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MAPPING MULTIPLE APPLICATIVES

by

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B.A. Honours, University of Regina, 1992

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

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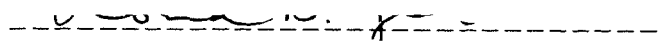
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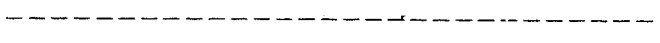
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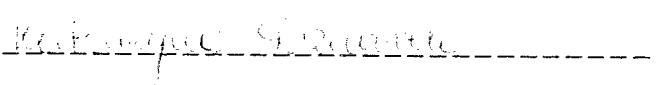
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Abstract

The alignment of certain semantic roles to grammatical categories, such as theme to direct object, has been accepted by most linguists for some time. However, in many languages, including Halkomelem and Ilokano, the usual alignment between theme and direct object commonly does not occur. Instead, the direct object aligns with a semantic role such as goal, benefactive, or possessor. These applicative constructions are frequently accompanied by additional verbal morphology. Although many languages have applicatives, languages which have co-occurrences of applicatives seem to be very rare.

The first contribution of this thesis is empirical. It provides a compilation and typology of multiple applicative constructions in the world's languages. The typological classification is based on the verbal morphology associated with the applicatives. Languages in which one marker indicates a variety of applicatives (Huastec and Sierra Popoluca) are distinguished from languages in which two or more unique markers are used to indicate independent applicatives (Northern Interior Salish languages and Kinyarwanda). Also included in this typology is the manner in which the applicatives co-occur in each language.

The second contribution of this thesis is theoretical. Most previous investigations of applicatives have focused on data involving only one applicative per clause. However, analyses of multiple applicatives have been given within the theory of Relational Grammar. This analysis, consisting of several ordered rules, is lengthy and complicated.

By contrast, the account proposed here uses Mapping Theory, a framework which shifts much of the burden of analysis from the syntax onto the morphology and semantics. Two elaborations of MT are proposed. First, the applicative markers are reanalyzed from the traditional role of indicating the

presence of a syntactic construction, to a new role where they indicate the extension of the argument structure. Second, a person/animacy hierarchy determines which of the two applicatives acquire the properties associated with the direct object.

Consequently, MT combined with the morphosemantic elaborations proposed here gives a more straightforward account of multiple applicatives than do previous RG treatments. While they are relatively rare, multiple applicatives nevertheless provide a means for testing the adequacy of linguistic theories.

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LIST OF ABBREVIATIONS

ACC	accusative	PASS	passive
AN	animate	PTC	particle
AP	antipassive	PFV	perfective
APPL	applicative	PL	plural
ASP	aspect	POS	possessor
AUX	auxiliary	PRES	present
BEN	benefactive	PST	past
CL	clitic	REFL	reflexive
CP	completive aspect	REL	relative
DAT	dative	S	singular
DEF	definite	SO	someone
DET	determiner	SUBJ	subject
ERG	ergative	STIM	stimulus
EX(CL)	exclusive	TR	transitive
GEN	genitive		
H	head	1	first person
HON	honorific	2	second person
ICP	incompletive aspect	3	third person
IMP	imperative		
IMP	imperfective		
INC	incompletive		
IND	indicative		
INSTR	instrumental		
INV	inverse		
LOC	locative		
MAL	malefactive		
NOM	nominative		
OBJ	object		
OBL	oblique		

MAPPING MULTIPLE APPLICATIVES

In recent years, most linguists have assumed a general alignment of semantic roles with grammatical relations. Traditionally accepted alignments include agent with subject, theme with direct object, and goal with indirect object. To account for these and other alignments, Rosen (1984) posits the Universal Alignment Hypothesis and investigates its validity with data from a number of languages. Based on these data, she concludes that a correspondence between semantic roles and initial grammatical relations is justified.

However, in certain languages, the traditional correspondence between theme and direct object commonly does not occur. Instead, the direct object aligns with a goal or with an oblique semantic role such as benefactive, malefactive, locative, instrumental, or possessor.¹ These semantic roles typically align with oblique nominals. The constructions resulting from these alternative alignments, known as applicatives, are frequently accompanied by additional verbal morphology. Some of these constructions may be seen in the following sentences. Examples (1) and (2) are from Halkomelem, a Coast Salish language (Gerds 1988a).²

- (1) ni ʔám-əs-t-əs kʷəθə swíwʔləs ʔə kʷəθə púkʷ.
 aux give-APPL-tr-3erg det boy obl det book
 ‘He gave the boy the book.’
- (2) ni ǵʷál-əlc-t-əs lə sléniʔ ʔə kʷəθə səplíl.
 aux bake-APPL-tr-3erg det woman obl det bread
 ‘He baked the bread for the woman.’

¹In causatives, causees may also align with the direct object of a clause; however, this construction will not be examined in this current work.

²In order to provide uniformity in the glosses, I use /APPL/ to represent the applicative markers in each language. Gerds (1988a) uses /ADVA/ to represent goal and /ADVB/ to represent benefactive applicatives.

Sentence (1) contains a goal applicative, while sentence (2) contains a benefactive applicative. Examples (3) and (4) are from Tzotzil, a Mayan language (Aissen 1983, 1987).³

- (3) č-a-h-mil-**be**-ik.
asp-A2-E1-kill-APPL-2pl
'I'll kill it/them for you (pl).'
- (4) L-a-j-nup-**be** ta be l-a-tot-e.
cp-B2-A1-meet-APPL on road the-A2-father-cl
'I met your father on the road.'

Sentence (3) illustrates a benefactive applicative, and sentence (4) a possessor applicative. Example (5) is from Chamorro, an Austronesian language (Gibson 1990).

- (5) Hu-tugi'-i i che'lu-hu ni katta.
E1-write-APPL the sibling-my obl letter
'I wrote my brother the letter.'

Like example (1), example (5) is a goal applicative. The final examples, (6) and (7), are from Ilokano, a Philippine language (Gerdtts and Whaley 1992, 1993).⁴

- (6) P-in-akbu-**an** ni Juan ti ubing i-ti danum.
pst-pour-APPL det Juan det child obl-det water
'John poured water on the child.'
- (7) P-in-**ang**-puted ni Juan ti buneng i-ti kawayan.
pst-APPL-cut det Juan det knife obl-det bamboo
'John cut down the bamboo with a knife.'

Sentence (6) contains a locative applicative while (7) contains an instrumental applicative.

In all of these sentences, the goal, possessor, and oblique applicatives display properties associated with direct objects. Following are data from a

³Aissen (1983, 1987) uses /BE/ to gloss the applicative markers.

⁴Gerdtts and Whaley (1992, 1993) gloss Ilokano locative applicative markers as /ADV/ and instrumental applicative markers as /INSTR/.

selection of the preceding languages that demonstrate the object properties of the applicative. In Halkomelem, direct objects are marked with 'straight' case,⁵ as exemplified in (8).

- (8) ni ʔám-əs-t-əs (*ʔə) kʷəθə sqʷəméyʔ ʔə kʷəθə sθámʔ.
 aux give-APPL-tr-3erg obl det dog obl det bone
 'He gave the dog the bone.'

Because the goal applicative in example (8) is marked with straight case, it must be the direct object of the clause. As indicated, the occurrence of the goal marked with oblique case, signifying its status as the indirect object, results in a judgment of ungrammaticality.

The following examples from Tzotzil and Chamorro illustrate applicatives which have passivized.

- (9) č-iʔakʰ-b-at hun čeb.
 asp-A1-give-APPL-pass a girl
 'I am being given a girl.'
- (10) Ma-tugi'-i i che'lu-hu ni katta.
 pass-write-APFL the sibling-my obl letter
 'My brother was written the letter.'

Aissen (1983) contends that the goal in these sentences is the direct object of the clause since only direct objects may passivize.

Although applicatives with various semantic roles frequently occur, in many languages they are mutually exclusive within the same clause. In fact, as will be discussed later, Gerdts and Whaley (1992, 1993) posit the 2-AEX Law which prohibits the occurrence of more than one applicative per clause. The

⁵Halkomelem has two cases, straight case and oblique case. Nominals appearing in straight case are preceded only by a determiner, whereas nominals in oblique case are preceded by both a determiner and the oblique marker /ʔə/. The rule which accounts for case distribution appears below in (i).

i. Final nuclear terms, i. e. subjects and objects, are in the straight case. (Gerdts 1988a).

following examples from Halkomelem (11) and Ilokano (12) and (13) (Gerdtz and Whaley 1992, 1993) illustrate this exclusivity.

- (11) *ni ʔam-əs-ɬc-t-əs ɬə sléniʔ kʷəə sqʷəméyʔ
 aux give-APPL-APPL-tr-3erg det woman det dog
 ʔə kʷəə sʔamʔ.
 obl det bone
 'He gave the dog the bone for the woman.'

- (12) *In-ted-an-an ko ni Maria ni Juan iti libro.
 pst-give-APPL-APPL lgen det Maria det Juan obl-det book
 'I gave the book to John for Maria.'

- (13) *P-in-ang-puted-an ko ni Juan ti buneng iti
 pst-APPL-cut-APPL lgen det Juan det knife obl-det
 kawayan.
 bamboo
 'I cut down the bamboo with a knife for John.'

Sentences (11) and (12) each contain examples of co-occurrences of goal and benefactive applicatives. Sentence (13) contains both instrumental and benefactive applicatives. These sentences demonstrate the ungrammaticality of multiple applicative constructions in some languages.

However, there are a small number of languages where multiple applicatives in a single clause are attested. The focus of this thesis, then, is first to identify and classify those languages that contain multiple applicative constructions and, second, to provide a theory that will account for their structure. Chapter One consists of a typology of multiple applicative constructions found in the world's languages. I categorize the languages according to the number of different applicative markers that they use. Following this categorization, I examine the combinations of markers which result from the multiple applicative constructions in each of the languages.

Applicative structures have been studied by a number of linguists working within varied frameworks. Some of these previous approaches include Marantz (1984), Baker (1988), Alsina and Mchombo (1990), and Bresnan and Moshi (1990). However, none of these works address the problem of multiple applicatives constructions. Two theories which have addressed multiple applicative data are Relational Grammar and Mapping Theory. Therefore, I restrict my analysis of the multiple applicative data to these two theories.

In Chapter Two, discussion of the analysis of multiple applicatives begins with a synopsis of the Relational Grammar treatment. In the ensuing sections, I examine Relational Grammar's account of each of the languages that contain multiple applicative constructions, ending with a review of Constable's (1989) account of this phenomenon in Huastec. Chapter Three outlines Mapping Theory (Gerds 1992a). I give a Mapping Theory analysis of multiple applicative constructions in each language. Additionally, I introduce two modifications to Mapping Theory in order to account for the data.

The final chapter, Chapter Four, compares the multiple applicative analyses of both Relational Grammar and Mapping Theory. I conclude that the Relational Grammar treatment of multiple applicatives is needlessly complicated when compared to the Mapping Theory analysis. Although multiple applicatives are a relatively rare phenomenon, they have proven to be a valuable means of testing linguistic theories.

CHAPTER ONE: MULTIPLE APPLICATIVE CONSTRUCTIONS

This chapter presents a typological study of the languages of the world in which multiple applicative constructions are reported. Few languages display this phenomenon; in fact, I have identified only six: Huastec, Kinyarwanda, Sierra Popoluca, and the Northern Interior Salish languages, Lillooet, Shuswap, and Thompson. I classify these languages based on the number and function of applicative markers that each employs. Subsequently, I examine the multiple applicative data from each language to determine the frequency and patterns with which the markers are used.

1.1 CLASSIFICATION OF LANGUAGES

This overall category of languages with multiple applicative markers in the same construction may be divided into two classes. The first class is comprised of languages which use more than one marker to denote applicatives with distinct semantic roles. The second class consists of languages where only one marker indicates applicatives with diverse semantic roles. Both of these classes are examined in the ensuing subsections.

1.1.1 TWO OR MORE MARKERS

Although the languages in this section have more than one applicative marker, this does not mean that there is a unique marker for each type of applicative. As the data from the Salish languages and Kinyarwanda will illustrate, overlap in function occurs frequently. The following examples are

taken from the Northern Interior Salish languages.⁶ The first example, (14) is from Lillooet (van Eijk 1985).⁷

- (14) cúł-xit-kan ti-sqayX^v-a.
point at s.o.-APPL-APPL-1subj det-man-ptc
'I pointed out the man to him.'
*'I pointed out him to the man.'

Example (15) is from Shuswap (Kuipers 1992).

- (15) pet-xt-s tə xkʷtʰustn-s.
take after-APPL-3subj det eyes-3spos
'He has obj's (parent's) eyes.'

And finally, (16) through (18) are from Thompson (Thompson and Thompson 1992).

- (16) cu-xí-t-ne.
make-APPL-tr-3subj
'I make it for her.'
- (17) nóǰ*-m-s.
run-APPL-3subj
'[an animal] runs up to him.'
- (18) ɬəkʷ-mí(n)-ne.
remember-APPL-3subj
'I remember him.'

These data show that the applicative marker /-xit/⁸ indicates applicatives with three different semantic roles. A goal applicative appears in (14), a possessor applicative in (15), and a benefactive applicative in (16). The applicative marker /-min/ in (17) and (18) indicates an oblique applicative,⁹ usually a stimulus.

⁶Due to the relatedness of these three languages, I will examine them collectively.

⁷The Northern Interior Salish data used in this thesis did not originally include a morpheme-by-morpheme gloss. Mercedes Hinkson graciously provided this analysis.

⁸The applicative marker /-xit/ is analyzed by Thompson and Thompson (1992) as /-xi/ plus the transitive marker /-t/.

⁹Another function of /-min/ is that of an 'affected' object. This function is generally difficult to detect given that there is often inadequate information to indicate whether the

The following sentences contain examples of simple applicatives in Kinyarwanda, a Bantu language (Kimenyi 1980).¹⁰

- (19) Karoôli y-a-fash-ir-ije abaantu ubúsa.
Charles he-pst-help-APPL-asp people nothing
'Charles helped people for nothing.'
- (20) Umugóre a-rá-kor-er-a umugabo.
woman she-pres-work-APPL-asp man
'The woman is working for the man.'
- (21) Umuhuûngu a-ra-som-er-a umukoôbwa igitabo.¹¹
boy he-pres-read-APPL-asp girl book
'The boy is reading the girl's book.'

(19) through (21) demonstrate the triple function of the applicative marker /-ir/ in signaling goal, benefactive, and alienable possessor¹² applicatives.

In Kinyarwanda, an object is indicated by its ability to passivize, reflexivize, relativize, and incorporate pronouns. The following examples offer evidence of the fact that the applicatives in question are the objects of the sentences above.

nominal is an initial theme or an oblique. Basing one's analysis of the nominal on the presence or absence of a preposition in the English translation can be misleading and, thus, is inappropriate. Therefore, I will analyze all remaining /-min/ applicatives as obliques with a causative/stimulus semantic role (Gerdts 1988a).

¹⁰Kimenyi (1980) uses a variety of glosses to indicate applicative markers. In his analysis, goal and possessor applicative markers are glossed by /APPL/, benefactive applicative markers by /BEN/, and locative applicative markers by the corresponding English preposition, such as /TO/ or /IN/.

¹¹Missing from Kimenyi's (1980) discussion of sentence (21) is reference to its potential semantic ambiguity. Word order facts in Kinyarwanda allow the interpretation of either a goal or a benefactive applicative in addition to the possessor applicative indicated in the gloss.

¹²Kinyarwanda makes a distinction between alienable possessors such as the one in (21), and possessors that are either inalienable or used with verbs bearing meanings such as 'take' or 'steal' as in (i).

- i. Umuhuûngu y-a-twaa-ye umukoôbwa igitabo.
boy he-pst-take-asp girl book
'The boy took the girl's book.'

However, since these types of possessor applicatives do not co-occur with other applicatives in a single clause, they are not relevant to the current discussion.

- (22) Umugabo á-r-íi-he-er-a ímbwa ibíryo.
 man he-pres-refl-give-APPL-asp dog food
 'The man is giving food to the dog for himself.'
- (23) Dore ábáana ingurube z-a-ri-ír-iye ibíryo.
 look children pigs they-pst-rel-eat-APPL-asp food
 'These are children whose food was eaten by the pigs.'
- (24) Ibíryo bi-rá-hé-er-w-a umugabo ímbwa
 food it-pres-give-APPL-pass-asp man dog
 n'úmugóre.
 by woman
 'The food is given to the dog for the man by the woman.'

Sentences (22) and (23) exemplify applicatives which have, respectively, reflexivized and relativized. Sentence (24) illustrates, through passivization, that the initial object in these sentences does not lose its status even though an applicative, in this case a benefactive, may also function as the object.

In addition to those applicatives marked with /-ir/, Kinyarwanda has another applicative indicated by a different marker.¹³ The final single applicative construction involves a locative applicative.

- (25) Úmwáana y-a-taa-yé-mo áamáazi igitabo.
 child he-pst-throw-asp-APPL water book
 'The child has thrown the book into the water.'

In sentence (25), the applicative marker /-mo/ indicates the locative¹⁴ applicative. Like the preceding examples involving /-ir/, the locative

¹³ A further applicative marker is /-ish/ which indicates an instrumental applicative.

(i) Úmwáalímu a-ra-andik-ish-a íbárúwa íkárámu.
 teacher he-pres-write-INSTR-asp letter pen
 'The teacher is writing a letter with the pen.'

However, Gerdts and Whaley (1992, 1993) propose a multipredicate analysis of instrumental applicatives which resembles that of causatives. Because of their analysis, I exclude instrumental applicatives from further discussion. Additionally, Gerdts and Whaley (1992, 1993) omit manner applicatives from their analysis, so I do as well.

¹⁴ Locatives in Kinyarwanda are generally denoted by the presence of either of the prepositions *i*, *ku*, or *mu*. *i* is usually used with proper nouns such as the names of cities or countries, nominals which ordinarily do not become arguments in a sentence. *ku* and *mu* account for the remaining range of prepositional meanings in Kinyarwanda. When the locative marked

applicative also demonstrates object properties. The following sentence exemplifies the relativization of a locative applicative.

- (26) Umugabo y-a-tw-eerets-e ishuûri úmwáalímu
 man he-pst-us-show-asp school teacher
 y-oóhere-jé-ho igitabo.
 he-rel-send-asp-APPL book
 'The man showed us the school to which the teacher sent the book.'

1.1.2 ONE MARKER

Data from languages that use a single marker to indicate applicatives with different semantic roles appear in this section. The first examples are from Huastec, a Mayan language (Constable 1989).¹⁵

- (27) N-a Juan ti nuju-tzi-ø an ti olom.
 def-hon John 3/2s sell-APPL-pvf def cl pig
 'John sold you the pig.'

- (28) Jajaa7 u pak'u-tzi-x-ø.
 3 U3 launder-DAT-ap-imp
 'She washes clothes for people.'

- (29) Tu ela-tzi-ø an ti bitzim.
 1/2s find-APPL-pvf def cl horse
 'I found your horse.'

In the preceding examples, /-tzi/ indicates three distinct types of applicative. Example (27) is a goal applicative, (28) a benefactive applicative, and (29) a possessor applicative. It is apparent that these nominals function as direct objects since they register accord with an agreement clitic. In example (29), the clitic /tu/ demonstrates agreement with a first person singular subject and a second person singular direct object which may only be the possessor applicative.

with a preposition appears as an applicative, the verbal affixes -ho and -mo, representing *ku* and *mu* respectively, replace the prepositions.

¹⁵Constable (1989) glosses the applicative markers in Huastec as /DAT/.

A second language where a single marker is used to indicate applicatives with distinct semantic roles is Sierra Popoluca, a Zoquean language (Marlett 1986). Example (30) demonstrates a goal applicative, (31) a benefactive applicative, and (32) a possessor applicative.¹⁶

- (30) i-ŋkeh-aʔy weʔeñik.
 A3-show-APPL wasp
 'He showed wasps to him.'
- (31) m-an-top-aʔy-pa heʔm kučiyuh.
 B2-Alex-take-APPL -inc the knife
 'I will take the knife away from you.'
- (32) šiwan a-kuʔt-aʔy an-sik.
 John Blex-eat-APPL Alex-beans
 'John ate my beans.'

As with the Huastec examples above, the presence of a direct object triggers agreement. However, in Sierra Popoluca the agreement appears as an affix on the verb. In the example in (31), the affix /m-/ indicates agreement with a second person singular direct object, here the benefactive applicative.

The overlap of function demonstrated by the Huastec and Sierra Popoluca applicative markers is useful in terms of morphological economy. However, it can also create ambiguity problems, as the following Huastec example demonstrates.

- (33) Tu nuju-tzi-ø an ti bitzim.
 1/2s sell-APPL-pfv def cl horse
 'I sold you the horse.' or
 'I sold the horse for you.' or
 'I sold your horse.'

This sentence exemplifies the ambiguities that may occur when the semantic environment permits any of the three constructions. Constable suggests that

¹⁶Applicative markers in Sierra Popoluca are not represented by Marlett (1986).

when speakers of Huastec are faced with this potentially ambiguous situation, more often than not, they will select the goal applicative reading, here the first of the three glosses.

1.2 CO-OCCURRENCES

In the previous section, the focus was the classification of languages with respect to the number of applicative markers each used. In this section, I determine the patterning of these markers when multiple applicatives occur within a clause. The discussion involves examples where multiple applicatives in a single clause are indicated by one occurrence of one marker, two occurrences of different markers, or two occurrences of the same marker.

1.2.1 ONE OCCURRENCE OF A SINGLE MARKER

Two cases occur where a single occurrence of one marker on the verb apparently accounts for two applicatives. These examples appear in Huastec (Constable 1989) and Shuswap (Kuipers 1992) and appear below as (34) and (35) respectively.

- (34) ne7ech tu cha7bi-tzi-ø t-a taata7.
 go 1/2s visit-APPL-pfv cl-2spos father
 'I'm going to visit your father for you.' or
 'I'm going to visit your father.'

- (35) mlmalq*-xt-s tə citx*-s.
 paint-tr.ind.-APPL-3sSubj det house-3spos
 'He paints the/his house for him.' or
 'He paints his (other's) house.'

The dilemma presented by the preceding examples involves their glosses. While the first gloss of each sentence indicates that the lone applicative marker represents two applicatives, the second gloss of each indicates only one applicative, a possessor.

One likely explanation for the appearance of only one marker may be that, in cases such as these, there is a benefactive meaning intrinsically involved with the possession. Thus, if someone 'paints his house,' 'he' has benefited from this action, whether or not 'for him' is overtly stated. This may also explain why the /-xit/ marker in the Salish examples, examined in the previous section, represents both possessor and benefactive applicatives. But, if this is not a concern of the semantics, then it seems that an applicative is present without any overt marking. Theoretically, this is not a problem since applicatives without verbal morphology are attested in Kinyarwanda (footnote 12). Based on this, one might assume that unmarked applicatives exist in Huastec and Shuswap as well.

However, as illustrated in the preceding sections, both possessor and benefactive applicatives are overtly marked in these languages. Additionally, I will demonstrate in the sections to follow that, in both Huastec and Shuswap, the multiple applicative constructions require two occurrences of the applicative marker on the verb. Further, multiple applicatives which are both indicated by the same marker in the Salish languages are unattested save for this one example. Therefore, the first explanation appears to be the most efficacious since the problem is shifted over to the domain of semantics and the morphology is left unaffected.

1.2.2 TWO OCCURRENCES OF DIFFERENT MARKERS

Multiple applicative constructions with two different markers occur in the Northern Interior Salish languages and Kinyarwanda. Data from Thompson (Thompson and Thompson 1992) are given in (36), and from Lillooet (van Eijk 1985) in (37) and (38).

- (36) pún-m-x-cm-s.
find-APPL-APPL-1sObj-3subj
'He finds my. . . '
- (37) tx^{*}us-min-xí[t]-c-kax^{*} ni-n-čqáǎ[?]-a.
look-APPL-APPL-1sObj-2sSubj det-1spos-horse-ptc
'Look out for my horse for me.'
- (38) c[?]as-min-xít-kan k^{*}-s-kíka[?] ʔi-x^{*}ikáy[?]-s-a.
come-APPL-APPL-1subj det-nom-Kika det-prepared salmon-3spos-ptc
'I am coming to get the prepared salmon that belongs to Kíka[?].'

The preceding examples show that the ordering for the applicative markers is always /-min-xit/; */-xit-min/ is not attested in any of these three Salish languages. (36) and (37) demonstrate that both meanings associated with the applicative marker /-xit/, namely possessors (36) and benefactives (37), may co-occur with /-min/. All three sentences demonstrate the presence of the stimulus applicative associated with /-min/. The only combinations of these applicatives which are not attested in these languages, are combinations that would use double occurrences of the same marker. Therefore, sentences that might contain the morphological constructions */-min-min/, indicating two occurrences of stimulus applicatives, or */-xit-xit/, indicating benefactive and possessor applicatives, do not occur.

Kinyarwanda bans multiple applicative constructions when both applicatives are flagged by the marker /-ir/. In the following example, a possessor and a benefactive applicative, both indicated with /-ir/, co-occur.

- (39) *Umugóre a-ra-som-er-er-a umukoôbwa ibitabo
woman she-pres-read-APPL-APPL-asp girl books
ábáana.
children
'The woman is reading the girl's books for the children.'

(39)'s ungrammaticality suggests that goal, benefactive, and possessor applicatives are mutually exclusive in any combination within a single clause.

However, Kinyarwanda does allow multiple applicative constructions when the verbal morphology is distinct.

- (40) Úmwáana y-iicar-i-yé-ho íntebe umugabo.
 child he-sit-APPL-asp-APPL chair man
 'The child is sitting on the chair for the man.'

- (41) Úmwáana y-a-andik-i-yé-mo umugabo igitabo izíná
 child he-pst-write-APPL-asp-APPL man book name
 rye.
 of him
 'The child wrote in the man's book his name.'

The preceding sentences exemplify the co-occurrences of a locative and a benefactive applicative and a locative and a possessor applicative. The following sentences serve to illustrate which of the nominals of the multiple applicative construction exhibit properties associated with the object. The first examples of relativization involve benefactive and locative applicatives

- (42) N-dá-bon-a íntebe úmwáana y-iícar-i-yé-ho
 I-pres-see-asp chair child he-rel-sit-APPL-asp-APPL
 umugabo.
 man
 'I see the chair that the child is sitting on for the man.'

- (43) N-dá-bon-a umugabo úmwáana y-iícar-i-yé-ho
 I-pres-see-asp man child he-rel-sit-APPL-asp-APPL
 íntebe.
 chair
 'I see the man for whom the child is sitting on the chair.'

Since both are grammatical, these sentences illustrate that the locative (42) and the benefactive (43) applicatives may simultaneously demonstrate object

properties. The following examples of pronoun incorporation contain locative and possessor applicatives.

- (44) Úmwáana y-a-mw-andik-i-yé-mo igitabo izína.
 child he-pst-HIM-write-APPL-asp-APPL book name
 ‘The child wrote a name in his book.’
- (45) *Úmwáana y-a-cy-andik-i-yé-mo umugabo izína.
 child he-pst-IT-write-APPL-asp-APPL man name
 ‘The child wrote in the man’s book a name.’
- (46) *Úmwáana y-a-ry-andik-i-yé-mo umugabo igitabo.
 child he-pst-IT-write-APPL-asp-APPL man book
 ‘The child wrote in it the man’s book.’

In (44) the possessor applicative undergoes pronoun incorporation, while in (45) and (46) the locative applicative and the theme do not. Thus, only the possessor applicative has object status.

1.2.3 TWO OCCURRENCES OF THE SAME MARKER

Section 1.2.2 demonstrated that Kinyarwanda prohibits multiple applicative constructions when both applicatives share the same verbal morphology. However, two occurrences of the same marker in multiple applicative constructions are attested in other languages. The first data supporting this assertion come from Sierra Popoluca (Marlett 1986).

- (47) i-top-aʔy-aʔy i-kučiyuh.
 A3-take-APPL-APPL A3-knife
 ‘He_j took his_j knife away from him_{j,k}.’
- (48) heʔm petoh heʔm šiwan a-na-miñ-aʔy-aʔy.
 the Peter the John Blex-cause-come-APPL-APPL
 ‘Peter brought it to me on John’s behalf.’
- (49) a-na-nik-aʔy-aʔy-i.
 Blex-cause-go-APPL-APPL -imp
 ‘Take it to him on my behalf!’

As noted previously in section 1.1.1, the Sierra Popoluca marker /-aʔy/ may indicate either a benefactive, goal, or possessor applicative. In the preceding examples, sentence (47) contains both possessor and benefactive applicatives, while sentences (48) and (49) contain both goal and benefactive applicatives. These examples illustrate that each applicative of a multiple applicative construction is accompanied by a separate appearance of the marker /-aʔy/ on the verb.

Multiple occurrences of the same marker also occur in the following Huastec (Constable 1989) example.

- (50) Tu nuju-**tzi-tzi**-ø t-a bitziim-al.
 1/2s sell-APPL-APPL-pfv cl-2spos horse-pos
 'I sold your horse for you/for him.' or
 'I sold you/him your horse.'

Again, due to semantic ambiguities, (50) may be interpreted as having possessor and benefactive applicatives or possessor and goal applicatives. And, parallel with the Sierra Popoluca data above, the verb is marked with two occurrences of the applicative marker /-tzi/.

1.3 SUMMARY

Section 1.1 demonstrates that verbal morphology divides languages with multiple applicative constructions into two classes. The first class includes those languages that indicate applicatives of varying semantic roles with different markers. The second class includes those languages where a single marker is used to indicate applicatives with different semantic roles.

Section 1.2 examines the verbal morphology of multiple applicative constructions as it pertains to both classes. In the first class of languages, each applicative of a multiple applicative construction must be indicated with distinct verbal morphology. Multiple applicative constructions where both

applicatives use the same verbal morphology are prohibited. By contrast, the second class of languages requires two occurrences of the same marker on the verb.

Table 1 summarizes the findings of Chapter One.

Table 1: Applicative Markers

	Number of Markers	2 of the Same	2 Different
Huastec	1	ok	*
Sierra Popoluca	1	ok	*
N. I. Salish	2	*	ok
Kinyarwanda	4	*	ok

CHAPTER TWO: THE RELATIONAL GRAMMAR APPROACH

Section 2.1 of this chapter outlines the theory of Relational Grammar. Included in this outline is the RG representation of single applicatives. In section 2.2, a RG analysis is given for multiple applicative constructions with two unique markers. And finally, section 2.3 deals with multiple applicative constructions with two occurrences of the same verbal morphology.

2.1 AN OVERVIEW

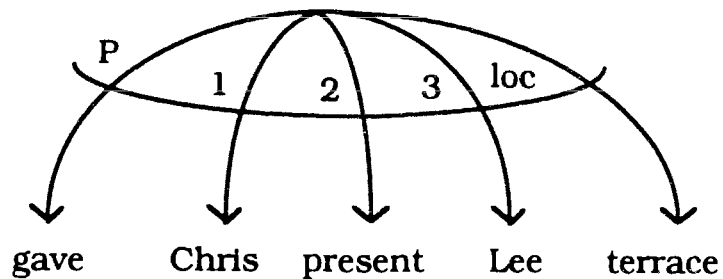
Central to RG are the three primitive grammatical relations (GRs): SUBJECT (1), DIRECT OBJECT (2), and INDIRECT OBJECT (3). These three GRs constitute the class of terms and, of these, subject and direct object constitute the class of nuclear terms. Additionally, there exists a set of non-terms—obliques and chômeurs. The set of obliques includes instrumentals, benefactives, and locatives. Chômeurs are nominals that hold term status at one level of the sentence structure, but are put en chômage by the advancement or ascension of another term or oblique. These GRs are ranked according to the relational hierarchy seen below.

(51) subject > direct object > indirect object > oblique > chômeur
 1 2 3

The RG representation of the clause in (52) is exemplified below in (53).

(52) Chris gave a present to Lee on the terrace.

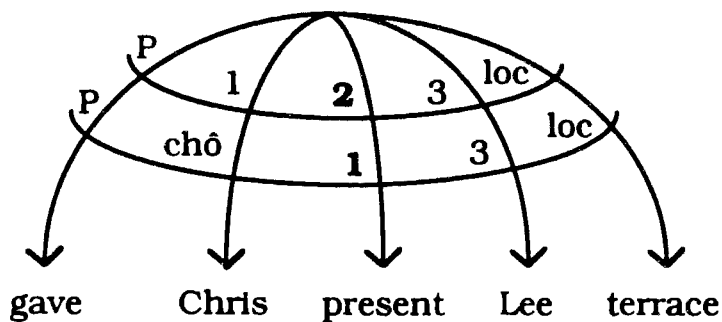
(53)



This stratal diagram represents the correspondences between the nominals in the clause and their grammatical relations. Because sentence (52) is a basic clause there is only one level or stratum in (53). However, revaluations may occur in a clause where an oblique or term advances or ascends. A common example is passivization (2-to-1 advancement):

(54) A present was given to Lee by Chris on the terrace.

(55)



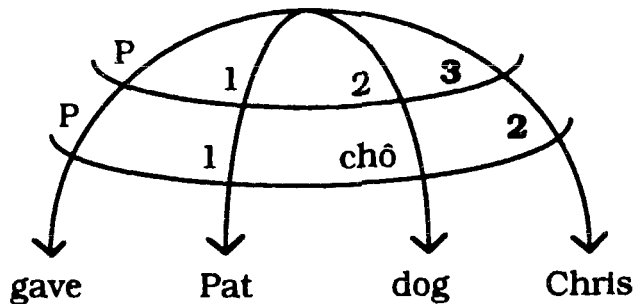
The nominal *present* is the direct object or 2 in the initial stratum, and advances to subject or 1 in the second stratum. This advancement results in the chômage of the initial subject, here *Chris*, due to the Stratal Uniqueness Law (Perlmutter and Postal 1983b). This law prohibits the co-occurrence of two of the same term in a single stratum. Thus, in the final stratum, *present* is the subject, and *Chris* is a chômeur.

2.2 APPLICATIVE CONSTRUCTIONS

The simple applicative constructions would be analyzed in RG as being the result of 3-to-2 advancement, oblique-to-2 advancement, or possessor ascension to 2. Example (56) involves 3-to-2 advancement, as represented in (57).

(56) Pat gave Chris a dog.

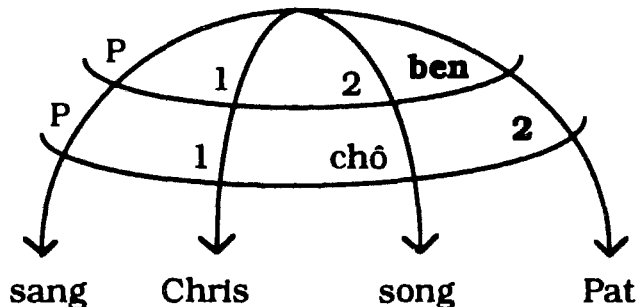
(57)



In the second stratum, the initial 3 advances to 2, thereby chômeurizing the initial 2 in accordance with the Stratal Uniqueness Law. Oblique-to-2 advancement is exemplified in (58) and represented in (59).

(58) Chris sang Pat a song.

(59)

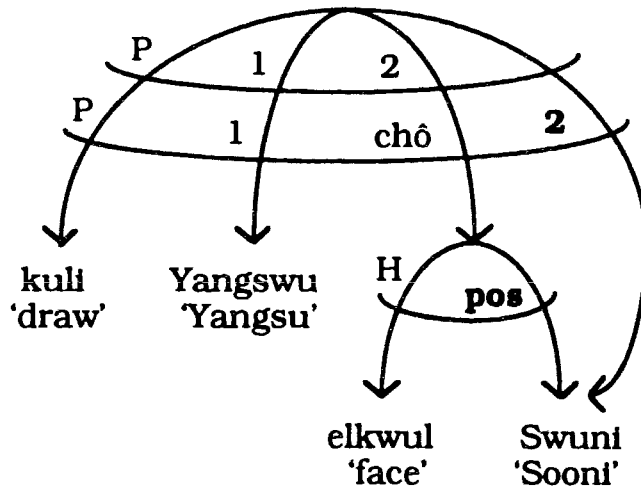


In the stratal diagram in (59), the benefactive advances to 2. Again, the initial 2 is chômeurized.

The Korean example in (60) from Gerdt (1993) involves possessor ascension, as represented in (61).

- (60) Yangswu-ka Swuni-lul elkwul-ul kuli-ess-ta.
 Yangswu-nom Swuni-acc face-acc draw-pst-ind
 'Yangsu drew Sooni's face.'

(61)



In this third diagram, the possessor nominal ascends to 2 from its host, the initial 2. The host then becomes a chômeur.

An initial wrinkle in the RG treatment of multiple applicative constructions is the 2-Advancement Exclusive Law (2-AEX) (Gerdts and Whaley 1992, 1993). Stated informally, the 2-AEX prohibits the occurrence of more than one advancement to 2 in a single clause. This law was proposed on the basis of languages such as Halkomelem (Gerdts 1988a) and Ilokano (Gerdts and Whaley 1992, 1993), in which applicatives in a single clause are mutually exclusive.

However, multiple applicative data in both the Northern Interior Salish languages and Sierra Popoluca demonstrate that the 2-AEX is too strong. In the sections to come, the analysis of Lillooet and Sierra Popoluca sentences involves two separate advancements to direct object. Because the data are grammatical, the 2-AEX makes an incorrect prediction. Thus, these

data will show that, though effective for languages such as Halkomelem and Ilokano, the 2-AEX is otherwise too strong.

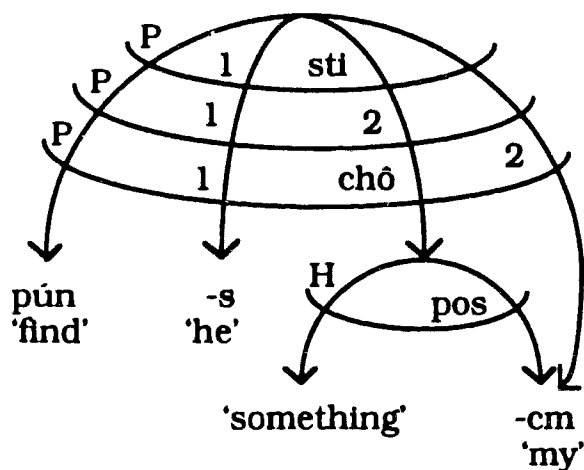
2.3 TWO OCCURRENCES OF DIFFERENT MARKERS

The discussion of multiple applicative constructions indicated with two occurrences of different markers commences with data from Lillooet (62) and Thompson (63), repeated from section 1.2.2. In these sentences possessor ascension occurs with an oblique advancement. The stratal diagram in (64) represents sentence (63).¹⁷

- (62) cʔas-miñ-xít-kan kʷ-s-kíkaʔ ʔi-xʷikáý-s-a.
 come-APPL-APPL-1subj det-nom-Kíka det-prepared salmon-3spos-ptc
 'I am coming to get the prepared salmon that belongs to Kíka?.'

- (63) pún-m-x-cm-s.
 find-APPL-APPL-1sObj-3subj
 'He finds my. . .'

(64)



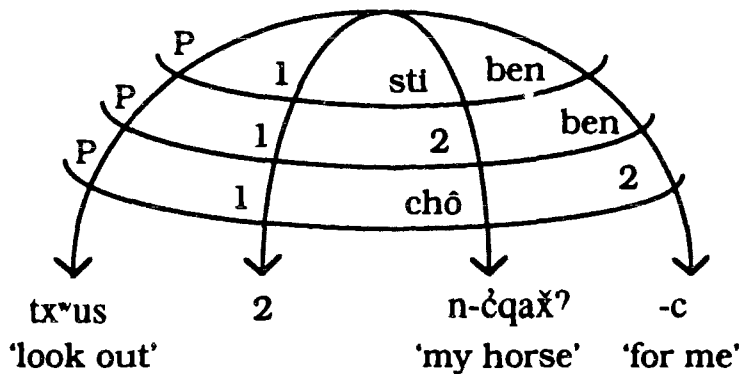
The initial oblique advances to 2 in the second stratum of diagram (64), providing the first applicative marker on the verb. In the following stratum, the possessor ascends to 2, chômeurizing its host.

¹⁷I do not represent the applicative markers in any of the following diagrams.

The remaining sentence from Lillooet, also repeated from section 1.2.2, again requires three strata. However, in this example, two oblique advancements are involved. The sentence in (65) is represented in the stratal diagram in (66).

- (65) tx^wus-miñ-xí[t]-c-kax^w ni-n-čqáǰ?-a.
 look-APPL-APPL-1sObj-2sSubj det-1spos-horse-ptc
 'Look out for my horse for me.'

(66)

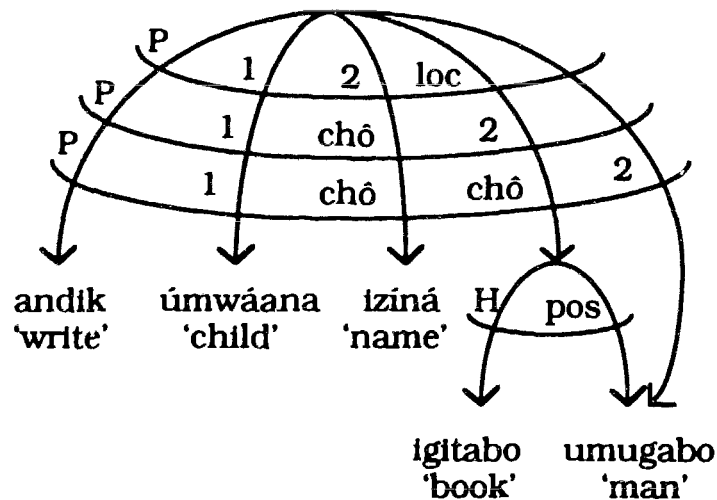


In the second stratum of diagram (66), the initial oblique advances to 2, providing the first applicative marker on the verb. In the third stratum, the initial benefactive advances to 2, thereby chômeurizing the oblique applicative. The verb is then marked with a second applicative marker.

The first Kinyarwanda example, like the Northern Interior Salish examples in (62) and (63), involves possessor ascension. Diagram (68) represents sentence (67), repeated from section 1.2.2.

- (67) Úmwáana y-a-andik-i-yé-mo umugabo igitabo izíná
 child he-pst-write-APPL-asp-APPL man book name
 rye.
 of him
 'The child wrote in the man's book his name.'

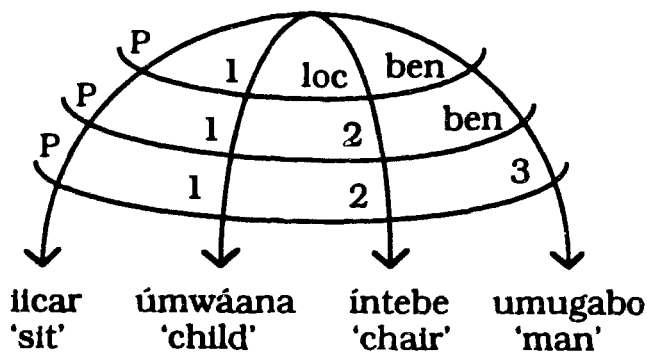
(68)



The initial locative in (68) advances to 2 in the second stratum. Subsequently, the possessor nominal within the locative applicative ascends to 2, chômeurizing its host. However, the remaining Kinyarwanda example requires a different analysis.

- (69) Úmwáana y-iicar-i-yé-ho íntebe umugabo.
 child he-sit-APPL-asp-APPL chair man
 'The child is sitting on the chair for the man.'

(70)



The stratal diagram in (70) demonstrates that two advancements are required to account for the sentence in (69). The locative advances to 2 in the second

stratum, followed by benefactive-to-3 advancement in the third.¹⁸ As a result, both applicatives are able to exhibit properties associated with terms.

Thus, it appears that Relational Grammar is able to account for multiple applicative constructions in the languages with two occurrences of different markers. Each applicative is associated with an advancement or an ascension and the constructions are allowed to concatenate.

2.4 TWO OCCURRENCES OF THE SAME MARKER

In this section, I discuss Constable's (1989) RG account of multiple applicative constructions in Huastec which can be extended, with slight modification, to the Sierra Popoluca data.

Constable's analysis is based on sentence (50), repeated as (71).

- (71) Tu nuju-tzi-tzi-ø t-a bitziim-al.
 1/2s sell-APPL-APPL-pfv cl-2spos horse-pos
 'I sold your horse for you/for him.' or
 'I sold you/him your horse.'

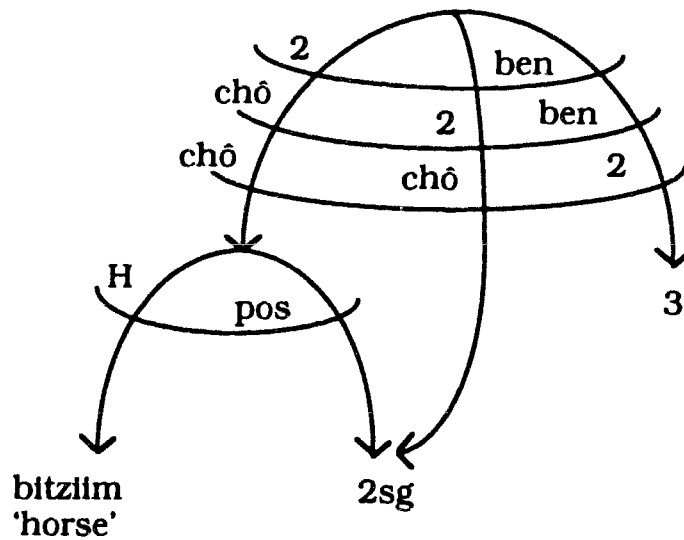
Constable notes that, because of the evidence from agreement, the possessor must be the final direct object. If the benefactive was the final direct object, then the agreement clitic, which in (71) agrees with a first person singular subject and second person singular direct object, would have to reflect the occurrence of a third person singular direct object. Because this does not occur, the second person singular possessive form is the only nominal that could be the final direct object.

As a result, Constable posits that possessor ascension must follow benefactive-to-2 advancement. If the other order were used, the possessor would ascend to 2, followed by benefactive-to-2 advancement which would

¹⁸Gerdts and Whaley (1992, 1993) analyze the benefactive as a fourth term. Under this analysis, the benefactive does not need to advance.

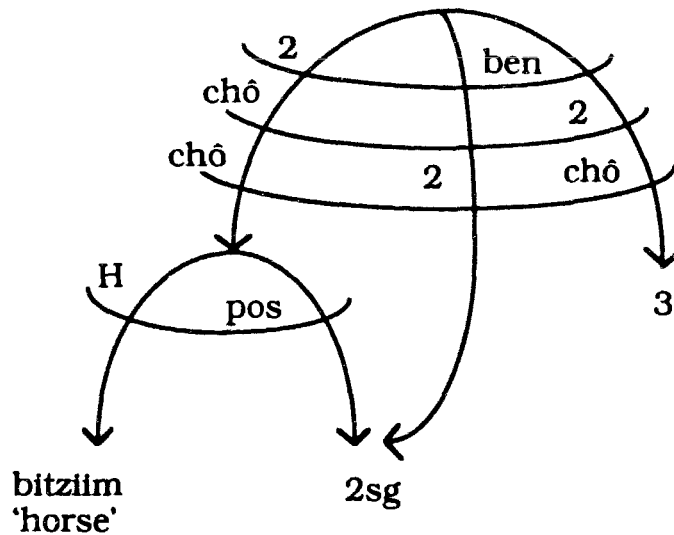
put the possessor en chômage. This would produce a benefactive direct object, as shown in the partial stratal diagram in (72), resulting in incorrect agreement.

(72)



The problems with Constable's analysis mount quickly. As stated earlier, in order to explain the agreement clitic, he must complete the benefactive-to-2 advancement before the possessor ascension. However, once he advances the benefactive to direct object, the ascension host, which is the initial direct object, goes en chômage, as illustrated in (73).

(73)

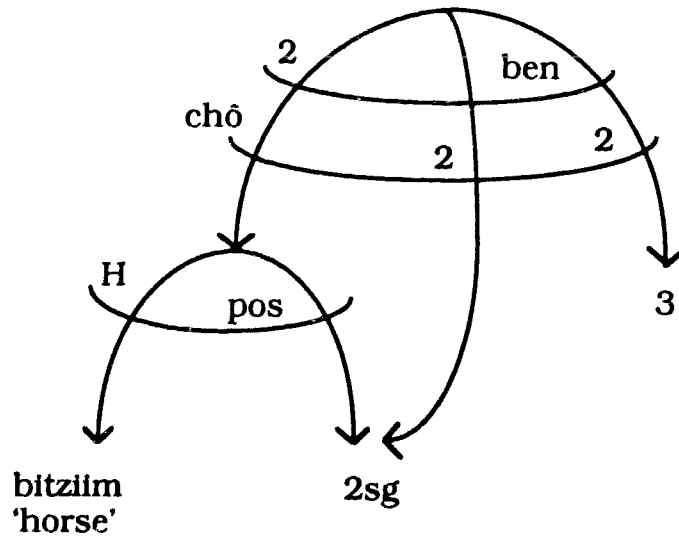


The ascension of the possessor out of a chômeur host creates a violation of the Host Limitation Law (Perlmutter and Postal 1983a). This law states that only terms may host ascensions. The chômeur is not a term and, therefore, cannot host an ascension. Thus, the analysis represented in the stratal diagram in (73) is problematic.

Additionally, a simultaneous advancement and ascension is ruled out in accordance with the Stratal Uniqueness Law (Perlmutter and Postal 1983b), discussed in section 2.1. Should both possessor ascension and benefactive-to-2 advancement take place concurrently, the result would be two direct objects in the final stratum as seen in (74).¹⁹

¹⁹The alternative to two direct objects is that each revaluation would chômeurize the other, resulting in two chômeurs. This analysis would be inconsistent with the agreement facts.

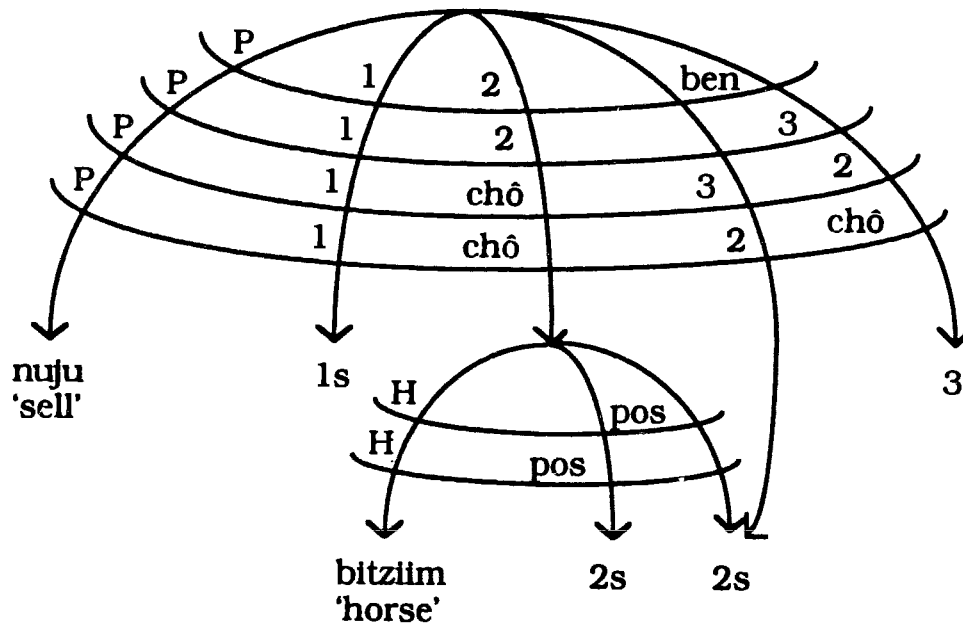
(74)



Furthermore, this analysis would not account for the agreement facts; another condition would have to be formulated to explain why only the possessor applicative and not the benefactive applicative determines agreement.

Taking all this into consideration, Constable concludes that the stratal diagram in (75) is the best representation of the sentence in (71).

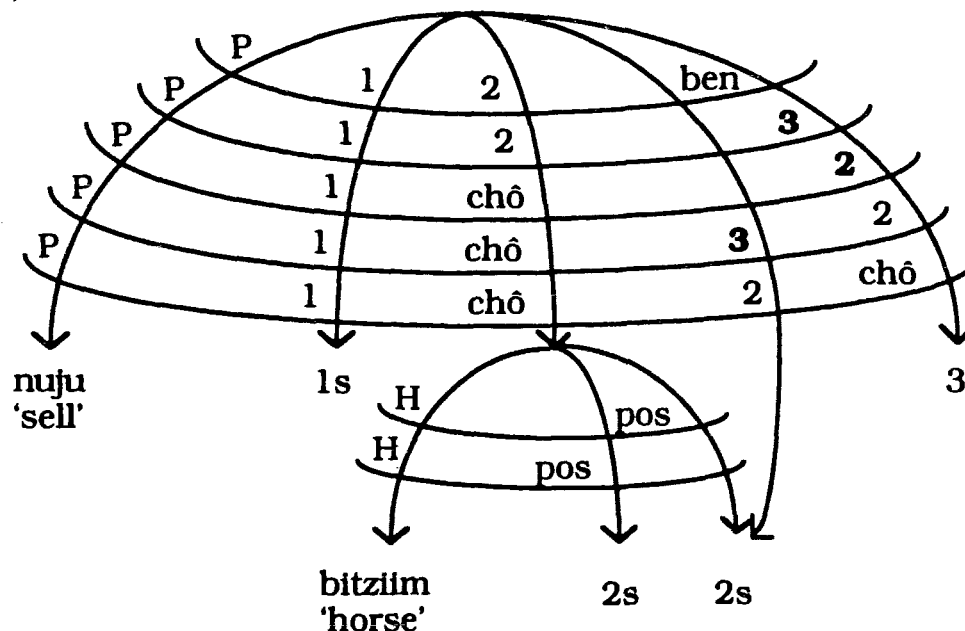
(75)



To summarize Constable's analysis, the initial benefactive nominal advances to 3 instead of directly to 2 as previously assumed. The possessor then ascends to 3 out of its 2 host. Simultaneously, the initial benefactive nominal advances from 3 to 2, placing the possessive host en chômage. In the final stratum, the initial possessor nominal advances from 3 to 2, placing the initial benefactive nominal en chômage, causing the desired result of the initial possessor nominal as the final direct object of the clause.

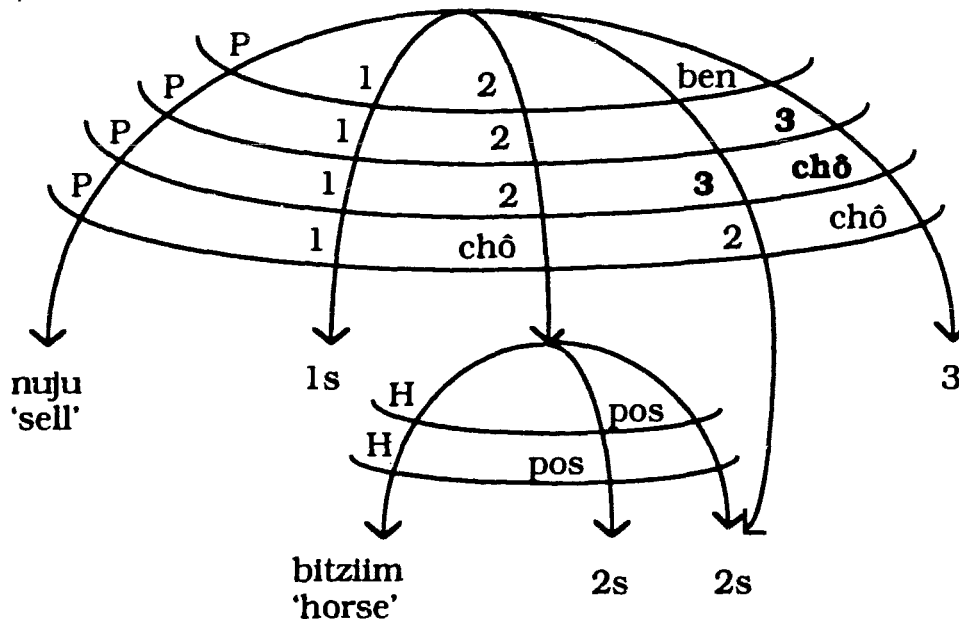
Although this analysis correctly accounts for the agreement with the possessor applicative, two points merit further discussion. To begin with, a minor problem occurs in the third stratum, where both possessor ascension-to-3 as well as 3-to-2 advancement on the part of the initial benefactive nominal occur. This is slightly out of the ordinary and might be improved by first advancing the 3 to 2, followed by possessor ascension in the subsequent stratum.

(76)



However, as seen in (76), once the 3-to-2 advancement occurs, the ascension host is chômeurized. Thus, as with (73) above, a violation of the Host Limitation Law is created. If the ordering is reversed so that the possessor ascension-to-3 occurs before advancing the benefactive from 3 to 2, the structure would appear as that in (77).

(77)



However, the ascension of the possessor from the 2 host to 3 chômeurizes the current 3 (the initial benefactive). Because of this, the benefactive nominal could never advance to 2 and applicative marking would not appear on the verb. Thus, both alternatives are slightly less satisfactory than Constable's analysis in (75).

The last issue with regard to Constable's approach in (75) concerns the ascension of the possessor to 3 from a 2 host. At first, this appears to be a violation of Perlmutter and Postal's (1983a) Relational Succession Law that states that the ascendeo must acquire the GR of its host. However, this law has proven to be slightly too constrictive for languages such as Choctaw (Davies

1984). Contrast (78), an example of a regular possessive construction, with (79) and (80), which exemplify possessor ascension to 3 from a 2 host and a 1 host, respectively.

(78) ofi-t ā-katos kopoli-tok.
 dog-nom 1pos-cat bite-pst
 'The dog bit my cat.'

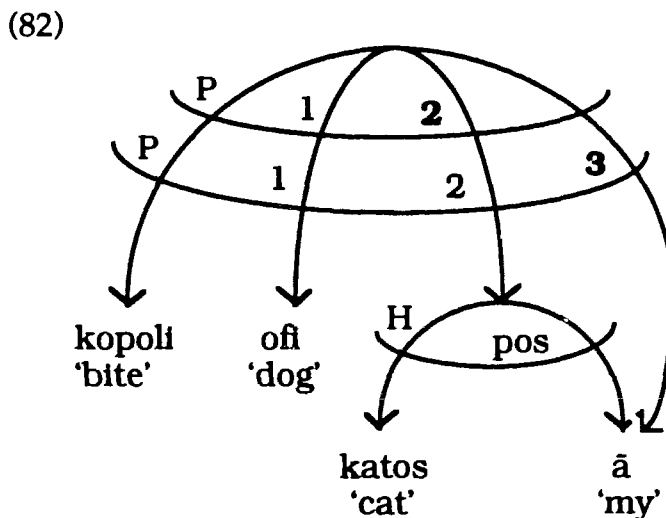
(79) ofi-t katos ā-kopoli-tok
 dog-nom cat 1dat-bite-pst
 'The dog bit my cat.'

(80) Alla-t am-ipa-tok.
 child-nom 1dat-eat-pst
 'My child ate.'

That the possessor in both (79) and (80) is a 3, is substantiated by the Choctaw agreement facts. In (81), only the indirect object of the clause is indicated by dative agreement.

(81) Chokka **hachi**-kachi-li-tok.
 house 2pl/dat-sell-1nom-pst
 'I sold you (pl.) the house.'

Because the possessors in both (79) and (80) display dative agreement, one may conclude that they are both 3s. Sentence (79) is represented in the stratal diagram in (82).



Thus, the Choctaw data supports the claim that possessor ascension-to-3 exists in Universal Grammar.

However, Constable's analysis for Huastec not only claims that the possessor ascends to 3, it also claims that the 3 mandatorily advances to 2. Aissen (1987) proposes a chained analysis for Tzotzil sentences such as the following:

- (83) ch-i-s-toyilan-be j-jol.
 icp-B1-A3-keep lifting-APPL A1-head
 'He kept lifting my head.'
- (84) a-mil-b-on jutuk k-ol.
 A2-kill-APPL-B1s one A1-child
 'You killed one of my children.'

The stratal diagram for (83) is given in (85).

(85)

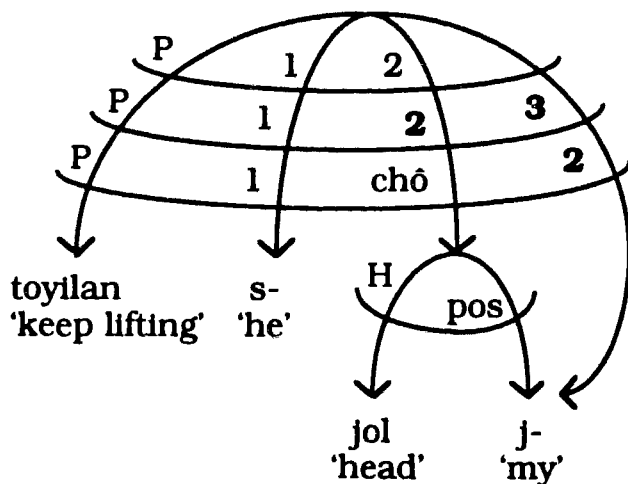


Diagram (85) illustrates the possessor ascending to 3 from a 2 host in the second stratum. In the following stratum, the possessor, now the 3, mandatorily advances to 2, placing the host en chômage. Thus, it appears that data from Choctaw and Tzotzil provide some cross-linguistic justification for Constable's analysis of multiple applicative constructions in Huastec.

The rules used by Constable to explain the data follow in Table 2.

Table 2: Huastec Revaluation Rules

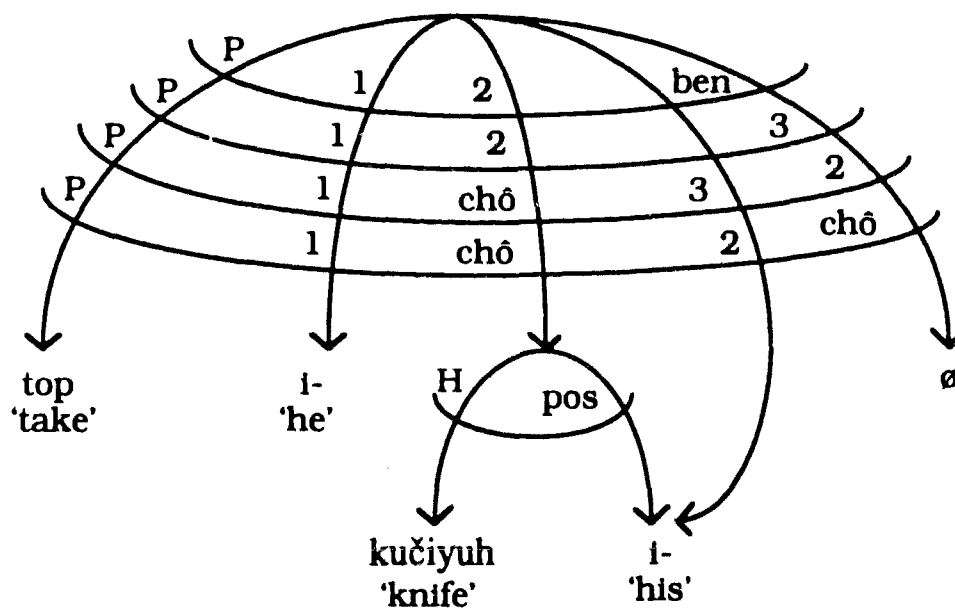
Rules	
Stratum One:	Benefactive-to-3 advancement
Stratum Two:	3-to-2 advancement
	Possessor ascension-to-3
Stratum Three:	3-to-2 advancement

Therefore, although Constable's analysis in (75) seems somewhat elaborate and not empirically substantiated, every step is justified by some tenet of RG, or by reference to previous analyses of other languages.

Constable's analysis of Huastec can be applied in its entirety to Sierra Popoluca data such as sentence (86), repeated from section 1.2.3. The corresponding stratal diagram appears in (87).

- (86) i-top-aʔy-aʔy i-kučiyuh.
 A3-take-APPL-APPL A3-knife
 'He_j took his_j knife away from him_{j,k}.'

(87)



In (87), the initial benefactive advances to 3 and then to 2, chômeurizing the initial 2. In the subsequent stratum, the possessor ascends to 3 while simultaneously, the benefactive nominal advances from 3 to 2. In the final stratum, the possessor nominal advances to 2, chômeurizing the benefactive applicative.

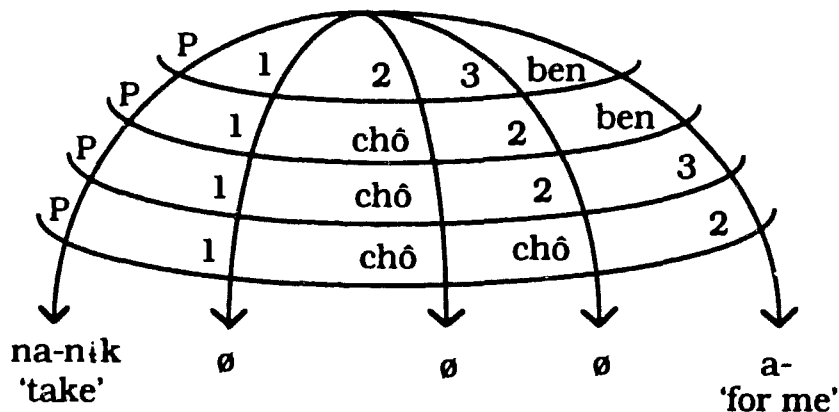
However, the remaining Sierra Popoluca data do not involve possessor ascension. In (88) and (89) below, two advancements occur in each sentence.

(88) heʔm petoh heʔm šiwan a-na-miñ-aʔy-aʔy.
 the Peter the John Blex-cause-come-APPL-APPL
 'Peter brought it to me on John's behalf.'

(89) a-na-nik-aʔy-aʔy-i.
 Blex-cause-go-APPL-APPL -imp
 'Take it to him on my behalf!'

I represent sentence (89) with the stratal diagram in (90).

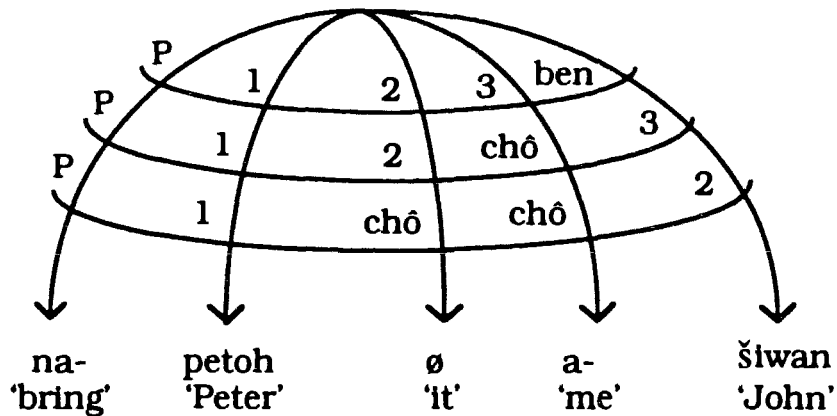
(90)



In stratal diagram (90), the initial 3 advances to 2, chômeurizing the initial 2. In the next stratum, the benefactive nominal advances to 3. Following this advancement, the benefactive advances from 3 to 2, chômeurizing the goal applicative and accounting for the agreement facts.

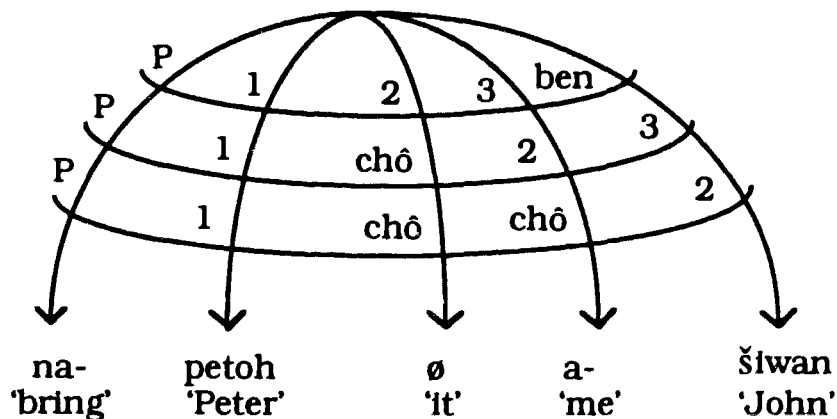
The representation of sentence (88) proves to be more involved. Here, the initial 3 determines agreement and so 3-to-2 advancement must follow the advancement of the benefactive.

(91)



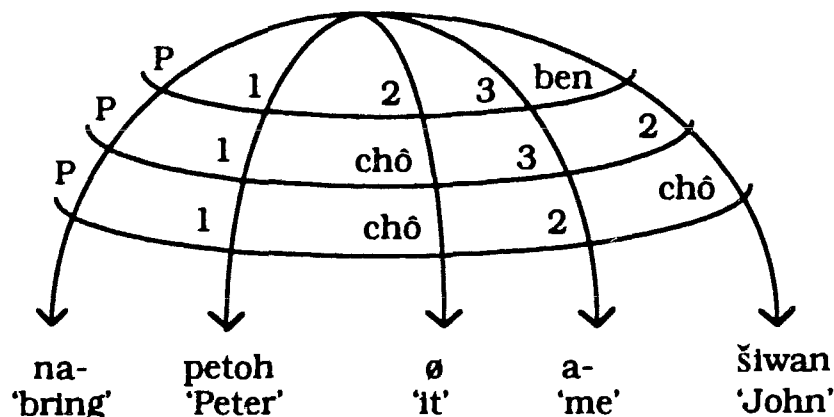
However, diagram (91) demonstrates that once the benefactive-to-3 advancement occurs, the initial 3 is chômeurized. This is problematic in that the agreement facts are contradicted and there is no motivation for a second applicative marker. The alternative is to follow the previous analyses and allow benefactive-to-3 advancement and 3-to-2 advancement to occur simultaneously.

(92)



The advancement of the benefactive to 3 and the 3 to 2 in the second stratum motivates the appearance of the first applicative marker. However, 3-to-2 advancement in the subsequent stratum chômeurizes the initial 3. Thus, this representation produces incorrect agreement since the benefactive, not the 3, is the final 2. Therefore, the only remaining alternative appears in (93).

(93)



In diagram (93), benefactive-to-2 advancement occurs in the second stratum, thus chômeurizing the initial 2, but leaving the initial 3 undisturbed. The 3 then advances to 2 in the final stratum, chômeurizing the 2 (the initial benefactive) and accounting for the agreement facts of sentence (88). The problem with this analysis is that RG now requires both benefactive-to-2 advancement and benefactive-to-3 advancement.

Constable's analysis of Huastec, while complex, explains the first Sierra Popoluca example. I explain the remaining Sierra Popoluca data in RG by positing a series of advancements.²⁰ Thus, it appears that RG accounts for multiple applicative constructions that involve two occurrences of the same verbal morphology.

²⁰These analyses, if correct, would invalidate the 2-AEX Law (Gerdtz and Whaley 1992, 1993).

2.5 SUMMARY

In summation, the Relational Grammar analysis of simple applicative structures involves two strata. With regard to the multiple applicative constructions, in languages with two instances of different markers, the Relational Grammar account involves a three-stratum analysis. These levels consist of an advancement followed by an ascension or an additional advancement. In those languages that use two occurrences of the same applicative marker, the Relational Grammar analysis requires four strata. This four-stratum analysis includes either three or four revaluation rules, depending on the language.

CHAPTER THREE: THE MAPPING THEORY APPROACH

Mapping Theory (MT) (Gerdt 1992a) began as a variation of Relational Grammar with the addition of a morphological component. Applicative structures in languages such as Korean (Gerdt 1993), Halkomelem, and Ilokano (Gerdt 1992a) have been previously examined in MT. In this chapter, I propose a MT treatment of multiple applicatives.

In section 3.1, I discuss the principles and representations employed in MT and contrast them with those of RG. In section 3.2, I discuss the MT analysis of applicative structures and the predictions it makes with regard to multiple applicative constructions. In section 3.3, I give a MT analysis of the languages that use two unique markers to indicate multiple applicatives. In section 3.4, I discuss the languages that involve two occurrences of the same markers to indicate multiple applicatives.

3.1 AN OVERVIEW

The central concept of Mapping Theory is the association of a level of GRs with a level of morphosyntactically-licensed argument positions or MAPs. These levels correspond approximately to initial and final GRs in RG. MAPs, like final GRs, are hierarchically ordered. However, the number of MAPs in a language is based on the number of arguments that get core morphosyntactic licensing.

Arguments are licensed in accordance with Relational Visibility²¹ (Gerdt 1990) either by Structural-Case (S-Case) (Gerdt 1991), by agreement, or by a fixed word order. For instance, in some languages, the maximum

²¹Gerdt (1990) defines Relational Visibility as follows: Every nominal must be relationally identified by some morphosyntactic means.

threshold of licensed arguments is two while in others it is three. In a 2-MAP language, either the subject and direct object would display agreement or a nominative/accusative case marking system would be used. Subject/object agreement is exemplified in Ojibwa (Perlmutter and Rhodes 1989).

- (94) Nwaabmaanaa.
 ni-waabam-ø-aa-naan
 1subj-see-an-3obj-1pl
 'We (excl) see him.'

In a 3-MAP language, either three-way agreement is found on the verb, or the case marking is nominative/accusative/dative as in the following Japanese (Gerdts 1992a) example.

- (95) John *ga* Mary *ni* kunsyoo *o* atae-ta.
 John nom Mary dat medal acc give-pst
 'John gave a medal to Mary.'

In MT representations, semantic roles align with grammatical relations.²² The grammatical relations are then linked to the appropriate MAPs. Example (94), a transitive sentence in a 2-MAP language, appears diagrammatically as (96).

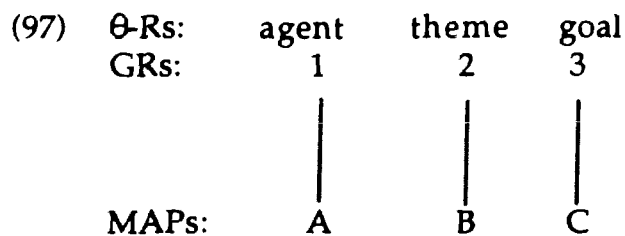
- (96) θ -Rs: agent theme
 GRs: 1 2
 MAPs: A B
-
- ```

 agent 1 theme 2
 | |
 v v
 MAPs: A B

```

In (96) the agent nominal aligns with the subject (1) while the theme aligns with the direct object (2). The 1 is then linked to the A-MAP while the 2 is linked to the B-MAP. (95), a sentence in a 3-MAP language is represented by the diagram in (97).

<sup>22</sup>Whether both  $\theta$ -roles and GRs are necessary components of the representation is a subject for further study.



In this diagram, the agent aligns with the 1, the theme with the 2, and the goal with the 3. The 1 then links to the A-MAP, the 2 to the B-MAP and the 3 to the C-MAP.

GRs are linked to MAPs in accordance with the following principles (Gerdt 1992a,b).

- (98) SATURATION PRINCIPLE: every MAP must be linked to a GR or canceled.  
 BIUNIQUENESS PRINCIPLE: every MAP is linked to a single GR (except for multiattachment under coreference), and every GR is linked to at most one MAP.  
 NO DELINKING PRINCIPLE: there are no "delinkings."

The two ways in which GRs and MAPs may be linked are:

- (99) UNMARKED associations proceed in a vertical, non-crossing, left-to-right fashion.  
 MARKED associations involve non-vertical linkings, the non-linking of a nominal, or the linking of an "extra" nominal not lexically subcategorized by the verb subject to specifications in a grammar.

Constructions which involve marked associations are characteristically accompanied by additional morphology, especially in head-marking languages.

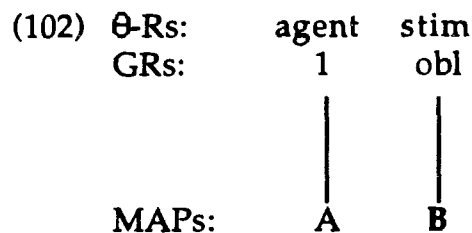
### 3.2 APPLICATIVE CONSTRUCTIONS

Gerdt (1993) gives the following MT rule for single applicatives.

- (100) Applicative  
 Add a MAP (up to threshold) and link the 3, oblique or possessor to the lowest available MAP.

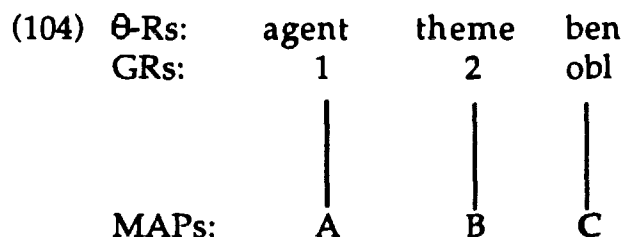
Thus, applicatives in MT are analyzed as constructions in which a stipulated GR is necessarily linked to the right-most MAP. The association of the applicatives and MAPs may be either vertical or non-vertical. The following sentence, originally cited in section 1.1.1, and its corresponding representation exemplify an applicative linked vertically through marked association in Thompson, a 2-MAP language.

(101)  $\text{lək}^w\text{-mí(n)-ne.}$   
 'I remember him.'



In diagram (102), the applicative increases the number of MAPs to two, the threshold in Thompson. Subsequently, the stimulus is linked to the B-MAP. The diagram in (104) is representative of an applicative in a 3-MAP language, here Georgian (Harris 1981).

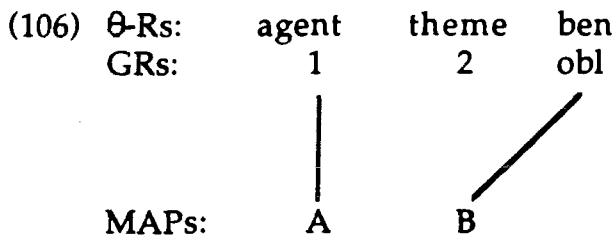
(103)  $\text{gelam} \quad \text{šegikera} \quad \text{axali} \quad \text{šarvali} \quad (\text{šen}).$   
 Gela-erg he-sewed-you-it-II-I new trousers-nom you-dat  
 'Gela made new trousers for you.'



The applicative in diagram (104) increases the number of MAPs to three, the threshold for Georgian. The benefactive is then vertically linked by marked association to the C-MAP.

An example of a marked applicative construction in a 2-MAP language occurs in (106). This diagram is representative of the Tzotzil sentence in (105), originally cited as (3).

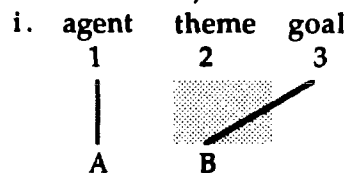
(105) č-a-h-mil-be-ik.  
asp-A2-E1-kill-APPL-2pl  
'T'll kill it/them for you (pl).'



The transitivity of diagram (106) means that both of the two possible MAPs are already present in the structure. As a result, the goal cannot add another MAP, but is instead linked through marked association to the lowest available MAP, the B-MAP. The presence of the applicative marker indicates that the applicative is licensed. Both the A-MAP and the B-MAP are assigned, but the theme remains unlinked.<sup>23</sup>

The representation of a possessor applicative varies slightly from that of other applicatives. Although it is linked through marked association, the possessor originates as a subset of another argument. Gerdts (1993) represents a possessor applicative in Korean (107) as in (108).

<sup>23</sup>The status of an unlinked theme depends on language-specific parameters. In some languages, such as Halkomelem (Gerdts 1992a), an unlinked theme remains unlicensed by the verb and may be licensed by other means, for instance a preposition. In other languages, such as Korean (Gerdts 1993), the unlinked theme may acquire case through case spread under the condition of overrun. In these instances, the linking of the applicative trespasses on the vertical region of the theme or, more formally, it overruns the theme, as indicated in (i).



As a result, the case on the goal may be spread to the theme.

(107) Yangswu-ka Swuni-lul elkwul-ul kuli-ess-ta.  
 Yangswu-nom Swuni-acc face-acc draw-pst-ind  
 'Yangsu drew Soonni's face.'

(108)  $\theta$ -Rs: agent theme [possessor]<sup>24</sup>  
 GRs: 1 2 [pos]  
 MAPs: A B

Since Korean is a 2-MAP language, no MAP is added in the applicative. The possessor is linked to the B-MAP through marked association and, thus, appears in accusative case. The theme remains unlinked.<sup>25</sup>

Thus, MT appears to be able to account for the applicative data discussed in section 1.1. With respect to multiple applicatives, Gerdts (1992a) contends, based largely on the 2-AEX Law (Gerdts and Whaley 1992, 1993), that they will be ungrammatical. She states that multiple applicatives would violate the Biuniqueness Principle in (98) since to become licensed, both applicatives would necessarily link to the lowest available MAP. This violation is illustrated in (109).

(109)  $\theta$ -Rs: agent theme goal ben  
 GRs: 1 2 3 obl  
 MAPs: A B

The Biuniqueness Principle would allow this type of structure only when the nominals are coreferent. The ungrammaticality of (109) is correct for

<sup>24</sup>The brackets around the possessor nominal is the MT method of representing the internal NP of a possessor ascension construction. Should the possessor not ascend, the possessive nominal would be indicated solely by the GR of the host.

<sup>25</sup>The theme receives accusative case as a result of the case spread phenomenon discussed in footnote 13.

languages such as Halkomelem and Ilokano (see (11) through (13)). However, like the 2-AEX Law, this prediction is too strong since some languages allow multiple applicative constructions. In the following section, I propose a modification to MT that will allow multiple applicative constructions while nevertheless maintaining the Biuniqueness Principle.

### 3.3 TWO OCCURRENCES OF DIFFERENT MARKERS

I first consider multiple applicative constructions indicated by two different markers. The discussion begins with a reexamination of the Kinyarwanda data. Example (110), previously cited as (40), is represented in (111).

- (110) Úmwáana y-iicar-i-yé-ho íntebe umugabo.  
 child he-sit-APPL-asp-APPL chair man  
 'The child is sitting on the chair for the man.'

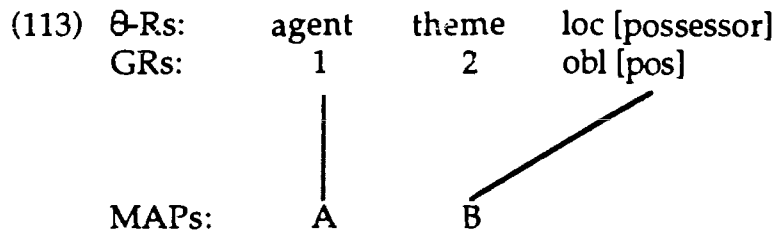
- (111)  $\Theta$ -Rs: agent loc ben  
 GRs: 1 obl obl  
 MAPs: A B C
- $\begin{array}{c} | \\ | \\ | \end{array}$

The applicatives in (111) each add a MAP to the structure. The locative is then linked vertically to the B-MAP and the benefactive to the C-MAP.

In the following sentence, previously cited as (41), a possessor applicative co-occurs with a locative applicative.

- (112) Úmwáana y-a-andik-i-yé-mo umugabo igitabo izíná  
 child he-pst-write-APPL-asp-APPL man book name  
 rye.  
 of him  
 'The child wrote in the man's book his name.'

The representation corresponding to this sentence appears below.



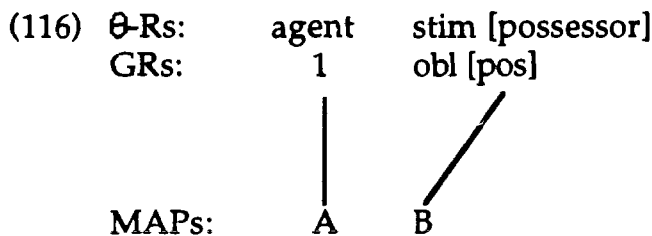
In this diagram, the possessor applicative is linked to the B-MAP through non-vertical marked association, leaving the theme and the locative unlinked. Both applicative markers on the verb occur as a result of this single linking. Because the possessor is a subset of the entire possessive construction which is itself a locative, the linking of the possessor entails the linking of a portion of the locative. Thus, the MT treatment of multiple applicatives in Kinyarwanda is straightforward.

Most of the Northern Interior Salish data follows this same analysis. The following examples, (114) from Thompson and (115) from Lillooet, are repeated from (36) and (38).

(114) pún-m-x-cm-s.  
 find-APPL-APPL-1sObj-3subj  
 'He finds my. . .'

(115) cʔas-miñ-xít-kan      kʷ-s-kíkaʔ      ʔi-xʷikáý-s-a.  
 come-APPL-APPL-1subj det-nom-Kíka    det-prepared salmon-3spos-ptc  
 'I am coming to get the prepared salmon that belongs to Kíkaʔ.'

For example, sentence (115), where a possessor applicative co-occurs with an oblique, is represented as follows:



In this representation, the possessor applicative is linked to the B-MAP through marked association, leaving the theme unlinked. And, because the possessor is a subset of the entire possessive construction, the linking of the possessor entails the linking of a portion of the oblique.

However, this analysis does not extend to sentences such as the Lillooet example in (117), repeated from (37), where this part-whole relationship does not obtain. The MT representation of sentence (117), consistent with the Biuniqueness Principle, appears below.

- (117) tx<sup>w</sup>us-miñ-xí[t]-c-kax<sup>w</sup>      ni-n-čqáǰ<sup>?</sup>-a.  
 look-APPL-APPL-1sObj-2sSubj      det-1spos-horse-ptc  
 'Look out for my horse for me.'

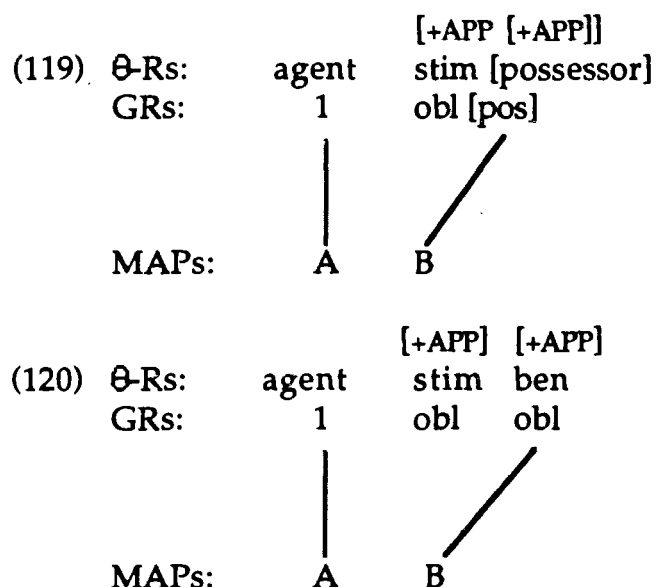
- (118) θ-Rs:      agent      stim      ben  
 GRs:          1          obl      obl  
  
 MAPs:          A          B
- 

Since the applicatives do not share a part-whole relationship and the stimulus is unlinked, there is no explanation for the applicative marking. But, because the stimulus does trigger applicative marking on the verb, one may conclude that an applicative is not necessarily mapped as was previously assumed.

Thus, I propose that applicatives are constructions that expand the core-argument structure. A nominal such as an oblique or a goal in a 2-MAP language is included in the same class as are the subject or direct object. The applicative markers mark the presence of an argument that has attained core status. Where the language's threshold allows, as the core-argument structure expands, the number of MAPs will expand accordingly. This is illustrated by

the Kinyarwanda example in (111), in which the applicatives are linked through vertical marked association.

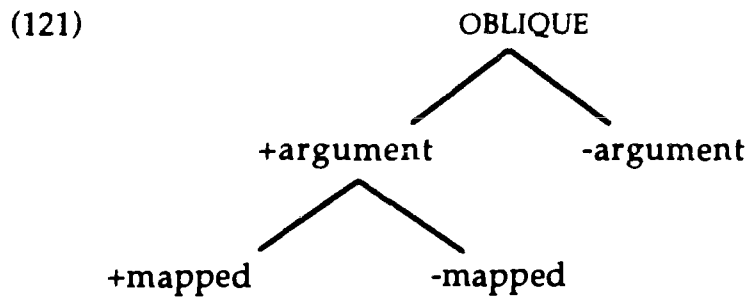
For present purposes, it is sufficient to state that the right-most applicative will link to the right-most MAP. Under this new analysis, the sentences in (114) and (115) would be represented as (119), while the sentence in (117) would appear as (120).



In these representations, the growth of the argument structure is indicated above the theta-roles.<sup>26</sup> The right-most applicatives are then linked to the B-MAPs and are licensed.

This modification of MT creates a third classification of oblique. Until now, obliques in MT were of two types, those that were not arguments and those that were arguments and were mapped. Now, a three-way distinction occurs as illustrated in (121).

<sup>26</sup>In (119), the bracketing reflects the part-whole relationship of the possessive construction.



An oblique that is not an argument will be expressed by peripheral means, for example, as a prepositional phrase. An oblique that is a mapped argument has core morphosyntactic licensing, and thus will display the appropriate case or agreement. An oblique that is an unmapped argument will resemble unmapped 2s or 3s in a language. For example, it may appear as a plain noun phrase, but it will not license agreement. The following data from Lillooet exemplifies these distinctions.

- (122) ʔə/l            ti-cit -a.  
          toward/in   det-house-ptc  
          'Toward/in the house.'

- (123) pún-m-x-cm-s.  
          find-APPL-APPL-1sObj-3subj  
          'He finds my. . . '

- (124) txʷus-miŋ-xí[t]-c-kaxʷ            ni-n-čqáχʷ-a.  
          look-APPL-APPL-1sObj-2sSubj   det-1spos-horse-ptc  
          'Look out for my horse for me.'

- (125) ʔáz'-xit-kan            ni-n-s-kíxəzʷ-a            ti-kapúh-a.  
          bought-APPL-1sSubj   det-1spos-nom-mother-ptc   det-coat-ptc  
          'I bought my mother the coat.'

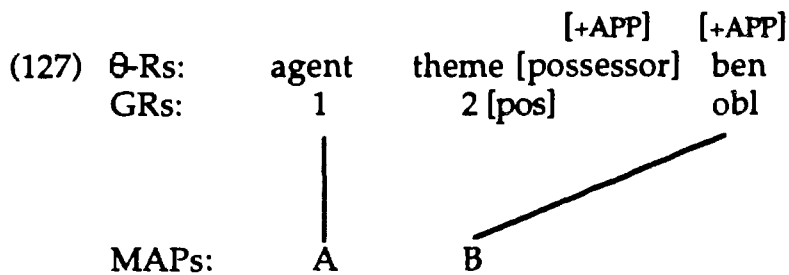
Example (122), contains an example of an oblique that is not an argument. In this case, it is expressed as a prepositional phrase. Sentence (114), repeated here as (123), contains an example of a mapped argument, illustrated in diagram (119) above. As anticipated, this mapped argument triggers agreement on the verb. An oblique that is an unmapped argument is

illustrated in sentence (117), repeated here as (124). The corresponding representation for this sentence appears in (120). As predicted, this unmapped argument oblique resembles the unmapped 2 in sentence (125), in that both nominals appear as plain noun phrases.

### 3.4 TWO OCCURRENCES OF THE SAME MARKER

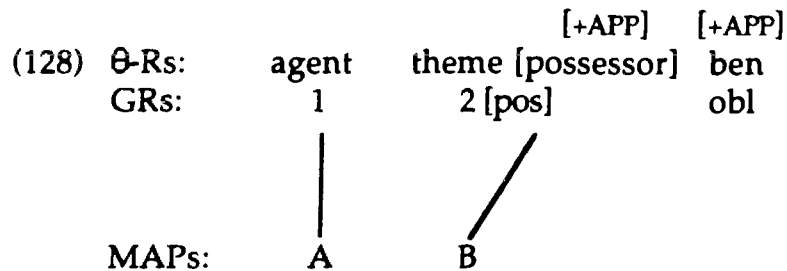
In this section, I examine the multiple applicative constructions that are indicated with repeated occurrences of the same marker. This discussion commences with data from Huastec, a 2-MAP language, represented in (122).

- (126) Tu    nuju-tzi-tzi-ø    t-a    bitziim-al.  
          1/2s   sell-APPL-APPL-pfv   cl-2spos   horse-pos  
          'I sold your horse for you/for him.' or  
          'I sold you/him your horse.'



In (127), the core-argument structure has expanded to include the possessor and benefactive applicatives. The agent has linked to the A-MAP through unmarked association and the right-most applicative, the benefactive, is licensed by linking through marked association to the B-MAP. The problem with this analysis is that the agreement facts of sentence (126) indicate that the possessor applicative, not the benefactive, is licensed by the verb. Thus, the

representation should appear as that in (128).<sup>27</sup>



In (128), the licensing facts are correctly determined by the mapping of the possessor applicative. Therefore, the remaining issue is to determine the method by which one of the two applicatives will ultimately be linked to the lowest available MAP and become licensed by the verb. In attempt to resolve this issue, I propose that person/animacy hierarchies determine which applicative will be mapped.

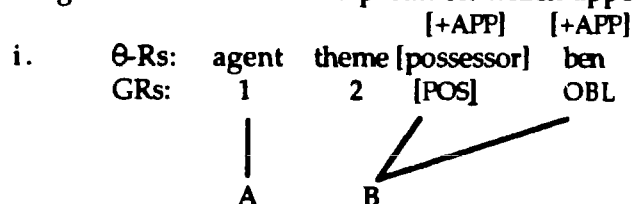
In a number of languages, nominals are ranked with respect to person or animacy. These hierarchies condition certain constructions within the language. For example, Jolley (1983) examines person/animacy in the Algonquian languages and discovers the following hierarchy.

(129) 2nd > 1st > 3rd > 3rd obviative > inanimate.

This is relevant since the person/animacy hierarchy determines what is known as the direction of the sentence. A sentence where the subject is ranked higher than the direct object will appear in direct form. However, when the direct object outranks the subject, the sentence appears in the

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<sup>27</sup>This discussion concerns only the disjoint reference meaning. MT has no problem in representing the coreferential interpretation which appears as (i).



Because the applicatives are coreferential, the Biuniqueness Principle will not prohibit this structure.

inverse form. This is illustrated below in (130) and (131) in Ojibwa (Perlmutter and Rhodes 1989).<sup>28</sup>

(130) Nwaabamaa.  
ni-waabam-Ø-aa  
1subj-see-an-3obj  
'I see him.'

(131) Nwaabamig.  
ni-waabam-Ø-igo  
1subj-see-an-inv  
'He sees me.'

In (130) the direct form of the verb is used, as the first person subject outranks the third person direct object according to the hierarchy in (129). In (131), the inverse marking appears on the verb, since the third person subject of the sentence is outranked by the first person direct object in the same hierarchy.

The MT analysis of inverse constructions follows:<sup>29</sup>

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<sup>28</sup>A person/animacy hierarchy also determines direction in Navajo when two third person nominals are involved (Young and Morgan 1987, Frishberg 1972) as the following examples demonstrate (Woolford 1986).

i. ashkii at'ééd yizts'Qs.  
boy girl 3-kissed-3  
'The boy kissed the girl.'

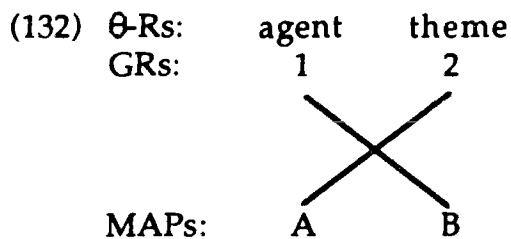
ii. ashkii at'ééd bizts'Qs.  
boy girl 3-kissed-by-3  
'The boy was kissed by the girl.' (~'The girl kissed the boy.')

By contrast, in Southern Tiwa, passive morphology occurs when the object outranks the subject on a person/animacy hierarchy (Allen and Franz 1983) as demonstrated in the following example.

iii. Seuanide-ba te-mu-che-ban.  
man-instr 1sg-see-pass-past  
'The man saw me.' (~'I was seen by the man.')

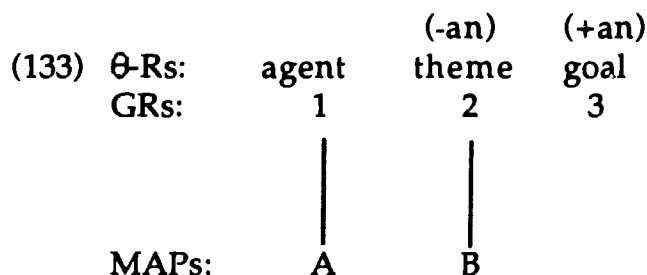
<sup>29</sup>This is simply a MT representation of the analysis in Perlmutter and Rhodes (1989). They analyze the Ojibwa inverse constructions as being instances of Subject-Object Reversal. Their analysis appears in (i).

i. Reversal  
1 2  
2 1



In this analysis, the agent regularly aligns with the 1 and the theme with the 2. However, the 1 is then non-vertically linked to the B-MAP and the 2 to the A-MAP. These crossing association lines trigger the inverse morphology on the verb.<sup>30</sup>

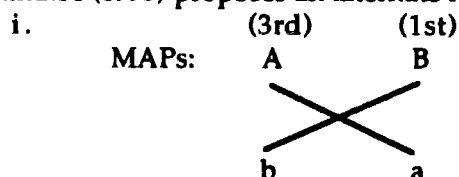
Relative ranking of nominals is also used in languages such as Halkomelem (Gerds 1988b). These languages ban sentences with representations like the one in (133).



The basis for the prohibition against this type of construction is that in every instance, the theme will be inanimate while the goal will be animate. Because

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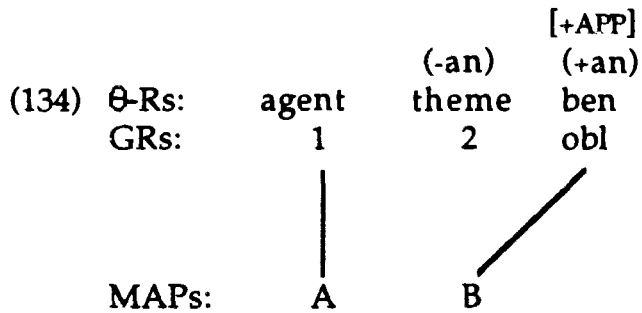
<sup>30</sup>Samkoe (1993) proposes an alternate MT representation for inverse sentences.



where:  $B > A$ .

Because the B-MAP outranks the A-MAP on the person/animacy hierarchy, the MAPs are linked to an additional level—the presentational level. At the presentational level, the morphological features assigned to each MAP for direct sentences are exchanged for inverse sentences. Thus, the A-MAP is licensed as a direct object, while the B-MAP is licensed as a subject. This feature transfer, represented by the crossing lines, is accompanied by inverse morphology on the verb.

animacy takes precedence, the goal will always be mapped. The appropriate structure appears in (134).

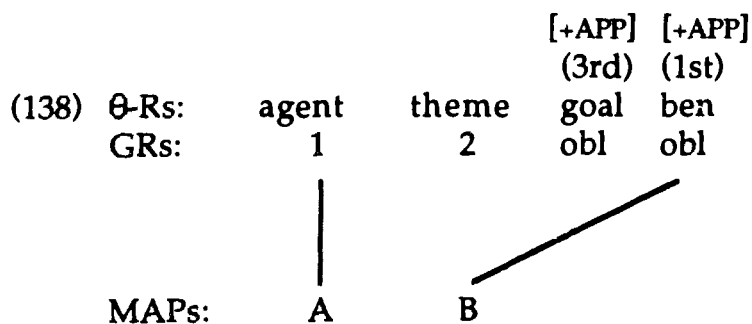
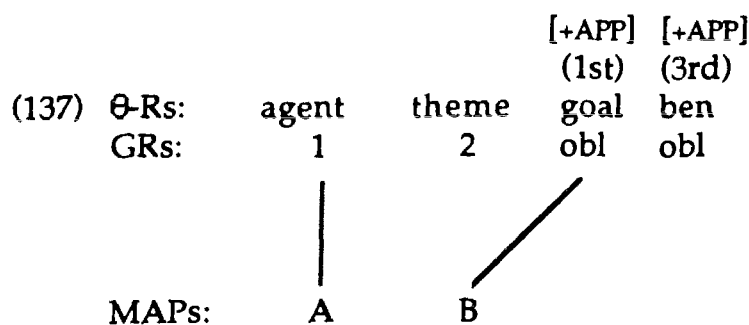


The Halkomelem data have shown that person/animacy hierarchies play a role in determining which of two nominals will link to the B-MAP. To determine the role of person/animacy hierarchies in mapping multiple applicatives, I reexamine the following Sierra Popoluca sentences, repeated from (48) and (49).

(135) heʔm     petoh     heʔm     šiwan     a-na-miñ-aʔy-aʔy.  
          the     Peter     the     John     Blex-cause-come-APPL-APPL  
          'Peter brought it to me on John's behalf.'

(136) a-na-nik-aʔy-aʔy-i.  
          Blex-cause-go-APPL-APPL -imp  
          'Take it to him on my behalf!'

In sentence (135) the benefactive applicative is third person while the goal applicative is first person. In (136) the benefactive applicative is first person while the goal applicative is third person. Thus, person/animacy hierarchies predict that a first person nominal will outrank a third person nominal. Based on this prediction, the goal applicative will be mapped in (135) while in (136), the benefactive applicative will be mapped. The representations for sentences (135) and (136) appear below.



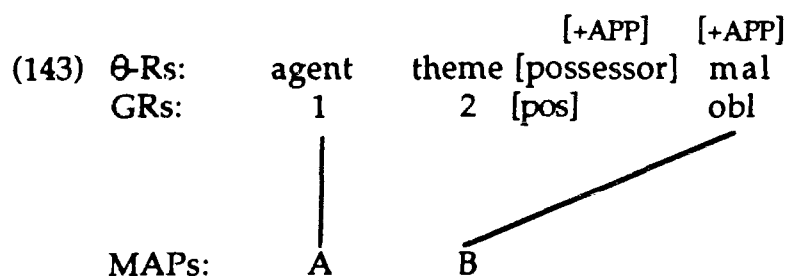
In both (137) and (138), the core-argument structures are expanded to include both the goal and benefactive applicatives as terms. Following this expansion, the nominal that is ranked highest on a person/animacy hierarchy is linked to the B-MAP. In (137) the goal applicative is mapped while in (138) it is the benefactive. Thus person/animacy hierarchies correctly predict the linking patterns of these sentences.

The remaining Sierra Popoluca sentence, which was first cited in (47), appears in (139).

- (139) i-top-aʔy-aʔy                      i- kučiyuh.  
           A3-take-APPL-APPL        A3-knife  
           ‘He<sub>i</sub> took his<sub>j</sub> knife away from him<sub>j,k</sub>.’

Because both applicatives in (139) are third person singular nominals, the person/animacy hierarchy makes no predictions about which will be mapped. According to the gloss, the applicatives may be interpreted as either coreferential or disjoint in reference. The coreferential interpretation of this multiple applicative construction has the following representation.



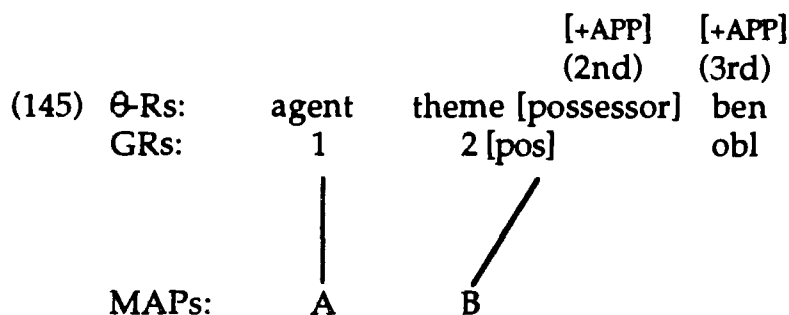


Further study is required to determine which of these structures is most suitable.

In reconsidering the Huastec data that prompted this discussion, one finds that the possessor applicative is second person singular while the benefactive applicative is third person singular.

- (144) Tu nuju-tzi-tzi-ø t-a bitziim-al.  
 1/2s sell-APPL-APPL-pfv cl-2spos horse-pos  
 'I sold your horse for you/for him.' or  
 'I sold you/him your horse.'

If it is assumed that second person nominals outrank third person nominals in Huastec, the higher ranked possessor nominal should be linked to the B-MAP rather than the right-most benefactive nominal. The agreement facts indicate that this does occur, further supporting the roles of person/animacy hierarchies in mapping applicatives. Thus, the diagram which first appeared in (128), is the actual representation of the Huastec sentence in (144).



### 3.5 SUMMARY

In review, Mapping Theory (Gerdt 1992a) provides an efficient two-level account of single applicative constructions. However, the analysis of multiple applicative constructions with two different markers is initially problematic. The concept of an applicative as a GR that is necessarily linked to the lowest MAP cannot be maintained for multiple oblique applicatives since the linking of both applicatives creates a violation of the Biuniqueness Principle. Therefore, I provide an alternative view of applicatives: applicatives augment the core-argument structure.

The multiple applicative constructions with two of the same markers cause another difficulty. Because these data demonstrate that it is not always possible to predict which applicative will be mapped, another elaboration is required. Therefore, I provide a person/animacy hierarchy on which each applicative is ranked. The applicative that ranks the highest is linked to the lowest available MAP and is licensed in the sentence.

Thus, MT defines an applicative as a nominal that acquires core-argument status. Those languages that do not use a person/animacy hierarchy to license one of the applicatives in a multiple applicative construction use the default setting and license the right-most applicative.

Although there is variation in some languages as to which applicative is mapped, and therefore licensed, a situation where neither applicative is mapped never occurs. Similarly, a situation where both applicatives are mapped, never occurs, save those constructions that involve coreference. Furthermore, for languages such as Halkomelem and Ilokano, multiple applicative constructions are ungrammatical. In these languages, each applicative would need to be mapped in accordance with a language-specific

parameter. Mapping two applicatives, however, would violate of the Biuniqueness Principle.

The three possible mapping patterns for multiple applicative constructions appear in Table 3.

Table 3: Multiple Applicative Mapping Patterns

| *Mandatory | Default: Right-Most | Person/Animacy Hierarchy |
|------------|---------------------|--------------------------|
| Halkomelem | Kinyarwanda         | Huastec                  |
| Ilokano    | N. I. Salish        | Sierra Popoluca          |

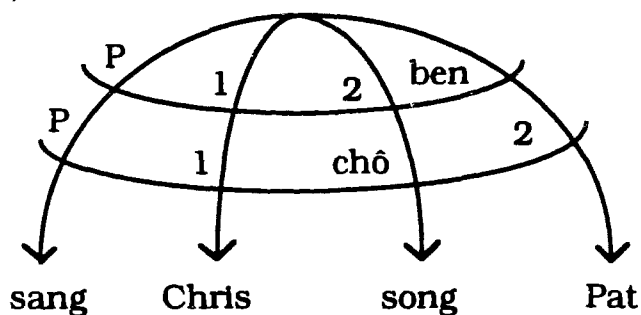
## CHAPTER FOUR: MAPPING THEORY VS RELATIONAL GRAMMAR

This study included single applicative constructions as well as multiple applicative constructions of the languages where two different applicative markers are used and those where two of the same applicative markers are used. In Chapter Two, I provided a Relational Grammar analysis of applicatives. In Chapter Three, I examined the same data within Mapping Theory. The focus of this final chapter is to compare the two treatments and determine, if possible, which is better.

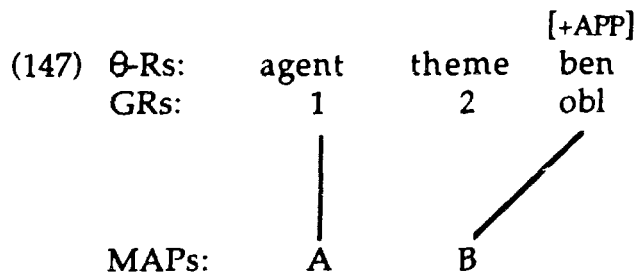
### 4.1 APPLICATIVE CONSTRUCTIONS

Both RG and MT appear to account for single applicative constructions with equal felicity. RG requires a two level analysis in which either an advancement or an ascension occurs. The typical stratal diagram for an applicative construction in this theory appears in (146).

(146)



The initial benefactive nominal advances to 2, chômeurizing the initial direct object. The MT account of applicatives is equally simple.

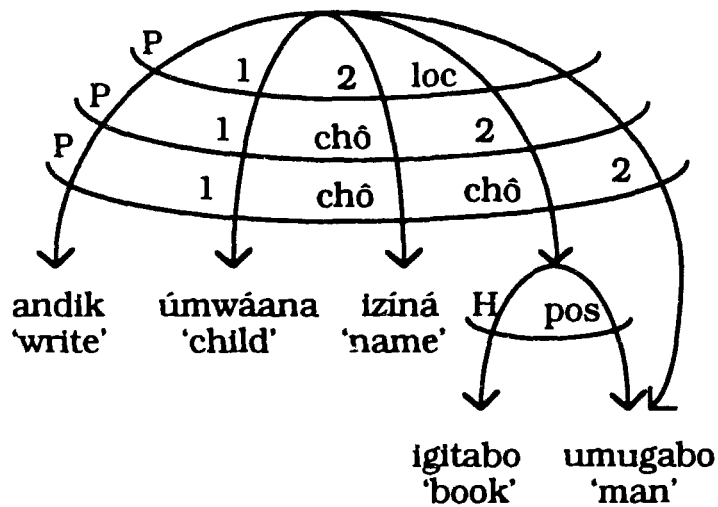


In MT, the argument structure expands to include an additional core element and the number of MAPs expands up to threshold. The applicative is then linked to the lowest available MAP.

#### 4.2 TWO OCCURRENCES OF DIFFERENT MARKERS

In the case of multiple applicative constructions marked with two occurrences of different MAPs, there is again little difference in the complexity of analysis. The RG account of this type of construction appears below.

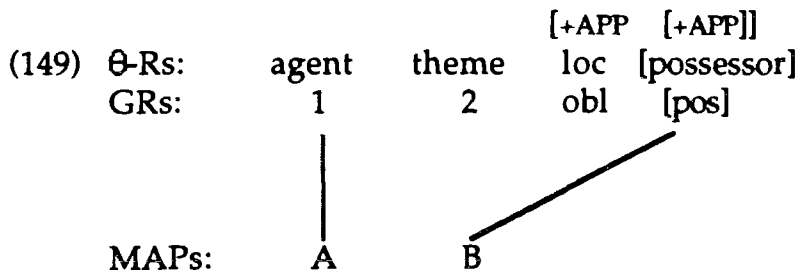
(148)



In these constructions, the initial oblique advances to 2 in the first stratum, chômeurizing the initial 2 and providing the first instance of verbal morphology. In the following stratum, the possessor ascends to 2 from its

oblique applicative host, chômeurizing that host and providing the second instance of applicative marking.

In the MT account, the following representation is equivalent to that discussed in the RG analysis.

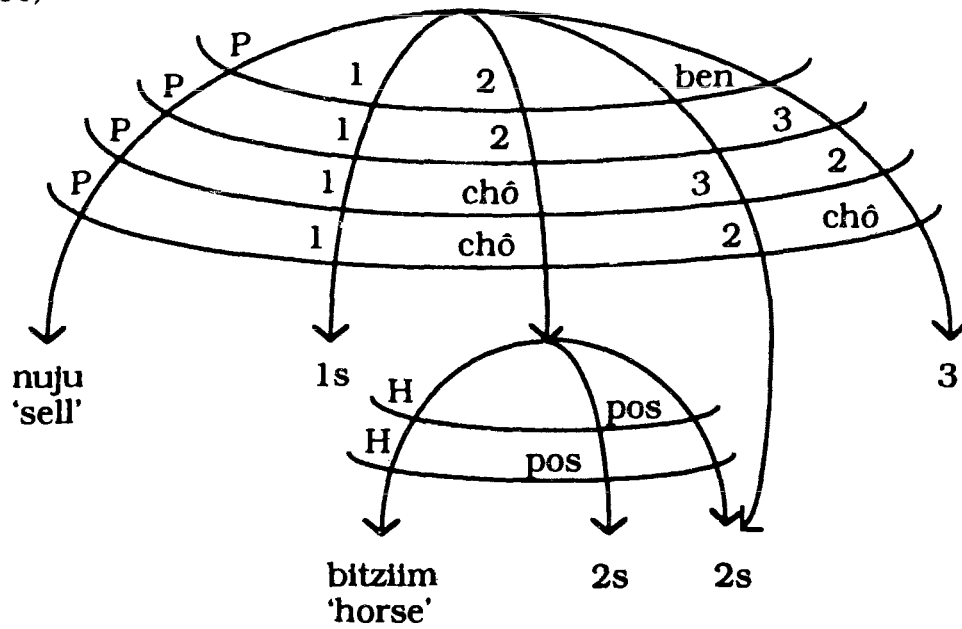


In (149), the argument structure expands to include both the locative and the possessor within it as arguments. This triggers the two applicative markers on the verb and is indicated in the diagram above the theta-grid. Then the applicative that is the right-most, or in some languages the highest ranked on the person/animacy hierarchy, is linked to the B-MAP.

#### 4.3 TWO OCCURRENCES OF THE SAME MARKERS

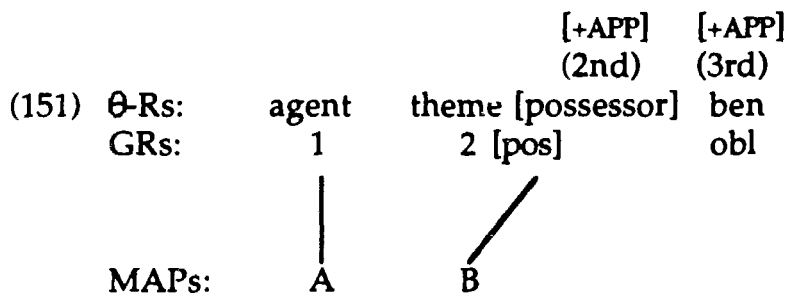
This section deals with the comparison of RG and MT with regard to those languages that indicate multiple applicative constructions with two occurrences of the same verbal morphology. Once again I begin with the four level RG analysis based on Huastec.

(150)



The RG account requires a four-level analysis with four rules, two of which occur simultaneously.<sup>31</sup> In the first stratum, the benefactive nominal advances to 3. In the second stratum, the possessor ascends from its direct object host to 3, while simultaneously the benefactive nominal, now a 3, advances to 2, chômeurizing the possessive host. In the final stratum, the possessor undergoes 3-to-2 advancement, thereby chômeurizing the benefactive applicative. Each application of 3-to-2 advancement correlates with an applicative marker.

The MT analysis is much less complex than its RG counterpart.



<sup>31</sup>Four rules which occur in four strata is an oddity in Relational Grammar. Normally, each revaluation rule requires one stratum in addition to the initial stratum which brings the total to five strata.

In this diagram, the argument structure has expanded to include the possessor and benefactive as arguments, as evidenced by the two occurrences of the applicative marker on the verb. In accordance with the person/animacy hierarchy, the second person possessor is linked to the B-MAP over the third person benefactive.

Relational Grammar and Mapping Theory appear to analyze the data equally well. Both theories account for the single applicative constructions with a two-level analysis. With regard to multiple applicative constructions with two different markers, RG requires three levels to account for the phenomenon. However, MT requires modification of its concept of applicative. Multiple applicative constructions with two of the same markers prove to be the deciding factor. While the RG analysis requires four levels, MT again requires only two. Although MT requires the addition of a person/animacy hierarchy to completely account for the data, its analysis proves to be far simpler than that of RG. Thus, the MT analysis is preferred.

#### 4.4 LANDING SITES

The one final consideration in this comparison of theories is a typology of rules. In RG, revaluations to subject, direct object and indirect object are all possible. However, not all of these constructions are attested in every language. Therefore, RG is not constrained enough for some languages. As a result, Gerdts (1992b) proposes the following principle:

(152) Landing Site Principle:

Part A. Only morphosyntactically-licensed argument positions can be revaluation landing sites.

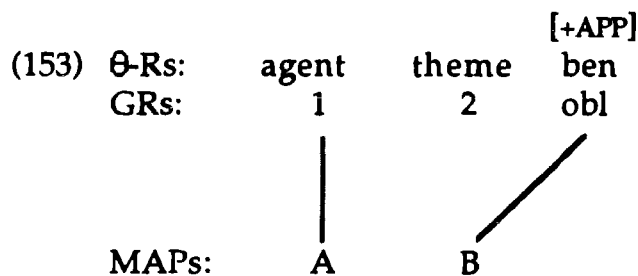
Part B. The last MAP is the preferred landing site.

She shows the validity of this principle based on data from thirty-five languages. Languages with two-way case/agreement systems make use of a

direct object landing site. That is, only advancements and ascensions-to-2 are attested in these languages. By contrast, advancements and ascensions in three-way languages target the indirect object.

The constraints placed on RG by the Landing Site Principle mean that the analyses of Huastec and Sierra Popoluca multiple applicative constructions cannot be maintained. Because Huastec and Sierra Popoluca only license two arguments, the indirect object cannot be a landing site. This exclusion means that Constable's two crucial rules for Huastec, benefactive-to-3 advancement and possessor ascension-to-3, do not occur in this language. Additionally, it excludes the two RG analyses of Sierra Popoluca which involve advancements to 3.<sup>32</sup> Because the treatment relies heavily on these rules and their ordering to account for these data, when these rules become invalid, so must the analysis.

By contrast, the Landing Site Principle is incorporated into MT. As a result, the MT approach to landing sites means that only the outer MAPs will be targeted. Thus, in a 2-MAP language, the subject links to the A-MAP, while the oblique links to the B-MAP and the direct object remains unlinked.

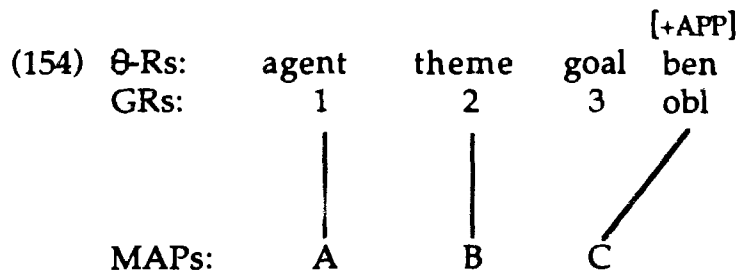


In a 3-MAP language, the subject will again link to the A-MAP, while the oblique will target the other outermost MAP, the C-MAP, for linking. The

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<sup>32</sup>The exclusion of the indirect object as a possible landing site compromises Aissen's (1987) analysis of Tzotzil, since Tzotzil is also a 2-MAP language. By contrast, the possessor ascension-to-3 analysis in Choctaw (Davies 1984) is valid since Choctaw is a 3-MAP language.

direct object will link to the B-MAP in an unmarked association and the indirect object will remain unlinked.



Because MT makes the correct predictions about how to constrain landing sites, and because Sierra Popoluca and Huastec are 2-MAP languages, MT is clearly best able to account for the multiple applicative data.

#### 4.5 SUMMARY

In summary, the comparison of Relational Grammar and Mapping Theory yields the following results. First, both theories account for the single applicative constructions with two level analyses. Second, with regard to multiple applicative constructions that are marked with two different markers, both theories again account for the data equally well. RG requires a three level analysis while MT uses only a two level account with a modification to the concept of applicative.

However, in accounting for the final data, those multiple applicative constructions that are indicated through two occurrences of a single marker, the MT account is better. The RG analysis requires four levels of analysis and four rules. MT provides a two level analysis that is constrained, in some languages, by a person/animacy hierarchy. Furthermore, when the phenomena are examined from the point of view of landing sites, it is evident that the rules involved in the RG analysis are inappropriate. Thus, the MT account of multiple applicative constructions is superior.

## CONCLUSION

This thesis had two initial purposes: to compile a typology of multiple applicative constructions of the world's languages and to give a syntactic analysis of the multiple applicative data.

A survey of the literature yielded only six languages that contained multiple applicative constructions. Once these six were assembled, I categorized them on the basis of the verbal morphology used for the applicative. Of the six languages, Kinyarwanda and the Northern Interior Salish languages Lillooet, Shuswap and Thompson have multiple applicative constructions with two occurrences of different verbal morphology. The remaining two languages, Huastec and Sierra Popoluca, have multiple applicative constructions with two occurrences of the same applicative marker.

This thesis concentrates on two relational treatments of multiple applicative constructions. The first, Relational Grammar, easily handles both single applicative constructions and those multiple applicative constructions marked with unique verbal morphology. However, the RG analysis of multiple applicative constructions marked with two occurrences of a single marker is extremely complicated.

The second treatment, Mapping Theory, is also efficient in accounting for the single applicative constructions. The problems MT encountered with the analysis of the multiple applicative constructions were mitigated by two modifications of the theory. These modifications shift the burden of analysis from the syntax onto the morphology and semantics. First, the MT concept of applicative is redefined as a nominal which acquires core-argument status. This prevents the multiple applicative constructions not involving a part-

whole relationship from violating the Biuniqueness Principle. Secondly, the incorporation of a person/animacy hierarchy provides the means by which applicatives, in some languages, are selected for linking with MAPs. This accounts for the multiple applicative constructions marked with two occurrences of a single marker where the mapped applicative varies according to its rank. Those languages which do not use the person/animacy hierarchy, use the default setting and license the right-most applicative. With these elaborations in place, MT provides a more forthright analysis for the multiple applicative constructions than does RG.

Unfortunately, I am unable to draw a conclusion as to which languages allow multiple applicative constructions and which do not. However, I have observed two generalities in this study. The first involves possessor ascension. Although multiple applicative constructions are not attested in all languages which have possessor ascension, the reverse is true. That is, each language which allows multiple applicatives also allows possessor ascension. By contrast, languages such as Ilokano and Halkomelem, which ban multiple applicative constructions, do not include possessor ascension among their possible revaluation rules.

The second generality involves coreference. Although multiple applicative constructions are not attested in each language that allows coreference, again the reverse is true: each language that has multiple applicatives contains an example of either a possessor of an applicative, or a possessor that is coreferent with an oblique applicative. By contrast, languages such as Halkomelem do not allow multiple applicative constructions even when the applicatives are coreferent.

MT easily accommodates instances of multiple applicatives involving coreference and possessor ascension out of applicatives. Based on the ease of this accommodation, one could conclude that the presence of either construction in a language initiates multiple applicatives. The presence of multiple applicative constructions in a language produces stacked morphology on the verb. Once this stacked morphology exists, an expansion to include multiple applicatives involving two obliques that are disjoint in reference would occur. In these cases, only one applicative is linked in accordance with the Biuniqueness Principle. However, this conclusion is at best speculative since it is based on such limited data.

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