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Volume 39

Doris L. Payne and Immanuel Barshi (eds)

*External Possession*

# EXTERNAL POSSESSION

Edited by

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## Mapping Possessors

### Parameterizing the External Possession Construction

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#### Introduction

Many languages of the world exhibit External Possessor Constructions (EPCs), in which a nominal occupying a core syntactic position (subject, object, or indirect object) is semantically interpreted as the possessor of an NP-argument of the predicate, most generally the theme.<sup>1</sup> This paper considers the status of the external possessor in various languages and whether or not this can be predicted based on other properties of the language. I show on the basis of a sample of twenty-two languages that the surface relation of the external possessor depends upon the language's morphosyntactic argument structure. Also, this paper gives an account of EPCs in Mapping Theory (MT), a revised version of Relational Grammar (RG) that incorporates a level of morphosyntactic argument structure, which is subject to language specific variation. Mapping Theory, in allowing for cross-linguistic variation at this level of structure, makes a straightforward prediction concerning the external possessor.

EPCs have received much attention in the RG literature. Examples from dozens of languages have been discussed. The cross-linguistic data show one fact very clearly: the possessor in EPCs based on transitive clauses takes on direct object properties in some languages, as in (1), but indirect object properties in others, as in (2).<sup>2</sup>

- (1) a. Chamorro (Gibson 1992)

*Ha fa'gasi-yi yu' si Flory ni magagu-hu.*  
3SG wash-ASC 1SG PN F OBL clothes-my  
'Flory washed my clothes (for me).'

- (2) a. Halkomelem (Gerdts 1989: 267, 311)  
*ni? tʃi:2q"-t-3s tə steni? k"θa sq"améj.*  
 AUX comb-hair-TRANS-3ERG DET woman DET dog  
 'The woman combed the dog's hair.'
- b. Georgian (Harris 1976: 191, iic)  
*iam gauréxa perangi gelas.*  
 Ia:ERG she:washed:him:it:II:Vc1 shirt:NOM Gela:DAT  
 'Ia washed Gela's shirt.'
- b. Southern Tiwa (Allen et al. 1990: 354, 156f)<sup>3</sup>  
*Bow-kahun-mu-ban.*  
 2SG:1SGC-box-see-PAST  
 'You saw my boxes.'

that the possessor is a direct object is shown in (1a) by the first person clitic pronoun and in (1b) by the fact that the possessor is in straight case, the case used for subjects and direct objects, and the fact that it does not determine agreement on the head noun. In contrast, the possessor in (2a) appears in the dative case, the case used for indirect objects, and the possessor in (2b) determines indirect object agreement (the LSG portion of the agreement prefix) in the verb complex. I refer the reader to the works cited for additional evidence for the status of the possessor.

In RG the EPC data in (1) are analyzed as possessor ascension constructions: the possessor ascends to take on the grammatical relation (GR) of the host, conforming to the Relational Succession Law (RSL):

- (3) Relational Succession Law (Perlmutter and Postal 1983a):  
 An ascendeé assumes within the clause into which it ascends the grammatical relation of its host NP.

The RSL predicts that, in EP constructions with an object host, the possessor is an object, as we see in the data in (1).<sup>4</sup> The data in (2), where the possessor appears to be an indirect object, although the host is a direct object, are problematic for the RSL. Two suggestions have been made concerning such data. First, it has been claimed that some possessors ascend to direct object, while other possessors ascend to indirect object, and thus that the RSL should be abandoned; far as possessor ascension is concerned (Bickford 1986). Second, a possessor ascension analysis has been proposed for cases involving the possessor as an indirect object (Harris 1976; Rosen 1987). Under the union analysis, the possessive trace functions like an embedded clause. The possessor and the head are both signed grammatical relations in the main clause. Unions are not subject to the RSL.

Whatever RG analysis is proposed for EPCs, the fact remains that no prediction has been made concerning which type of EPC will occur in a given language.

In Section 1, I report on a study of EPCs based on a cross-linguistic survey of twenty-two languages. I show that the status of the external possessor in a language is directly related to the number of morphologically-licensed argument positions (MAPs) it has. In Section 2, I present a revised version of RG — Mapping Theory — which encodes MAPs into the final level of structure. After a brief introduction to Mapping Theory, I give an applicative analysis of EPCs. In Section 3, I bring up a second analysis of EPCs, a possessor union analysis, which parallels causative clause union. Section 4 discusses the special case of Kinyarwanda EPCs. Two types of EPCs exist in this language. Mapping Theory easily accommodates the Kinyarwanda data. I claim that EPCs involving alienable possession have an applicative structure, while EPCs involving inalienable possession have a union structure. Thus, we see that two distinct analyses for EPCs are allowed across languages and also within a single language.

I conclude with a brief comparison of Mapping Theory and Relational Grammar with respect to EPC data. MT is much simpler and more constrained than RG. Furthermore, Mapping Theory more closely fits the empirical properties of EPCs in the world's languages.

## 1. EPCs in twenty-two languages

In this section, I report on a survey of languages. Dubinsky and Rosen's (n.d.) bibliography gives information on RG research on one hundred and five languages. By making a data base of these languages according to the constructions that were claimed to exist in them by the authors of the cited studies, I ascertained that twenty-five languages have EPCs targeting object relations. Furthermore, twenty of these languages had sufficient information reported to allow them to be used in this study. In addition, data from ten recent grammars written in RG-compatible style were added to the database. Two of these, Ika (Frank 1990) and Yimas (Foley 1991) had EPCs and sufficient information about other rules to allow them to be included in the present study. Overall, thirty-five languages with ECPs were surveyed and twenty-two of these had sufficient information to allow them to be included in this study. The languages represent many different language families and many different areas of the world.

For each language, I studied its relational profile (Gerdts 1992b), that is, information regarding the GR-changing rules attested in the language and also the morphological trapings used to express term relations. Table 1 summarizes

information about each language with respect to agreement, case, and GR-changing rules. Following the authors' analyses of each language, I indicate for each GR-changing rule given across the top of the table whether the nominal's final status is a direct object (2), an indirect object (3), or an oblique object (4), as indicated in the row for each language.<sup>5</sup> GR-changing rules include demotions of a subject (1) to 2 or 3, advancements of a 3 to 2 or of a benefactive to 2, 3, or causative clause union where the causee is revalued as a 2, 3, or 4, and possessor ascension to 2 or 3. For example, we see in Blackfoot that subjects ascend to 2 (in an inverse construction), 3S and benefactives advance to 2, 3, and possessors ascend to 3, initial 3S in ditransitives remain 3S, causees in clause union causatives appear as 2S, and possessors ascend to 2. In Indonesian, we see that subjects demote to 3, initial 3S in ditransitives remain 3S, benefactives advance to 3, causees appear as 3S, and possessors ascend to 3.

On the basis of this information, it is easy to see the correlation between a language's relational profile and the type of EPC that it exhibits. The A languages are direct-object-centered languages. In these twelve languages, the external possessor has surface direct object properties. The B languages are indirect-object-centered languages. In these nine languages, the external possessor has surface indirect object properties. One language, Kinyarwanda, exhibits a mixed set of properties and thus warrants special discussion (see Section 4).

What property differentiates these two types of languages? The answer is simple: the A and B languages differ in how many nominals they allow as direct arguments. As often noted (see especially Gerdts 1990 and Everett 1988), direct arguments get core morphosyntactic marking: that is, they determine agreement in pronoun incorporation or cliticization), license surface case as opposed to inherent case, or appear in a fixed word order adjacent to the predicate.<sup>6</sup> A summary of agreement and case is given in the two columns in Table 1 immediately following the language name. Two languages, Indonesian and Kinyarwanda, make use of SVO word order in differentiating subjects from objects. Viewing Table 1, we find that the A and B languages have respectively two and three morphosyntactically-licensed argument positions (MAPs).<sup>7</sup>

We conclude on the basis of this evidence that the relational profile of a language is systematically related to its morphosyntactic argument structure. Thus, a theory that can make statements concerning the mapping of grammatical positions to morphosyntactic positions can capture a range of generalizations available to theories that do not make this connection.

Table 1: *Relational Profiles of Twenty-Two Languages*

	Agr	Case	IDem	3Adv	BenAdv	Causee	PosAsc
<b>A. Blackfoot</b>	1, 2	∅	2	2	2	2	2
Cebuano	1, 2	∅		2	2	2	2
Chamorro	1, 2	E, Ab		2	2	2	2
Halkomelem	1, 2	∅		2	2	2	2
Ika	1, 2	E		2	2	2	2
Indonesian	∅	∅		2	2	2	2
Kalkanngu	1, 2	E, Ab		2	2	2	2
Korean	∅	N, A		2	2	2	2
Okanagan	1, 2	∅		2	2	2	2
Ojibwa	1, 2	∅	2	2	2	2	2
Sierra Popoluca	1, 2	∅		2	2	2	2
Tzotzil	1, 2	∅		2	2	2	2
<b>B. Albanian</b>	1; 2, 3	N, A, D	3	= 3	3	3	3
Choctaw	1, 2, 3	N	3	= 3	3	2	3
French	1; 2, 3	D	3	= 3	3	3	3
Georgian	1, 2, 3	E, N, D	3	= 3	3	3	3
German	1	N, A, D	3	= 3, 2	3	2	3
Southern Tiwa	1, 2, 3	∅		= 3	3	3	3
Spanish	1; 2, 3	D (2a, 3)	3	= 3, 2	3	3	3
Warlpiri	1, 2, 3	E, Ab, D		= 3	3	3	3
Yimas	1, 2, 3	∅		= 3	3	3	3
<b>C. Kinyarwanda</b>	1; 2, 3, 4	∅		= 3	= 4	2/3/4	3i, 2a

Agr = agreement. Under the agreement column, agreement affixes are followed by (i), clitics are followed by (j) and incorporated pronouns are followed by (k).  
 Case: N = nominative. A = accusative. D = Dative. E = ergative. Ab = absolutive.  
 IDem = 1 demotion (initial subject demotes to 2 (inverse) or 3 (inversion)).  
 3Adv = 3 Advancement (initial 3 advances to 2). If there is no advancement of 3s in the language, =3 appears in this column.  
 Ben Adv = benefactive advancement (initial benefactive advances to 2, 3, or 4).  
 Causee = causee in a causative clause union (causee is revalued as 2, 3, or 4).  
 PosAsc = possessor ascension (the possessor ascends to 2 or 3).  
 i = inanimate, a = animate.  
 1 = subject, 2 = direct object, 3 = indirect object, 4 = oblique object.

## Mapping EPCs

The remainder of this paper gives an analysis of EPCs from a Mapping Theory (MT) viewpoint. First proposed in Gerdts (1992b) (see also Gerdts 1992a), MT is designed as a bi-stratal alternative to RG. It has two levels of morphosyntactic structure: a GR tier corresponding to initial grammatical relations in RG; and a MAP tier, roughly corresponding to final grammatical relations in RG. MAPs are morphosyntactic argument positions defined by a language's trappings (case, agreement, word order). The rules for drawing association lines between the two tiers form the core of the grammar. These parallel the GR-changing rules of RG.<sup>8</sup> However, MT differs from RG in an important respect. In RG, the inventory of grammatical relations and GR-changing rules is available to all languages. In MT, languages differ in the number of MAPs they utilize, and consequently in the constructions they allow.

Following Gerdts 1990, I claim that MAPs are transparently licensed by the morphosyntactic device, the most common being agreement, (Structural)-case, and adjacency to the predicate (or a combination of these). Furthermore, Gerdts (1992b) shows that languages vary with respect to the number of MAPs they license; for example, Blackfoot, Halkomelem, and Tzotzil license two, while Abenian, Choctaw, Georgian, and Southern Tiwa license three. The number of MAPs existing in the language directly correlates with the type of associations allowed in the language. Two-MAP languages tend to have linking rules that target the second MAP. Three-MAP languages, in contrast, target a third MAP (i.e. a DAT position) for associations of these types. In RG terms, two-MAP languages are "object-centered" and commonly have 3-2, OBL-2, possessor inversion-2, causee-2, and antipassive constructions. In contrast, three-MAP languages are "indirect object-centered" and commonly have OBL-3, inversion of 2 subject-3, possessor ascension-3, and causee-3 constructions.

Mapping Theory consists of several modules and rules for relating one module to another. Four perspectives on a nominal are encoded: its thematic action, its grammatical relation (corresponding to its initial grammatical relation in RG), its MAP (corresponding to its final relation in RG), and its morphosyntactic presentation (i.e. its case, agreement, word order, etc.) For example, the causee clause in (4) is given the Mapping Theory representation in (5).

- (4) *John ga Mary ni kansyoo o atae-ta.*  
 J. NOM M. DAT medal ACC give-PAST  
 'John gave a medal to Mary.'

## MAPPING POSSESSORS

(5)

thematic relations:	agent	theme	goal
grammatical relations:	1	2	3
MAPs:	A	B	C
presentation:	NOM	ACC	DAT

There are three lexically subcategorized nominals in (5). They are assigned grammatical relations 1 (subject), 2 (direct object), and 3 (indirect object), respectively, following the usual assumptions about the mapping of thematic relations to initial grammatical relations.<sup>9</sup> Each GR is linked to a MAP. MAPs are ordered positions (represented here as A, B, C) linked to morphological presentational statements (for example: NOM case licenses A, ACC case licenses B, and DAT case licenses C). Presentational details are usually omitted in this paper but would be relevant in spelling out the grammar of a specific language. In any given clause, the number of MAPs assigned depends on three things: first, the lexical semantic valence of the verb, second, MAP-reducing or -building morphology, and third, the MAP thresholds set for the language (that is, the maximum and minimum number of MAPs allowed). Japanese is a three-MAP language — it allows a maximum of three direct arguments. Hence A, B, and C are available for linking in (5).

The universal principles for linking GRs to MAPs are given in (6).<sup>10</sup>

- (6) Principles for Linking GRs and MAPs:  
 Saturation Principle: Every MAP must be linked to a GR or cancelled.  
 Bimiqueness Principle: Every MAP is linked to a single GR (except in multiaffixation under coreference), and every GR is linked to at most one MAP.  
 No Delinking Principle: There are no delinkings.  
 No Crossing Lines: Association lines cannot cross.

## 2.1 Mapping applicatives

Two types of associations are recognized in the theory. Unmarked associations proceed in a vertical, non-crossing, left-to-right fashion. For example, (5) above shows unmarked association in a three-MAP case. Marked associations, on the other hand, may involve non-vertical linkings, the linking of an extra nominal not lexically subcategorized by the verb, the non-linking of a nominal, or linkings in a right-to-left direction. Marked associations take precedence over unmarked left-to-right linkings. Marked associations are generally subject to morphological

ditions. A statement of these conditions and their concurrent effect on argument structure is the biggest task of a Mapping Theory grammar. Some effects of marked associations will be specified in universal grammar, but other effects will be subject to parameter setting (see Gerdts 1995).

Some examples of marked association rules are given in (7); these rules are discussed in Gerdts (1992a, 1992b):

- (7) a. Applicative: Add a MAP (up to threshold) and link the 3/oblique to the lowest possible MAP.  
 b. Antipassive/antidative: Cancel the lowest MAP and do not link the GR above it.  
 c. Reflexive: Link both the 1 and the GR above the lowest MAP to the same MAP (and, in some languages, cancel the lowest MAP).  
 d. Passive: Do not link the first GR; cancel one or more MAPs.

Furthermore, a quick perusal of these rules reveals that the lowest MAP is the total position in marked associations (other than passive): it is frequently linked cancelled. This tendency is captured in the following universal principle.

- (8) The Last MAP Principle: Marked associations (other than passive) target the last MAP.

relevant to this paper is (7a), the applicative rule. An applicative in any language adds a MAP if possible, then links the 3/oblique to the lowest MAP. In the Halkomelem examples in (9) and (10); (9) shows a goal applicative and (10) shows a benefactive applicative.

- (9) *niʔ ʔa-m-as-θáihš-as ʔa kʰθa pukʰ.*  
 AUX give-ADV-TRANS+1OBL-3ERG OBL DET book  
 'He gave me the book.'  
 (Gerdts 1988: 94, 18)
- (10) *niʔ θáy-ak-θáihš-as ʔa kʰθa na-snáxʰ ak.*  
 AUX fix-ADV-TRANS+1OBL-3ERG OBL DET 1POSS-canoe  
 'He fixed my canoe for me.'  
 (95, 20)

ce (9) and (10) are lexically transitive and Halkomelem is a two-MAP language, MAPs A and B are available for linking. The applicative cannot add a MAP, since the threshold is two in Halkomelem. Nonetheless, the 3 or oblique linked to the lowest MAP, i.e. B, as (11) shows.

- (11)  $\theta$ -Rs: agent theme goal/ben  
 GRs: 1 2 3/OBL  
 MAPs: A B

The 1 links by unmarked association. The 2 is unlinked and therefore gets licensed as a non-argument by peripheral means, such as the preposition in (9) and (10) or by case spread.<sup>11</sup>

Applicatives in three-MAP languages support this approach. Georgian (Harris 1981) has pairs like (12a) and (12b).

- (12) a. *gelam šekera axali šarvili merabisarvis.*  
 Gela:ERG he:sewed:it:II:VCL new trousers:NOM Merab:for  
 'Gela made new trousers for Merab.'  
 (153, 2a)
- b. *gelam šekera axali šarvili merab.*  
 Gela:ERG he:sewed:him:it:II:VCL new trousers:NOM Merab:DAT  
 'Gela made new trousers for Merab.'  
 (153, 2b)

The representation for (12b), a benefactive applicative, is given in (13).

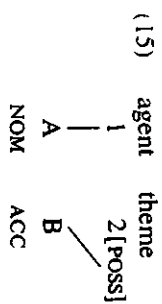
- (13)  $\theta$ -Rs: agent theme ben  
 GRs: 1 2 1 OBL  
 MAPs: A B C

Georgian is a three-MAP language, so MAP C is added (represented in boldface) and the benefactive links to it. The 1 and 2 link by unmarked association.

## 2.2 Possessor applicatives

Possessor ascension effects can also be given an MT analysis. For example, in the Korean sentence in (14), the theme nominal is modified by a possessor, as represented by the [POSS] following the 2 in (15).<sup>12</sup>

- (14) *Yangswu-ka Swuni-lul elkwul-ul kuli-ess-ta.*  
 Y-NOM S-ACC face-ACC draw-PAST-RND  
 'Yangsu drew Sooni's face.'  
 (Gerdts 1993: 305, 15)

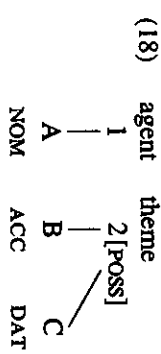


can account for the fact that the possessor takes on the properties associated with the B MAP by adding possessors to the applicative rule in (7a):

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

two-MAP languages such as Korean, the possessor in a possessor applicative language on a transitive clause will link to the B MAP. In contrast, in three-MAP languages, a C MAP is added by the applicative rule and the possessor links to that. For example, see the Choctaw data in (17), as represented in (18).

(17) *Ofi-yat katos á-kopoli-tok*  
 dog-NOM cat 1DAT-bite-PAST  
 'The dog bit my cat.'  
 (Davies 1986: 10, 18b)



we see that, under an applicative analysis of EPCs, the external possessor links to either link to the B MAP or the C MAP, depending upon the MAP threshold in the language.

**EPCs as possessor union**

The previous section gave an applicative analysis of EPCs. Through an applicative rule, the possessor is added as an argument on the GR tier and linked to a MAP. This parallels possessor ascension in RG. A second analysis of EPCs has been proposed within RG — the possessor union analysis (Harris 1976; Rosen 1977; see also Davies 1997; Gerdts 1992c).<sup>13</sup> Under this analysis, EPCs are a type of union, paralleling causative clause union. The possessor and head are linked as occupying an embedded or "downstairs" clause. The possessor revalues

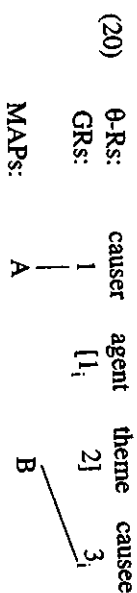
as a 3, while the theme inherits the 2 relation in the union stratum, that is, the level of structure where the two clauses combine. This analysis will accommodate EPCs in three-MAP languages. Also, this rule, together with the rule of 3-to-2 advancement, will accommodate EPCs in two-MAP languages.

In this section, I show that it is equally possible to posit a union analysis of EPCs in Mapping Theory. First, I present the MT analysis of causatives. Then I show how this can easily be adapted to EPCs. I conclude that the union analysis of EPCs may be appropriate for some languages, especially those languages in which the EPC has an affectee reading. Thus, both types of analyses for EPCs, applicatives and unions, may be necessary cross-linguistically. Moreover, this opens the possibility for both types of EPCs existing within a single language. I make use of this possibility in the analysis for Kinyarwanda in the following section.

The Mapping Theory analysis of causatives has the following basic features.<sup>14</sup> First, the nominal arguments of the base (in RG terms, the "downstairs" clause) appear in brackets in the position of the theme/2 of the causative. Second, the causee is an outer (in RG terms, an "upstairs") 3 that is co-indexed with the 1 of the base.<sup>15</sup> Third, the MAPs in a causative union will be the number of MAPs of the base plus one per causative, up to the language's threshold. Finally, linking of GRs to MAPs in causatives proceeds in many languages in a right-to-left fashion, though elements of the base that are co-indexed with outer NPs will be skipped over.<sup>16</sup> We can briefly illustrate the effect of the causative rule in two-MAP versus three-MAP languages with the following data. In Swahili, a two-MAP language, a causative based on a transitive such as (19) will not involve the addition of any MAPs.

(19) *Baba a-i-m-fung-ish-a* *mtoto mlango.*  
 father he-TEMP-him-close-CAUS-RND child door  
 'The father made the child close the door.'  
 (Driever 1976: 43)

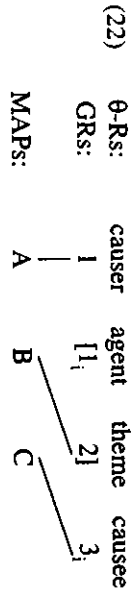
Thus, as seen in the analysis given in (20), the causee but not the theme will be mapped, given the stipulation that linking in causatives proceeds in a right-to-left fashion.<sup>17</sup>



However, in the causative of a transitive in a three-MAP language such as Turkish, a MAP will be added, and thus both the theme and the causee can be mapped.

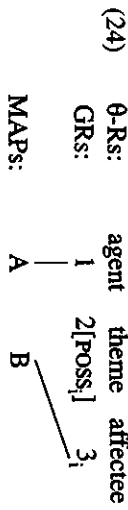


(21) *Digri mekub-u midir-e inzala-t-i.* (Comrie 1985: 323, 80)  
dentist letter-ACC director-DAT sign-CAUS-PAST  
'The dentist made the director sign the letter.'



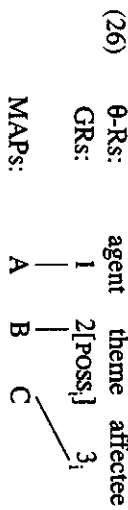
similar analysis can be given for EPCs. Paralleling the causee in causatives, there is an "affectee", that is, a non-subcategorized nominal that is affected by the action. The affectee, which is an outer 3, is co-indexed with the possessor.<sup>18</sup> In a two-MAP language such as Tzotzil (Aissen 1987: 126), the affectee links to the B MAP, as indicated by the first person absolutive agreement (B1) on the verb; note that in Tzotzil the possessor also determines NP-internal agreement, the first person ergative agreement (A1) on the theme *jol* 'head'.

(23) *Ch-i-s-toyilan-be j-jol.* (Aissen 1987: 126, 1)  
INCMP-L-B1-A3-keep.lifting-IO A1-head  
'He kept lifting my head.'



In a three-MAP language, such as Georgian, this analysis would entail the addition of a C MAP to which the affectee would link. Thus, data as in (25) could be represented as in (26).

(25) *vban xels bavšvs.* (Harris 1976: 170, 25b)  
I.wash.thim.it:V:CL hand:DAT child:DAT  
'I am washing the child's hands.'



adopting the affectee analysis accounts for some interesting features of the EPCs found in many languages. First, EPCs in some languages are limited to

inalienable possession or verbs of deprivation. There is clearly an element of affectedness in these cases. Also, examples with an external possessor, even when they involve alienable possession, often have a slightly different meaning than the equivalent sentence with only a genitive-marked possessor. For example, Gibson (1992) indicates this extra element of meaning by adding the benefactive to the English gloss for the example in (1a). Second, as Farrell (1994) points out, initializing the affectee as a 3 presumably pre-empts other NPs that would be 3s, given that the Stratal Uniqueness Law (Perlmutter and Postal 1983b) prohibits more than one occurrence of the same GR per level of structure. This explains the fact pointed out by Gibson (1992) that it is not possible to have an EPC in Chamorro if there is a goal NP in the clause. Aissen (1987) points out the same restriction in Tzotzil. In (27), there is a goal but no external possessor, hence the lack of first person absolutive agreement (B1) in the verb complex.

(27) *7a li Petul-e 7i-y-ak-be j-chij li Xun-e.* (140, 43)  
TOP the Petul-CL CMP-L-A3-give-IO A1-sheep the Xun-CL  
'Petul gave my sheep to Xun.'

The ungrammatical (28) contains both a goal *Xun*, which like other third person absolutives would determine  $\theta$ -agreement, and a first person affectee, which determines first person absolutive agreement (B1) in the verb complex.<sup>19</sup>

(28) *\*7a li Petul-e, li-y-ak-be j-chij li Xun-e.*  
TOP the Petul-CL CMP-L-B1-A3-give-IO A1-sheep the Xun-CL  
'Petul gave my sheep to Xun.'

If we assume that a principle like the Stratal Uniqueness Law operates on the GR-tier in MT, then the ungrammaticality of data like (28) follows from the co-occurrence of the two 3s on the GR-tier.<sup>20</sup>

The possibility of an affectee analysis for both two-MAP and three-MAP languages suggests that all EPCs might be given this analysis. However, it seems precipitous to abandon the possessive applicative analysis for all languages. For example, Choctaw EPCs contrast with the data given above in that it is possible for a goal to co-occur with an external possessor in that language. Davies (1986: 54, 32) gives examples like the following:

(29) *Hattak-at ohayo iskali am-in-a-tok*  
man-NOM woman money IDAT-3DAT-give-PAST  
'The man gave my money to the woman.'

Davies' analysis of this example would be translated into MT as follows, since he argues that the possessor, but not the goal, is a final term:

- (30)  $\theta$ -Rs: agent theme goal  
 GRs: 1 2[POSS] 3  
 MAPs: A B C

Furthermore, Davies (1986: 55f) gives an explicit argument, based on reciprocals, that the possessor in Chocrow does not bear a core grammatical relation in the GR-tier.

Thus, we conclude that more than one type of analysis will probably be necessary in order to accommodate EPCs cross-linguistically. Further research is necessary to establish what the essential differences are between these two structures. From the MT viewpoint, either structure is available in both two-MAP and three-MAP languages. So the presence of an external possessor with dative trappings is insufficient justification for positing the affectee analysis in a language. This issue is discussed further in the next section.

#### 1. The Kinyarwanda challenge

Kinyarwanda, according to the data and analyses of Kimenyi (1980), poses an interesting challenge for the view of EPCs given above. Unlike other languages in the sample, Kinyarwanda has two different EPCs. First, Kimenyi shows two ways of expressing inalienable (or part-whole) possession. Example (31a) shows an alienable possession internal to the NP, and (31b) is the corresponding EPC.

- (31) a. *Umugóre y-a-shokoj-e umusatsi w'umugabo.* (103, 26a)  
 woman she-PAST-comb-ASP hair of man  
 'The woman combed the hair of the man.'  
 b. *Umugóre y-a-shokoj-e umugabo umusatsi.* (103, 26b)  
 woman she-PAST-comb-ASP man hair  
 'The woman combed the man's hair.'

In (31b) both the possessor and the head have object properties. This sentence can be given the following analysis:

- (32)  $\theta$ -Rs: agent theme affectee  
 GRs: 1 2[POSS] 3  
 MAPs: A B C

In contrast, EPCs with alienable possessors, as in (33b), show different properties.

- (33) a. *Umuhungu a-ra-som-a igitabo cy'umukobwa.*  
 boy he-PRES-read-ASP book of girl  
 'The boy is reading the book of the girl.' (98, 5a)  
 b. *Umuhungu a-ra-som-er-a umukobwa igitabo.*  
 boy he-PRES-read-APPL-ASP girl book  
 'The boy is reading the girl's book.' (98, 5b)

Only the possessor and not the head exhibits object properties, a fact that suggests that EPCs with alienable possessors behave like possessive applicatives in two-MAP languages, represented as follows:<sup>21</sup>

- (34) agent theme  
 1 2[POSS]  
 A B  
 NOM ACC

Evidence for these two analyses comes from data involving a goal. As predicted, EPCs with inalienable possessors are not grammatical if a goal appears, since the 3 GR is pre-empted by the affectee:<sup>22</sup>

- (35) \**Umugóre a-r-érek-a umuhungu umukobwa amagara.*  
 woman she-PRES-show-ASP boy girl legs  
 'The woman is showing the girl's legs to the boy.' (100, 13b)

In contrast, a goal is possible in an EPC with an alienable possessor:

- (36) *Umugóre a-r-érek-er-a umukobwa ibitabo abana.*  
 woman she-PRES-show-APPL-ASP girl books children  
 'The woman is showing the girl's books to the children.' (101, 15b)

- (37)  $\theta$ -Rs: agent theme goal  
 GRs: 1 2[POSS] 3  
 MAPs: A B C

Since the 3 is not otherwise required to initialize an affectee, a goal bearing the 3 GR is possible.

The problem for the Mapping Theory analysis lies in the fact that Kinyarwanda acts like a three-MAP language with respect to inalienable EPCs, but like a two-MAP language with respect to alienable EPCs. In fact, some constructions

n Kinyarwanda can have as many as three NPs having object properties, for instance in clauses with initial 2, 3, and benefactive; or with 2, 3, and applied instrument. These constructions show that Kinyarwanda has a four-MAP threshold.<sup>23</sup> So the alienable EPC, which targets the B MAP rather than introducing a C MAP, is unexpectedly limited.

In this respect, alienable EPCs are like locative applicatives in Kinyarwanda, which also target the B MAP. For example, an applicative like (38) would be given the following representation, since only the locative — not the 2 or 3 — tests to have object properties.<sup>24</sup>

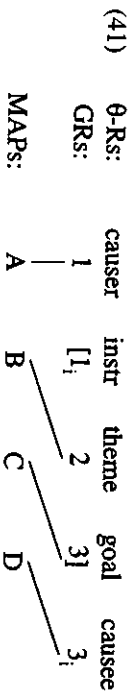
- (38) *Umugóre a-rá-hé-er-á-mo ishuhuri umuhungu ibitabo.*  
 woman she-PRES-give-APPL-ASP-in school boy books  
 'The woman is giving the books to the boy in the school.'



locative applicatives contrast with instrumental applicatives such as (40), in which the instrument, the 2, and the 3 all test to have object properties.

- (40) *Umugabo y-eerek-eesh-eje ábákana amashusho imashini.*  
 man he-show-INSTR-ASP children pictures machine  
 'The man showed pictures to the children with the machine.'  
 (80, 5b)

Gerds and Whaley (1991a,b, 1993a) argue for a union analysis for instrumental applicatives. They treat the instrument as an inanimate causer in the outer clause. This analysis is translated into MT as follows:<sup>25</sup>



sum, the generalization is that constructions involving union, that is, inalienable EPCs and instrumental applicatives, allow for the addition of MAPs up to the threshold. In contrast, true applicative structures, that is, alienable EPCs and locative applicatives, do not add MAPs to the structure, but target the B MAP. Early, some further exploration of applicative rule statements and the Last

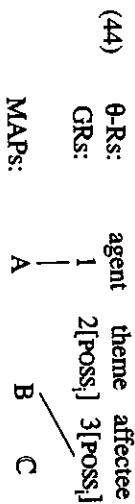
MAP Principle are necessary in order to give a full treatment of Kinyarwanda. In the interim, the following rule for alienable EPCs in Kinyarwanda fits the facts of the data:

- (42) Kinyarwanda alienable EP construction:  
 (i) Add an alienable possessor to the GR tier and suffix the applicative morpheme *-ir* to the predicate.  
 (ii) Link the alienable possessor to the B MAP and cancel the C MAP, if necessary.

It will be necessary to cancel the C MAP if there is no suitable nominal to the right of the alienable possessor to link to the C MAP. This is a requirement of the Saturation Principle. This will be the case, for instance, in a double EPC. Kimenyi points out that it is possible to have both an alienable and an inalienable EP in the same clause, as in (43).

- (43) *Umugabo y-a-vun-i-ye umugóre umwákana ukuguru.*  
 man he-PAST-break-APPL-ASP woman child leg  
 'The man broke the woman's child's leg.'  
 (99, 9c)

In this case, only the alienable possessor has object properties. Both the head and the inalienable possessor lack object properties. This suggests the following analysis.



The C MAP here, introduced by the inalienable possessor applicative, is not linked to a GR and thus is cancelled (indicated by outlining).

MT can also easily accommodate examples that are claimed to have union followed by possessor ascension. For example, Kimenyi (1980) notes that a Kinyarwanda instrument in an instrumental applicative (signalled by the suffix *-ish*) can host a possessor ascension (signalled by the suffix *-ir*).

- (45) *Umuhungu y-a-andi-ish-ir-ije umukoóbwa*  
 boy he-PAST-write-INSTR-APPL-ASP girl  
*ábarúwa ákárámu.*  
 letter pen  
 'The boy wrote the letter with the girl's pen.'  
 (110, 12d)

In MT terms, the instrumental applicative is treated as a union (see (41) above),

as represented in the GR-tier in (46).

(46)	θ-Rs:	causer	instr	theme	causée
	GRs:	1	[1, 2]	3[[Poss] <sub>i</sub> ]	
	MAPs:	A	B	C	

We see in (46) that the alienable possessor (*umukodhwa* 'girl') links to the B MAP and the C MAP is cancelled, per the rule in (42). This analysis is supported by data presented by Kimenyi showing that only the possessor, and not the theme or the instrument, has object properties.

The stipulative nature of (42) is not totally satisfying, especially given the goal of Mapping Theory to have as much as possible follow from universal principles rather than language-specific statements.<sup>27</sup> Nevertheless, the Kinyarwanda data provide proof that all instances of EPCs cannot be reduced to a single rule. There must be at least two different analyses for EPCs within Kinyarwanda, and presumably these will be available across languages.

### Conclusion

In this paper, I have investigated External Possession Constructions in Mapping Theory as compared with Relational Grammar.<sup>28</sup> I considered the status of the external possessor in various languages and whether or not this can be predicted based on other aspects of the language. The Mapping Theory analysis of EPCs posits two types of structures: an applicative structure that links the possessor to MAP, and a union structure that links an affectee coreferent to the possessor to the MAP. For each of these analyses, the rule proceeds differently in different languages, depending on the language's MAP threshold. In two-MAP languages the external possessor will link to the B MAP, while in three-MAP languages the external possessor will link to the C MAP. Under this view of EPCs, there are four possible alternative analyses, but only two are available in any given language.

The RG analysis is very similar to the MT analysis. In RG, two rules are posited, ascension and union. Ascension, claimed to follow the Relational Succession Law (3), results in 2-hood for the possessor. Under a possessor union analysis, the possessor revalues as a 3. However, additional mechanisms are added to account for the attested data. For many two-MAP languages it is aimed that revaluation to 3 in a union is obligatorily followed by 3-to-2 advancement (Aissen 1987; Gibson 1992; Marlett 1986).<sup>29</sup> So, in fact, RG posits

at least three structures for EPCs.<sup>30</sup> Furthermore, no attempt has been made in RG to predict what type of structure will exist in a particular language. Overall, we see that MT does a much better job of limiting the number of analyses necessary to accommodate EPCs cross-linguistically. Also, the MT analyses, since they are always bi-stratal, are simpler. From the point of view of an individual language, the only detail that needs to be stipulated is whether or not the EPC involves an affectee coreferent to the possessor.

Unfortunately, one language in the survey, Kinyarwanda, shows that the MT predictions are too constrained. Kinyarwanda is claimed to be a four-MAP language on the basis of data involving the co-occurrence of three object-like NPs. For example, the initial 2, 3, and benefactive simultaneously display object properties. Thus, we would expect in an EPC based on a transitive verb that the possessor would link to the C MAP. This is what occurs in the case of inalienable EPCs, which test to be affectee union structures in Kinyarwanda. However, in alienable EPCs, the possessor links to the B MAP, even if a C MAP is present in the structure. Thus, we must stipulate that Kinyarwanda EPCs require linking to the B MAP, superseding the putatively universal Last Map Principle (8). In this respect, alienable EPCs are like locative applicatives, which also target the B MAP. We see that the generalization in Kinyarwanda is that unions obey the Last Map Principle, but applicatives systematically violate them. Further research within Mapping Theory may provide further insight into this quandary. In the interim, consolation can be found in the fact that all other adequate treatments of Kinyarwanda are similarly stipulative.

I conclude on the basis of the EPC data that Mapping Theory is much simpler and more constrained than Relational Grammar. Furthermore Mapping Theory more closely fits the empirical properties of EPCs in the world's languages. Finally, the crucial element of the MT analysis is the language's MAP threshold, which directly correlates to the morphosyntactic trappings of a language. Since these facts are readily accessible to the language learner, ascertaining a language's threshold is often a simple matter. Once the MAP parameter is set, many aspects of the language's syntax, including the status of an external possessor, will follow automatically. Thus, Mapping Theory is plausible from the point of view of learnability.

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## Abbreviations

Abbreviations used in this paper: 1 first person (in glosses), 1 subject (in diagrams and text), 2 direct object (in diagrams and text), 3 third person (in glosses), 3 indirect object (in diagrams and text), 4 oblique object, A set A agreement affix (ergative), ACC accusative, ADV advancement, Agr agreement, APPL applicative, ASC possessor ascension marker, ASP aspect, AUX auxiliary, B set B agreement affix (absolutive), BEN benefactive, C agreement prefix (class C NP), CL clitic, CMPL complete aspect, CAUS causative, DAT dative, DET determiner, ERG ergative, GR grammatical relation, I verb series I, II verb series II, INCMPL incomplete aspect, IND indicative, INSTR instrument, IO indirect object, LOC locative, NOM nominative, OBJ object, OBL oblique case marker, PN proper noun unmarked case marker, POSS possessor, PRES present, PAST past, S singular, SUB subject, TEMP temporal marker, TRANS transitive, VCI verb class 1.

## Notes

- 1 I am limiting the discussion here to EPCs in which the host is a theme in a transitive clause. EPCs based on themes in unaccusative clauses are also possible in many languages. The analyses discussed here straightforwardly handle these constructions. For *Relational Grammar and Mapping Theory* treatments of this type of EPC in Korean, see Gerdts (1992a, 1993) and the references therein. Also, it has been claimed for some languages that certain oblique nominals can host Possessor Ascension. For alternative treatments of this type of EPC see Davies (1997) and Kimenyi (1980) for Kinyarwanda, and Gerdts (1993) and Maling and Kim (1992) for Korean. Finally, some languages have external possessors in topic or focus positions. In case-marking languages, this usually appears as a double nominative construction. For an RG analysis of this construction in Korean, see Yoon (1989). Treatments of topic, focus, relative clause, and cleft constructions have yet to be posited for Mapping Theory.
- 2 Due to space limitations, I do not repeat the evidence given by the authors for the analyses I refer to. The reader should consult the original sources for detailed arguments.
- 3 Throughout this paper, I am adopting Rosen's (1990) analysis of Southern Tiwa.
- 4 See Davies (1997) for a discussion of the current status of the RSL.
- 5 Analyses summarized in the table were taken from the following sources: Albanian (Hubbard 1985), Blackfoot (Franz 1978, 1981, personal communication), Cebuano (Bell 1983), Chamorro (Crain 1979; Gibson 1992), Choctaw (Davies 1986), French (Legendre 1986; Postal 1990), Georgian (Harris 1976, 1981), German (Wilkinson 1983), Hakkomelam (Gerdts 1988, 1989, 1992a), Ika (Frank 1990), Indonesian (Chung 1983; Kana 1986), Kalkatungu (Blake 1982), Kinyarwanda (Gerdts and Whaley 1991a, 1991b, 1993a, 1993b; Kimenyi 1980), Korean (Gerdts 1992a, 1993, and references therein), Ojibwa (Rhodes 1976, 1990; Perlmutter and Rhodes 1989), Okanagan (Hébert 1982), Sierra Popolca (Marlett 1986), Southern Tiwa (Allen and Franz 1983; Allen et al. 1990; Rosen 1990), Spanish (González 1988; Tuggy 1980), Tzotzil

- (Aissen 1979, 1983, 1987), Warlpiri (Nash 1986), Yimas (Foley 1991). The authors' original analyses were modified in three cases. Cebuano was reanalyzed as an ergative language following Gerdts (1987). Kinyarwanda as a language with three distinct object positions (direct object, indirect object, and oblique object) following Gerdts and Whaley (1991a, 1991b, 1993a, 1993b), and Southern Tiwa as a non-advancement language following Rosen (1990).
- 6 See Gerdts (1991) for an RG treatment of the two types of case.
- 7 Furthermore, as Gerdts (1994) argues, nominals that are linked to MAPs are generally more "accessible" than other nominals. For example, they can often be antecedents or targets of reflexives, be relativized, float quantifiers, be passivized, or, sometimes, be raised. In the two-MAP language Nubian (Abdel-Hafiz 1988), 1s and 2s antecedent reflexives and raise; in the three-MAP language Albanian (Hubbard 1985), 1s, 2s, and 3s float quantifiers; in the four-MAP language Kinyarwanda (Kimenyi 1980) 1s, 2s, 3s, and BENs relativize and passivize.
- 8 This paper can only give a brief look at MT and furthermore, does not compare it with other similar theories: Woolford (1986), which makes use of a tree notation, is perhaps the closest theory in its intention, while Yip et al. (1987), which makes use of linear order, is the closest in notation. Linking Theory (Kiparsky 1988) has greatly influenced the MT rules of marked associations.
- 9 In developing Mapping Theory, I have relied heavily on the RG treatment of lexical semantics. In RG, it is usually assumed that there is no cross-linguistically valid one-to-one mapping between thematic relations and initial grammatical relations, and therefore these levels are kept distinct. If it proves to be possible to state universally valid rules of argument structure based on thematic relations, perhaps along the lines of Farrell (1994), then the level of grammatical relations will be unnecessary in Mapping Theory.
- 10 These principles for linking GRs to MAPs are fairly typical in linking theories. See, for example, Oslder (1980), Woolford (1986), and Yip et al. (1987).
- 11 Thus, the Mapping Theory equivalent to the RG concept of chomeur is simply a non-linked argument. See Farrell (1994) for a discussion of revising RG along these lines.
- 12 Note that including the possessor in brackets in the GR tier is used only for EPCs. Normally, information within NPs is irrelevant to clause-level GRs and is thus not spelled out in MT.
- 13 See Blake (1990: 123f) for a summary of Rosen's analysis.
- 14 The MT analysis of causatives was developed in conjunction with Cliff Burgess. See Burgess (1995) for a discussion of causatives and double causatives in a variety of languages.
- 15 Analyses of causatives as control structures have been posited elsewhere, including recently Guasti (1996).
- 16 Linking in causatives in some languages is left-to-right, as discussed in Burgess (1995). For example, in Ilokano the theme rather than the causee links to the B MAP in a causative. Thus, a parameter for the direction of linking in causatives is necessary.
- 17 Of course, the causer is always linked to the A MAP in an active causative. Thus, the linking parameter will only affect other nominals in the causative.
- 18 Tuggy (1980) and Farrell (1994: 194f) make a similar claim within RG. Tuggy posits that the affectee is an initial oblique in Spanish. Farrell posits that the affectee is an initial 3 in Chamorro.
- 19 Alternatively, it could be claimed that Tzotzil lacks a means for licensing non-linked 3s, so that any structure where a 3 could not link would be prohibited. Goals in simple ditransitives are always linked to a MAP. Under this analysis, 3s would differ from 2s, which regularly appear

as non-linked nominals in applicative and antipassive constructions.

- 20 Farrell (1994) says that the affectee analysis is inappropriate for Tzotzil because Aissen (1987) makes it clear that not all external possessors, especially inanimate ones, can be interpreted to have an affectee meaning. Underlying this comment is the assumption that a language will have a single analysis for all EPCs. I claim here that it is possible for a language to have both a possessor applicative and a possessor union analysis for EPCs, depending in part on semantic factors such as affectiveness. Note, however, that in a two-MAP language such as Tzotzil, the two types of EPCs would be associated with identical surface structures. Thus, additional evidence would be necessary to distinguish the two analyses. Furthermore, Farrell's interpretation of affectiveness, which seems to require a cognitively aware entity, may be too strong a concept to characterize the outer 3 in languages such as Tzotzil. Something more like "involvement" might be more appropriate. Much more research is necessary both cross-linguistically and within individual languages to determine the range of semantic effects of both types of EPC constructions (see various papers in this volume).
- 21 RG analyses of these phenomena have been given in Kimenyi (1980), Bickford (1986), and Davies (1997). The idea that alienable external possessors are final 2s but inalienable external possessors are final 3s derives from Bickford. The idea that inalienable EPCs should be analyzed as union constructions derives from Davies.
- 22 Note that it is not possible simply to say that the reason this example is ungrammatical is that Kinyarwanda has no means to express a 3 that is not linked. Non-linked 3s appear in locative applicatives (38), as seen in the representation in (39).
- 23 This is discussed further in Gerdts (1992b). In Gerdts and Whaley (1991b, 1993a, 1993b), the case is made for adding a fourth term relation, a 4, on the basis of the Kinyarwanda evidence.
- 24 The RG analysis given in Gerdts and Whaley (1991b, 1993a, 1993b) for locative applicatives is that they involve locative-to-3-to-2 advancement. The stipulation that this is a two-step advancement has the same effect as the MT stipulation that the locative links to the B MAP. That is, neither the theme nor the goal will exhibit object properties.
- 25 Gerdts and Whaley (1993a) argue that there are three object positions having term status in Kinyarwanda: direct object (2), indirect object (3), and oblique object (4). They propose the following version of the instrumental revaluation rule:
- (i) Instrumentals are revalued to the term relation immediately below the relation of the lowest ranked nominal in the clause on the hierarchy 1) 2) 3) 4.
- This means that the instrumental will take the first available position on the hierarchy. So, for example, the instrument will be a 3 if the corresponding non-applicative is transitive and a 4 if the corresponding non-applicative is ditransitive. This outcome would be effected automatically in MT under a union analysis given the claim that Kinyarwanda is a four-MAP language, since unions, like applicatives, add MAPs up to threshold.
- 26 Note that neither the 2 (*ukuguru* 'leg') nor the inalienable possessor (*umwazana* 'child') can link to the C MAP, due to the No Crossing Lines Principle.
- 27 The MT analysis of EPCs actually fares no worse in this respect than analyses in other frameworks. For example, Baker's (1988) Government/Binding treatment of Kinyarwanda EPCs limits the discussion of the inalienable possessor construction and the interaction of the two types of EPCs to a footnote.
- 28 Another potential difference between MT and RG concerns restrictions on the host in EPCs. In MT, hosts are limited to NPs represented in the GR-tier, that is, to arguments of the predicate. RG's Host Limitation Law (Perlmutter and Postal 1983a) limited hosts to terms. However,

Davies (1997) proposes that either the notion "term" be parameterized across languages or that hosts be limited to arguments of the predicate. Assuming this concept can be given a formal definition in RG, there is no real difference between MT and RG in this regard.

- 29 Intermediate structures are often posited in the analysis of an EPC in order to satisfy the laws of RG, but without empirical support from the language in question.
- 30 Actually the count is higher if one considers other possible analyses proposed in RG, such as control-style union (Farrell 1994), union with revaluation to 2 (Crisson 1992), affectee-to-3 advancement (Tugey 1980), and possessor ascension-to-3 (Bickford 1986).

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