
         B      agent  v'
                      /  \
                     v    AspP
                    -ra   /   \
                    AF   Asp'
                        Asp    VP
                       [ACC]   /  \
                              V   theme
                                   A
```

This gives us straightforward nominative/accusative ordering with neutral interpretation. We leave as an open question whether argument movements seen in (54) have additional information structure implications.

5.   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 data good support for "Jelinek's conjecture". 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.

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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 wanted to pull this paper. We wouldn't let her, since we think it is a 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 a honor to work with Eloise and his portion of the paper is dedicated to her. [AC, HH, MW]

[1] Aissen (1999, 2000)

[2] 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.

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[3] We leave aside the question of whether this scrambling, 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).

[4] 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 Fintel (1989) and others, in the analysis of the thetic/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 thetic/categorical contrast to the topicalization of goal arguments within the object array in Dative Movement.

[5] 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.

[6] Parts of this section are based on Jelinek (2000a)

[7] 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:

(iii)   '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, 1997) 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".

[8] Note also, that like Yaqui, English has lexical restrictions on dative movement. Latinate verbs, and verbs like *whisper*, do not allow the alternation.

[9] 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.

[10]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.

[11] In the next section we will claim that some pronominals are more presuppositional than others. This will be discussed in detail there.

[12] We are assuming here that Navajo is a verb raising language.

[13] The discussion in this section is based partly on Jelinek (1993).

[14] 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.

[15] 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.

[16] The analysis here essentially stipulates   Burzio's generalization. The reason for the stipulation is a topic for future research.

[17] 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.

[18] A simpler solution may be that Cont *is* a v, but one which does not map to a nuclear scope. We leave this as an open possibility.

[19] Again the theme presumably stops off at the lower phase edge to be accessible to the higher phase. We have not indicated this in this already complicated tree.