

# The Event Semantic Root of Inalienable Possession

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In this paper, we propose an event semantic analysis for the inalienable possession construction which takes the form of a multiple object structure. The inalienable possession interpretation has its root in the material part-whole relation between events, rather than in the direct thematic relation between the whole and the part NPs. This semantic relation is syntactically realized as a recursive VP structure with two different verbs. We argue that the higher verb is a phonologically silent verb *affect*, while the lower verb is a lexical verb. The possessee is an argument of the lexical verb. The possessor, in contrast, is an argument of the higher verb *affect*. The proposed analysis overcomes the challenges that the previous analyses face.

## 1 Introduction

Every language is equipped with means to express possession relations. The most common strategy is to use a special morphology for the possessor or the possessee. Nichols (1986) called the first type *dependent-marked*, which is familiar to us as the name of genitive case, while the latter, less popular perhaps, is labeled as *head-marked* and is found in such languages as Indonesian and Abkhaz, a language spoken in the northwestern Caucasus. Investigations into the syntax of possession have revealed, however, that not all possession relations are treated alike. In particular, what has come to be known as an inalienable possession relation is often expressed in a way different from ordinary possession relations. The category of the inalienable possession is by no means uniform across languages. In some languages, both physical parts and kinship relations belong to this category and have different syntactic manifestations from the other possession types. Other languages limit the notion of inalienable possession strictly to physical parts. Languages can also differ in terms of how this special possession relation is expressed in syntax. In Korean, for instance, inalienable possession (henceforth IAP) can be expressed by giving the same case morphology to the possessor NP and the possessee NP. The examples in (1) are instances of the multiple accusative structure.<sup>1</sup> They also exemplify permissible possessor types; a human possessor (1a), a non-human animate possessor (1b), or an inanimate possessor (1c).<sup>2</sup>

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<sup>1</sup> It is not the case that all the multiple accusative patterns are of the IAP type. For instance, Sim (2004) notes that a set relation is established between two accusative marked NPs in (i): *Cigarette* is a super set and *Marlboro* is a subset. Since the superset NP is a sentence-internal topic and the subset NP is an argument, this construction is syntactically and semantically different from the IAP.

(1) Korean

- a. Chelswu-ka Sunhee-lul son-ul cap-ass-ta.  
Chelswu-NOM Sunhee-ACC hand-ACC grab-PAST-DECL  
'Chelswu grabbed Sunhee by the hand.'
- b. Chelswu-ka robot-ul pal-ul palp-ass-ta.  
Chelswu-NOM robot-ACC foot-ACC step.on-PAST-DECL  
'Chelswu stepped on the robot's foot.'
- c. Chelswu-ka sap-ul caru-lul cap-ass-ta.  
Chelswu-NOM shovel-ACC handle-ACC grab-PAST-DECL  
'Chelswu grabbed the handle of the shovel.'

A similar kind of structure is found in other languages, such as Swahili and Sotho.

(2) Swahili

- a. ni-li-m-songoa Juma shingo.  
I-PAST-1-twist 1Juma 9neck  
'I twisted Juma's neck.' (Keach and Rochemont 1992, p. 82)
- b. ni-li-(i)-vunja meza miguu miwili.  
I-past-(9)-break 9table 4leg 4two  
'I broke two of the table's legs.' (Keach and Rochemont 1992, p. 100)

(3) Sotho

- a. Ke roba Opa letsoho.  
I break Opa arm  
'I break Opa's arm.' (Voeltz 1976, p. 256)

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- (i) Chelswu-ka **tambay-lul malboro-lul** phiwu-ess-ta.  
Chelswu-NOM cigarette-ACC Marlboro-ACC smoke-PAST-DECL  
'As for cigarettes, Chelswu smoked Marlboro.'

In this paper, however, we use the term 'zooming-in' instead of 'set-related', the term that Sim used. In general, this type of the multiple accusative construction can be used for a relation that cannot be defined in terms of sets. What all the instances of this type have in common is that the choice 'narrows down' from the first case-marked NP to the second case-marked NP. In a photographic analogy, the camera zooms in the order of the NPs. See footnote 4 and Section 6 for more discussion.

<sup>2</sup> The markers *-i* and *-ka*, *-ul* and *-lul* alternate depending on their phonological environments: *-i* and *-ul* are used after a consonant and *-ka*, and *-lul* after a vowel.

Abbreviations: NOM = nominative; ACC = accusative; GEN = genitive; TOP = topic marker; PAST = past tense; DECL = declarative marker; PASS = passive; NMZ = nominalizer; REL = relativizer; MOD = modifier marker

- b. Palesa obetla pene motsu.  
 Palesa sharpen pen tip  
 ‘Palesa sharpens the tip of the pen.’ (Voeltz 1976, p. 259)

As the sentences in (2) and (3) show, Swahili and Sotho have a juxtaposed pattern of the two objects that have the inalienable possession relation. The verb agrees with the possessor, but not with the possessee.

This phenomenon belongs to a larger family of *External Possession Structures*, in which the possessor is placed outside the NP headed by the possessee noun. In Korean, the non-constituency of the two NPs is confirmed by the fact that they can be separated by a postpositional phrase, such as *in the car*, or an adverb like *always*, as illustrated below.

- (4) Chelswu-ka Sunhee-lul cha-eyse nul son-ul cap-ass-ta.  
 Chelswu-NOM Sunhee-ACC car-at always hand-ACC grab-PAST-DECL  
 ‘Chelswu always grabbed Sunhee by the hand in the car.’

There are some robust cross-linguistic generalizations about the external possession structure. First, there are no languages that make exclusive use of the external possession structure. Second, if a language has both options such as internal and external possession structures, the external possession structure is reserved for special possession relations, such as IAP and kinship relations. The second generalization is rather puzzling for the following reason. Intuitively speaking, IAP or kinship is a closer or more ‘intimate’ relation than ordinary possession relations are. Some researchers have indeed claimed that such possession relations are directly reflected on the thematic relations between the possessors and the possessee (e.g., Stockwell et al. 1973, Abney 1987, Alexiadou 2003). Why, then, should such a close semantic relation be expressed in syntax as the external possession structure, where the possessor and the possessee are far apart from each other? Why doesn’t semantic closeness translate into syntactic closeness? The aim of this paper is to provide an answer to this puzzle. The data are drawn mainly from Korean, but whenever appropriate, we will try to incorporate relevant facts from languages other than Korean into our discussion. In the following section, we critically review possessor raising analyses of the IAP construction. While inadequacies of a simple version of possessor raising have been pointed out in the past, we argue against a more sophisticated version, in which the IAP construction has syntactic structure different from the ordinary possession structure. In Section 3, we propose an alternative analysis that makes use of a recursive VP structure. Section 4 serves as an introduction to material part-whole relations between eventualities, which will play a crucial role in our semantic analysis. Section 5 demonstrates how the proposed structure is compositionally interpreted. We also add a few extra constraints on eventuality arguments to ensure that the correct truth conditions are derived. In Section 6, we discuss how verb types make a difference in the availability of IAP structure. Possible cross-linguistic variations of semantic restrictions on IAP are also discussed. Section 7 provides a Case-marking mechanism that is consistent with the recursive VP structure. The proposed system also accounts for the case patterns found in the passive of the IAP construction. Section 8 concludes the paper.

## 2 Against the Possessor Raising Analysis

There have been many attempts to explain an IAP relation between two NPs in examples like (1) by positing that the possessor and the possessee form a constituent at some level, and that the possessor moves away from the base-generated position to some other position (e.g., Choe, Hyun-sook 1986, Cho, Seng-Eun 2000, among others). Based on the observation that there are two patterns, the ACC-ACC pattern in (1a), and the GEN-ACC pattern in (5), proponents of this analysis tried to derive (1a) from (5).

- (5) Chelswu-ka Sunhee-euy son-ul cap-ass-ta.  
 Chelswu-NOM Sunhee-GEN hand-ACC grab-PAST-DECL  
 ‘Chelswu grabbed Sunhee’s hand.’

The possessor raising analysis crucially relies on the assumption that the sentences in (1a) and (5) have the same meaning. As noted before (Blake 1990; 102), however, this assumption is incorrect. Imagine that one of Sunhee’s hands was amputated (i.e., physically detached), and Chelswu grabbed that amputated hand. The GEN-ACC pattern in (5) can describe such a situation while the ACC-ACC pattern in (1a) is uniformly judged inappropriate. Thus, the semantic difference between the two patterns indicates that it is unlikely that they are derivationally related.<sup>3</sup>

Furthermore, not all instances of the GEN-ACC pattern can feed into the ACC-ACC pattern. As

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<sup>3</sup> Yoon (2001) and Sim (2004) consider idiomatic expressions as another piece of evidence against the derivational relation between the ACC-ACC pattern and the GEN-ACC pattern. For instance, expressions such as *son-ul po-ta* ‘to see the hand; to deal with’ has an idiomatic reading with the ACC-ACC pattern, as in (ia), while the GEN-ACC pattern in (ib) does not. This contrast seems to show that there is no derivational relation between the two patterns.

- (i) a. Chelswu-ka Sunhee-lul son-ul po-ass-ta.  
 Chelswu-NOM Sunhee-ACC hand-ACC see-PAST-DECL  
**literal** ‘Chelswu saw Sunhee’s hand.’  
**idiomatic** ‘Chelswu dealt with (punished) Sunhee.’
- b. Chelswu-ka Sunhee-euy son-ul po-ass-ta.  
 Chelswu-NOM Sunhee-GEN hand-ACC see-PAST-DECL  
**literal** ‘Chelswu saw Sunhee’s hand.’  
**\*idiomatic** ‘Chelswu dealt with (punished) Sunhee.’

There are, however, cases in which an idiomatic reading is created as a result of movement (we would like to thank Joe Emonds for pointing this out). For instance, the examples in (ii) have the idiomatic interpretation only with the WH-phrases in front of the sentence.

- (ii) a. *What is X doing Y: What is this scratch doing on the table?* (Kay and Fillmore 1999)  
 b. *What’s eating X?: What’s eating you?* (Nunberg, Sag and Wasow 1994, p. 516)

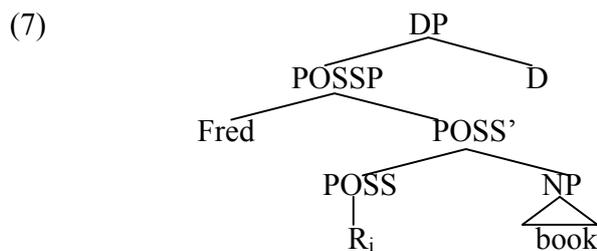
The presence of such idiomatic expressions as in (ii), therefore, weakens the validity of the test using idiomatic expressions.

(6) shows, alienable possession cannot be expressed with the ACC-ACC pattern in Korean, nor in Swahili.

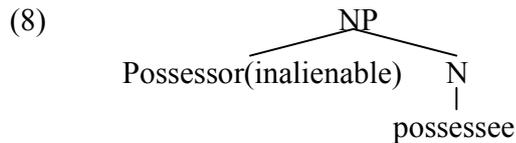
- (6) a. Korean  
 \*Chelswu-ka Sunhee-lul cha-lul cha-ass-ta.  
 Chelswu-NOM Sunhee-ACC car-ACC kick-PAST-DECL  
 ‘Chelswu kicked Sunhee’s car.’
- b. Swahili (Keach and Rochemont 1992, p. 88)  
 \*ni-li-m-vunja Juma kiti.  
 I-PAST-1-break I Juma 7chair  
 ‘I broke Juma’s chair.’

The possessor raising approach would necessitate a kind of filter that prevents alienable possession from undergoing raising. Otherwise, one must impose a semantic/thematic restriction on derived structure. Neither strategy seems to us particularly convincing or attractive.

We have argued so far that the semantic non-equivalence and the alienable-inalienable contrast are both strong arguments against a simple version of the possessor raising analysis. However, one can construct a possessor raising analysis that overcomes these problems. Such an analysis relies on the assumption that IAP involves a different thematic relation from other ordinary possession relations, and that this difference leads to different syntactic structures. One popular model of this kind of approach is summarized as follows (e.g. Higginbotham 1983). The ordinary possession relation, such as 'Fred's book', invites many possible interpretations for the relation between Fred and the book in question; the book that Fred owns, the book that Fred wrote, the book that Fred read, etc. Such freedom is semantically represented by the presence of a free variable over relations whose value is pragmatically determined. The syntactic structure encodes this free variable in a functional head  $Poss^0$  that selects the possessee NP as its complement. The possessor NP is projected in the specifier of PossP (Alexiadou, 2003).



IAP, on the other hand, involves a direct thematic relation between a possessee noun and its possessor. More specifically, a possessee noun is semantically a two-place predicates, and the possessor NP saturates one of the argument positions of the possessee noun. Translating this thematic relation into syntax, we can postulate that the possessor NP is projected as an argument of the possessee noun and occupies a position with the NP headed by the possessee noun, as suggested by Ura (1996) among others.



If one wishes to maintain a possessor raising analysis based on the syntax outlined above, then, it is necessary to establish a connection between the movement of the possessor NP to the accusative position and the position it occupies at D-structure. Putting it somewhat differently, we must prove that the movement from the argument position within the possessee NP is possible (and indeed obligatory) whereas such a movement is blocked from the specifier of PossP. It is not clear to us whether we can find a reasonable constraint that discriminates the two positions.

Independent of this uncertainty of an appropriate constraint on movement, we have other empirical reasons to believe that even this sophisticated version of possessor raising cannot be maintained. First, As Hyman (1977), and Yoon (2001) pointed out, the IAP multiple object structure is possible not only for body-parts but also for pieces of clothing, as long as they are understood to be physically attached to the possessors.

- (9) a. Haya (Hyman 1977)  
 n-ka-teemul' ómwáán' éshaati.  
 SM-P3-tear child shirt  
 'I tore the child's shirt.'
- b. Korean (Yoon 2001)  
 Cheli-ka Swuni-lul chimacalak-ul pwutcap-ass-ta.  
 Cheli-NOM Swuni-ACC dress.train-ACC catch-PAST-DECL  
 'Cheli caught the train of Swuni's dress.'

To account for (9), we must postulate that these pieces-of-clothing nouns are semantically ambiguous between one-place predicates and two-place predicates. However unlikely such a move might be, there is a more troublesome aspect to this phenomenon. The acceptability of sentences like (9) actually depends on the verbs. Consider the Korean examples in (10).

- (10) a. Chelswu-ka Sunhee-lul shikey-lul cap-ass-ta.  
 Chelswu-NOM Sunhee-ACC watch-ACC grab-PAST-DECL  
 'Chelswu grabbed Sunhee's watch.'
- b. ?Chelswu-ka Sunhee-lul shikey-lul kochi-ess-ta.  
 Chelswu-NOM Sunhee-ACC watch-ACC repair-PAST-DECL  
 'Chelswu repaired Sunhee's watch.'
- c. ??Chelswu-ka Sunhee-lul shikey-lul po-ass-ta.  
 Chelswu-NOM Sunhee-ACC watch-ACC see-PAST-DECL  
 'Chelswu saw Sunhee's watch.'

In all cases in (10), we can imagine that the watch is attached to Sunhee, but while the verb *grab* is perfectly acceptable, the use of *repair* is a little awkward, and the oddity increases with the verb

*see*. Therefore, even if we can justify the semantic ambiguity of piece-of-clothing nouns, these delicate contrasts are left unaccounted for. The examples we have just examined show that possession relations that are not intrinsically thematic can feed into the multiple accusative structure. It turns out that the opposite is true: Not all intrinsically thematic possession relations can be expressed in the multiple accusative structure. It is generally agreed that kinship terms are two-place predicates. Therefore, in 'Sunhee's son', the NP *Sunhee* saturates one of the argument slots of the two-place predicate *atul* 'son'. This means that kinship possession has the same structure as the body-part type inalienable possession. Deverbal nouns are also believed to have argument structures that correspond to their verbal counterparts. In the expression 'the WTC's destruction', therefore, the NP *the WTC* saturates one of the argument slots of the deverbal noun *destruction*. Then, the possessor raising analysis predicts that these subtypes of possession relations are also acceptable in the multiple accusative structure. However, this prediction is not borne out.<sup>4</sup>

- (11) \*Chelswu-ka Sunhee-lul atul-ul cap-ass-ta.  
 Chelswu-NOM Sunhee-ACC son-ACC grab-PAST-DECL  
 'Chelswu grabbed Sunhee's son.'
- (12) a. Cengpwu-nun WTC-euy phakwoy-lul inceng-ha-yess-ta.  
 government-NOM WTC-GEN destruction-ACC admit-do-PAST-DECL  
 'The government admitted the WTC's destruction.'
- b. \*Cengpu-nun WTC-lul phakwoy-lul inceng-ha-yess-ta.  
 government-NOM WTC-ACC destruction-ACC admit-do-PAST-DECL

Finally, the multiple accusative option is available for a verb like *attach*, as shown below.

- (13) Chelswu-ka robot-ul phal-ul tal-ass-ta.  
 Chelswu-NOM robot-ACC arm-ACC attach-PAST-DECL  
 'Chelswu attached the arm to the robot.'

It has been noted that transitive verbs have different existential presuppositions for the objects they select. In the sentence, *Fred baked this pie*, we presuppose that this pie did not exist before the completion of Fred's baking event. Unlike these 'creation' verbs, 'destruction' verbs, such as *destroy* or *erase*, impose the presupposition that the objects of these verbs exist before the events

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<sup>4</sup> The following sentence (i) with a kinship term, *brother*, is accepted by Yoon (2001), though our informants find it ungrammatical. The acceptability improves, even though it is still not perfect, with a pause between *John-ul* and *tongasyng-ul*. This indicates that we are not dealing with the same multiple accusative construction. Our current hypothesis is that these multiple accusative with kinship terms are similar to the zooming-in multiple accusative (see footnote 1 and Section 6 and 7).

- (i) Cheli-ka John-ul tongasyng-ul pwutcap-ass-ta.  
 Cheli-NOM John-ACC brother-ACC catch-PAST-DECL  
 'Cheli caught John's brother.'

take place. The verb *attach* is like a 'destruction' verb. In (13), we must presuppose that the object existed before the event of Chelswu's attaching. If the NP *robot* originated from the inside of the NP headed by *hand*, then, it must be presupposed that Robot's hand as an inalienable part of the robot existed before the attaching event. As the English translation indicates, however, the meaning of (13) is incompatible with this presupposition.

To sum up this section, we have argued that the multiple accusative pattern of IAP cannot be derivationally related to the canonical genitive-accusative pattern. The semantic non-equivalence of the two patterns provides the basis for rejecting the possessor raising analysis that assumes a uniform structure for all possessive constructions. These problems could be avoided if different structures are assumed for the inalienable and ordinary possession relations. However, such an approach has its own challenges that cannot be easily overcome.

### 3 The Recursive VP Structure

#### 3.1 Basics

We would like to propose an analysis based on a very intuitive idea that both NPs are marked accusative because both of them are 'objects'. While such an approach may seem simple, it may surprise even those who refute the possessor raising analysis. Among those who object to the possessor raising analysis, the most popular analysis is one that reanalyzes the possessee NP and the verb as one complex predicate (e.g., Yoon, James 1989, Yoon, Jeong-Me 1997, O'Grady 1998). In other words, the sentence (1a) means something like 'Chelswu hand-grabbed Sunhee.' One of the arguments in favor of such an analysis that is often found in the literature is the impossibility of relativizing the possessee NP.

- (14) [Chelswu-ka Sunhee-lul t ttali-n] son  
 Chelswu-NOM Sunhee-ACC hit-REL hand  
 'the hand with which Chelswu hit Sunhee'  
 \*'the hand where Chelswu hit Sunhee'

Since the possessed NP is not a true argument of a verb but is merely a part of a complex predicate, it cannot undergo relativization as an ordinary object NP does. We find this argument rather unsatisfactory. It is true that the instrumental interpretation is so overwhelming that it gives the impression that it is impossible to interpret the hand in (14) to be the patient's hand. However, if 'hand' is replaced by a body part that cannot easily be an instrument of hitting, the intended reading becomes available.<sup>5</sup>

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<sup>5</sup> A similar effect is achieved by adding an instrumental postpositional phrase to (14). In such a case, 'hand' is easily understood to be Sunhee's.

- (i) [Chelswu-ka Sunhee-lul maktayki-lo ttali-n] son  
 Chelswu-NOM Sunhee-ACC stick-with hit-REL hand  
 'the hand with which Chelswu hit Sunhee with a stick'

- (15) [Chelswu-ka Sunhee-lul t ttali-n] ppyam  
 Chelswu-NOM Sunhee-ACC hit-REL cheek  
 ‘The cheek where Chelswu hit Sunhee.’

The fact that the possessee NP as well as the possessor NP can be relativized is also observed in other languages like Swahili.

- (16) Swahili (Keach and Rochemont 1992, p. 84)
- a. miguu a-li-yo-m-funika mtoto  
 4legs 1-PAST-4REL-1-cover 1child  
 ‘The legs of the child which s/he covered.’
- b. mtoto a-li-yo-m-funika miguu  
 1child 1-PAST-4REL-1-cover 4legs  
 ‘The child whose legs s/he covered.’

It is also worth pointing out that a possessee NP can have a modifier, just like an ordinary argument NP (Kim, Young-Joo 1990), as shown below.

- (17) a. Chelswu-nun Sunhee-lul tachi-n son-ul cap-ass-ta.  
 Chelswu-TOP Sunhee-ACC hurt-MOD hand-ACC grab-PAST-DECL  
 ‘Chelswu grabbed Sunhee by the injured hand.’
- b. Chelswu-nun Sunhee-lul cinan pen-ey tachi-ess-n son-ul  
 Chelswu-TOP Sunhee-ACC last time-in hurt-PAST-MOD hand-acc  
 cap-ass-ta.  
 grab-PAST-DECL  
 ‘Chelswu grabbed Sunhee by the hand that was hurt the other time.’

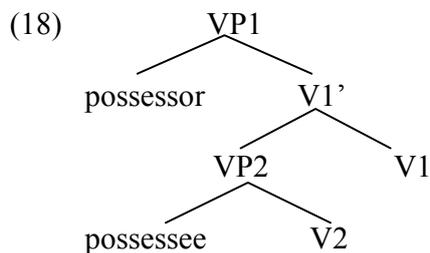
This kind of example puts a complex predicate analysis in a very disadvantageous position since it is hard to imagine treating *grabbed-the-hand-that-was-hurt-the-other-time* as one predicate. What we have seen so far suggests that possessee NPs in the IAP multiple accusative structure are by no means 'defective'. For this reason, we will not adopt the complex predicate analysis of the IAP multiple accusative construction.

When we say both accusative NPs are 'objects', we really mean that they are independent arguments. However, the two NPs are not arguments of the same verb. We propose that the IAP involves a recursive VP structure in which the possessor is the argument of the higher verb while the lower verb selects the possessee as its complement, as illustrated in (18).<sup>6</sup>

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‘the hand where Chelswu hit Sunhee with a stick’

<sup>6</sup> Cho, Dong-In (1992, 1993) proposes a structure superficially similar to us based on the Larsonian VP Shell structure (Larson 1988). In his analysis, the multiple accusative pattern in IAP is derived via verb movement and compositional theta role assignment. The higher verb position is empty and the lexical verb moves to the empty position in the course of the derivation. The



The questions that immediately arise are the following. What are the identities of the two verbs when there is only one verb visible on the surface? How does this structure end up with the meaning that it has? Let us begin with the first question. Here is one possible hypothesis.

- (19) Hypothesis 1  
*The two verbs are identical. The lower verb deletes at PF under identity.*

This hypothesis makes sense if one believes the following generalization(s).

- (20) The ACC-marked possessor NPs must bear the same relation to the verb as the ACC-marked possessee NPs do to the verb in IAP. (Choe, Hyun-sook 1986, fn.4)
- (21) Conditioning Factor in Possessor Agreement (Cho, Seng-Eun 2000, p. 14)  
 V(Possessor-Possessee) → V(Possessor)

In (1a), for instance, *Chelswu's hitting Sunhee's hand* entails *his hitting Sunhee*. In contrast, (6a) shows that there is no such entailment between *Chelswu's kicking Sunhee's car* and *Chelswu's kicking Sunhee*. Therefore, *son* 'hand' in (1a) is accusative-marked, while *cha* 'car' in (6a) is not.

The situation, however, is slightly more complicated, since there are sentences where the entailment condition is not observed.

### 3.2 Further Data and the Verb 'Affect'

In the following sentences, the possessors seem to have theta roles different from the ones that the possesseees have. The closest thematic roles for the possessors are Source in (22) and Goal in (23).

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possessee is assigned its theta role by the lexical verb, while the theta role of the possessor is assigned by the verb and the possessee (VP2 in (18)). 'Affectedness' is involved in the assignment of a theta role to the possessor (cf. Yoon 1989). His analysis, however, has difficulties in accounting for the full range of data, since IAP relations have to be imposed arbitrarily only to body-part nouns and their possessors. For instance, in (6a), Chelswu may kick Sunhee's car in his effort to kick Sunhee. In this situation, Sunhee may be affected (i.e., was upset) by Chelswu's kicking the car. Yet, (6a) is ungrammatical.

(22) Source Interpretation

- a. Korean  
Jinhwa-ka Youngmee-lul meri-lul ppop-ass-ta.  
Jinhwa-NOM Youngmee-ACC hair-ACC pull.out-PAST-DECL  
'Jinhwa pulled out Youngmee's hair.'
- b. Swahili (Keach and Rochemont 1992, p. 91)<sup>7</sup>  
mganga a-li-mw-ondoa Juma risasi.  
1doctor 1-PAST-1-remove 1Juma 9bullet  
'The doctor removed a bullet from Juma's body.'
- c. Sotho (Voeltz 1976, p. 259)  
Palesa opoma khomo lenaka.  
Palesa cut cattle horn  
'Palesa cuts the cattle's horn.'

(23) Goal Interpretation

- a. Korean  
Chelswu-ka robot-ul phal-ul tal-ass-ta.  
Chelswu-NOM robot-ACC arm-ACC attach-past-decl  
'Chelswu attached the arm to the robot.'
- b. Swahili (Keach and Rochemont 1992, p. 100)  
ni-me-(ki)-fanya kiti miguu.  
I-STAT-(7)-make 7chair 4legs  
'I made the chair's leg.'
- c. Sotho (Voeltz 1976, p. 261)<sup>8</sup>  
Palesa oroka borigoe pokotho  
Palesa sews trousers pocket  
'Palesa sews the trousers a pocket.'

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<sup>7</sup> The possessive counterpart has a garden variety of meaning that *Juma's bullet* may have like the bullet that Juma possessed, the bullet that Juma sold, the bullet that Juma made, the bullet that is inside Juma's body, etc. That is, the removed bullet was not necessarily extracted from Juma's body (Keach and Rochemont 1992, p. 91).

- (i) mganga a-li-ondoa risasi ya Juma.  
1doctor 1-PAST-remove 9bullet 9-of 1Juma  
'The doctor removed Juma's bullet.'

<sup>8</sup> Voeltz (1976, p. 261) notes that the possessive counterpart in (i) cannot "be argued" to be a "paraphrase" of (23c), since "pokotho... is not a part of borigoe until Palesa sews it".

- (i) Palesa oroka pokotho oa-borigoe  
Palesa sews pocket of-trousers  
'Palesa sews the pocket of the trousers'

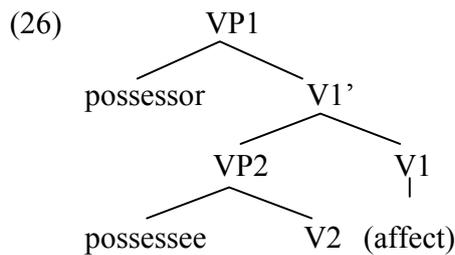
The sentences in (22) and (23) show that Hypothesis 1 cannot account for all instances of the IAP multiple accusative pattern. *Jinhwa's pulling out Youngmee's hair* does not entail *her pulling out Youngmee*, and *Chelswu's attaching the robot's arm* does not entail *his attaching the robot*.

The more accurate generalization is found in Yoon's (1989) Affectedness Condition (cf. Diffloth 1974, Voeltz 1976).

- (24) The Affectedness Condition  
The referent of the possessor is 'affected' by the action denoted by the possessee and the verb in IAP constructions.

As a result of Jinhwa's pulling out of hair, Youngmee lost her hair, and as a consequence of Chelswu's attaching of the arm, the robot has an arm. Therefore, both possessors are affected by the action described by the verb and the possessee. In light of these data, it is necessary to consider an alternative hypothesis.

- (25) Hypothesis 2  
The higher verb is a phonologically silent verb, *affect*, whereas the lower verb is a lexical verb.



We believe that the Entailment Condition should be subsumed under the Affectedness Condition. The verb *affect* has its own Theme role, to which the possessor NP corresponds thematically. The event description in the lexical meaning of *affect* is general and broad enough to be compatible with the meanings of the overt lexical verbs.

#### 4 Part-Whole Relations of Eventualities

Now that the syntactic structure of the IAP multiple accusative has been proposed, we move on to the second question: How does the structure in (26) end up with the meaning that it has? Since our syntax does not thematically link the possessor and the possessee, we need an alternative way to derive the inalienable possession interpretation. The main idea that we endorse is that inalienable possession meaning comes from a 'material' part-whole relation between eventualities in which the possessor and the possessee are contained. This section provides some basic concepts of part-whole relations between events.

The distinction between the 'material part-whole' relation and the 'individual part whole' relation is important in our proposal. The individual part-whole, or  $\subseteq$  relation, is based on a

semi-lattice structure, as proposed in Link (1983). If there is a plurality of students, for instance, that plurality has plurality parts that are students, and singularity parts each of which is a student, and nothing else. A little more formally:

- (27) For all X and P, if  $*P(X)$ , then  $*P(x)$  for all  $x \subseteq X$ ,  
 where  $*P$  is a property that can be true of pluralities and singularities.

The material part-whole, or  $\blacktriangleleft$  relation, on the other hand, is not based on the semi-lattice structure, and the principle stated above does not hold. For instance, Fred's left index finger is a material part of him, but it alone is not considered to be Fred himself.

The individual part-whole relation is also relevant to eventualities (e.g., Krifka 1989). For example, consider (28a). For this sentence to be true, there must have been two jumping-into-the-lake events, one by Fred and the other by Chris. The formal relations among these events can be characterized as in (28b). It is important to note that all the events in (28b) are jumping-into-the-lake events.

- (28) a. Fred and Chris jumped into the lake.  
 b.  $e_1 =$  Fred jumped into the lake,  
 $e_2 =$  Chris jumped into the lake,  
 $e_1 + e_2 =$  Fred and Chris jumped into the lake (" $+$ " means summation)  
 $e_1 \subseteq$  Fred and Chris jumped into the lake  
 $e_2 \subseteq$  Fred and Chris jumped into the lake

The material part-whole relation between events is relevant to a case like (29). (29b) describes what Fred did when (29a) happened.

- (29) a. Fred cooked the curry.  
 b. Fred heated a pan, put in some oil, sautéed vegetables and meat, added water, and put in spices.  
 $e_1 =$  Fred heated a pan .....  $e_5 =$  Fred put in spices  
 $e_1 \blacktriangleleft$  Fred cooked the curry .....  $e_5 \blacktriangleleft$  Fred cooked the curry

The smaller events in (29b) are "bits and pieces" that comprise the event of Fred's cooking the curry, and none of those events is an event of Fred's cooking the curry all by itself. This kind of relation is what the material part-whole relation is designed to capture.

Bach (1986) noted that the material part-whole relation between events sometimes corresponds to (or is "measured" in terms of) the material part-whole relations between entities (cf. Bach 1986).

- (30) a. Fred drew a map of Japan.  
 b. Fred drew a map of Kyushu.

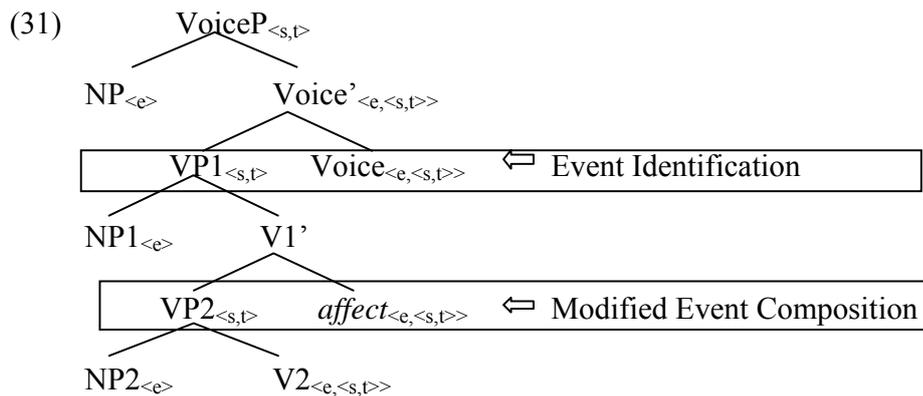
Fred's drawing a map of Kyushu is a material part of his drawing a map of Japan because Kyushu is a material part of Japan. This is the insight we would like to appeal to. In other words, inalienable possession interpretations do not come from thematic part-whole relations between

part nouns and whole NPs but are derived via part-whole relations between eventualities in which parts and wholes are included.

## 5 Semantic Interpretation

### 5.1 Event Identification and Event Composition

Following Kratzer (1996), we assume that the Agent role is not the argument of a lexical verb but is introduced by the functional head Voice. A predicate like *hit* selects a Theme argument and an event argument. The phonologically silent verb *affect* has its own Theme argument and event argument, but, as our syntactic structure suggests, it syntactically selects a VP as its complement. With the Voice head selecting the VP headed by *affect*, the structure should look like (31). This structure has two sites where Functional Application, the most common compositional rule, cannot apply. For those places, we employ Event Identification (Kratzer 1996) and a modified version of Event Composition (Brisson 1998), which we label as Modified Event Composition.



The two compositional rules are shown below.

(32) Modified Event Composition<sup>9</sup>

$$\begin{array}{ccc}
 f & g & \rightarrow & h \\
 \langle s,t \rangle & \langle e, \langle s,t \rangle \rangle & & \langle e, \langle s,t \rangle \rangle \\
 \lambda e. f(e) & \lambda x. \lambda e. g(x)(e) & & \lambda x. \lambda e. [g(x)(e) \ \& \ \exists e' [e' \triangleleft e \ \& \ f(e')]]
 \end{array}$$

<sup>9</sup> The original Event Composition (Brisson 1998, p. 156) produces a different result from Modified Event Composition such that function *g* is the material part of function *f*, as shown in (i). Event Composition', in contrast, treats function *f* as the material part of function *g*.

(i)

$$\begin{array}{ccc}
 f & g & \rightarrow & h \\
 \langle s,t \rangle & \langle e, \langle s,t \rangle \rangle & & \langle e, \langle s,t \rangle \rangle \\
 \lambda e. f(e) & \lambda x. \lambda e. g(x)(e) & & \lambda x. \lambda e. [f(e)] \ \& \ \exists e' [g(x)(e') \ \& \ e' \triangleleft e]
 \end{array}$$

(33) Event Identification (Kratzer 1996, p. 122)

$$\begin{array}{ccc} f & g & \rightarrow h \\ \langle e, \langle s, t \rangle \rangle & \langle s, t \rangle & \langle e, \langle s, t \rangle \rangle \\ & & \lambda x_e. \lambda e_s. [f(x, e) \& g(e)] \end{array}$$

Brisson (1998) proposed the rule of Event Composition to interpret the distributive subcomponents of some collective predicates. In our analysis, it is used to combine the VP2 headed by an overt V and *affect*. Within itself, this rule has existential quantification over a material part event.<sup>10</sup> After applying Modified Event Composition to the sentences in (22a) and (23a) (repeated as (34)), the *pulling-out-the-hair* event and the attaching the arm event are material parts of the affecting Theme events, as shown in (35).

- (34) a. Jinhwa-ka Youngmee-lul meri-lul ppop-ass-ta.  
 Jinhwa-NOM Youngmee-ACC hair-ACC pull.out-PAST-DECL  
 ‘Jinhwa pulled out Youngmee’s hair.’
- b. Chelswu-ka robot-ul phal-ul tal-ass-ta.  
 Chelswu-NOM robot-ACC arm-ACC attach-PAST-DECL  
 ‘Chelswu attached the arm to the robot.’

(35) The application of Modified Event Composition

- a. f:  $\lambda e. [\text{pull out } (e) \& \text{Theme } (e, \text{the hair})]$   
 g:  $\lambda y. \lambda e. [\text{affect } (e) \& \text{Theme } (e, y)]$   
 $\rightarrow h: \lambda y. \lambda e. [\text{affect } (e) \& \text{Theme } (e, y) \& \exists e' [e' \blacktriangleleft e \& \text{pull out } (e') \& \text{Theme } (e', \text{the hair})]]$
- b. f:  $\lambda e. [\text{attach } (e) \& \text{Theme } (e, \text{the arm})]$   
 g:  $\lambda y. \lambda e. [\text{affect } (e) \& \text{Theme } (e, y)]$   
 $\rightarrow h: \lambda y. \lambda e. [\text{affect } (e) \& \text{Theme } (e, y) \& \exists e' [e' \blacktriangleleft e \& \text{attach } (e') \& \text{Theme } (e', \text{the arm})]]$

Kratzer’s Event Identification is one effective way to be compositional while maintaining a neo-Davidsonian way of introducing arguments. The result of the application of Event Identification that combines VP1 and the Voice head is shown in (36), and the final translations for the sentences in (34) are given in (37).

(36) The application of Event Identification

- a.  $\lambda y. \lambda e. [\text{affect } (e) \& \text{Agent } (e, y) \& \text{Theme } (e, \text{Youngmee}) \& \exists e' [e' \blacktriangleleft e \& \text{pull out } (e') \& \text{Theme } (e', \text{the hair})]]$

<sup>10</sup> Alternatively, the rule of Modified Event Composition is encoded in the lexical meaning of *affect*. If that is the case, the denotation of *affect* would be:

- (i)  $\lambda f. \lambda x. \lambda e. [\text{affect}'(x)(e) \& \exists e' [e' \blacktriangleleft e \& f(e')]]$

- b.  $\lambda y. \lambda e. [\text{affect}(e) \ \& \ \text{Agent}(e, y) \ \& \ \text{Theme}(e, \text{the robot}) \ \& \ \exists e' [e' \blacktriangleleft e \ \& \ \text{attach}(e') \ \& \ \text{Theme}(e', \text{the arm})]]$
- (37) a. a set of eventualities  $e$  such that  $e$  is affecting Youngmee by Jinhwa and there is  $e'$  such that  $e' \blacktriangleleft e$  and  $e'$  is pulling out the hair.
- b. a set of eventualities  $e$  such that  $e$  is affecting the robot by Chelswu and there is  $e'$  such that  $e' \blacktriangleleft e$  and  $e'$  is attaching the hand.

In both cases, the possessor NPs are understood to be Themes. The impression that these possessors can have different thematic roles, such as Goal or Source, comes from semantic inference: If the *pulling-out-the-hair* event is a material part of the *affecting-Youngmee* event, for instance, it is the most natural to interpret that Yoda was the source of the hair.

Whether the IAP relation holds before (e.g., *pull out*), after (e.g., *attach*) or during (e.g., *hit*) the event may also depend on the semantic inference from the verb meaning. However, we acknowledge the possibility that the VP which is selected by *affect* has more complex syntactic structure that reflects the aktionsart of the lexical verb.

## 5.2 Fine-tuning the Analysis

Our semantics so far does not ensure that the correct interpretations are assigned. Specifically, it seems to allow a 'causative-like' interpretation in a sentence like (38), as pointed out by Vermeulen (2005).

- (38) a. \*Mary-ka John-ul Bill-euy tali-lul cha-ss-ta  
 Mary-NOM John-ACC Bill-GEN leg-ACC kick-PASS-DECL  
 Intended: 'Mary affected John by kicking Bill's leg.' (= Vermeulen 2005, (81))

- b. a set of eventualities  $e$  such that  $e$  is affecting John by Mary and there is  $e'$  such that  $e' \blacktriangleleft e$  and  $e'$  is kicking Bill's leg.

For (38) to have the intended reading in our semantic proposal, the eventuality of Mary's affecting John must (accidentally) contain Bill (and his leg) in addition to Mary and John. Thus, if we find a way to prevent such an irrelevant entity from being included, the unacceptability of (38a) can be explained. (38a) is eliminated if we assume that VP1 denotes a set of **minimal** eventualities in the sense of Kratzer (1989) or eventualities **that exemplify the proposition** in the sense of Kratzer (2002). In this kind of eventuality, no irrelevant entities are included. So, the *affecting-John-by-Mary* event contains John and Mary and nothing else. If that is the case, the event of *kicking-Bill's-leg* cannot be a material-part of the event of *affecting-John-by-Mary*. Thus, the unacceptability of (38a) is expected.

In connection to this issue, it is perhaps useful to compare our analysis to Vermeulen's (2005) analysis, in which eventuality also plays an important role. Vermeulen's proposal consists of the following steps. (i) The possessee DP has (or can have) a silent possessor pronoun. (ii) When the

possessee DP combines with the verb that selects it, it saturates the verb's internal  $\theta$ -role. (iii) At the same time, the possessor role is not discharged within the possessee DP but is re-associated with the verb meaning. As a result, the [V+Obj] complex now awaits two  $\theta$ -roles to be saturated: a possessor role and an agent role. (iv) The external possessor saturates the possessor  $\theta$ -role. The affectedness and the inalienability of the possessor in the external possession structure has its basis on the generalization that all  $\theta$ -roles of a verb are participants of the eventuality that the verb describes.

Since the possessor and the possessee are both participants of the same eventuality, our world knowledge often guides us to the interpretation that the possessee is an integral part of the possessor. It is also highly likely that the possessor was affected by the possessee's being acted upon because both are in the same eventuality. The similarity between the two proposals is obvious: Instead of deriving the notion of inalienability from a special possession relation, it is attributed to how we understand events. Nonetheless, there are a few crucial differences between the two approaches, one of which is exemplified in the contrast between (39a) and (39b).<sup>11</sup>

- (39) a. \*Chelswu-ka      caki-lul cha-lul      ttayli-ess-ta.  
           Chelswu-NOM    self-ACC car-ACC    hit-PAST-DECL  
           'Chelswu hit his (own) car.'
- b.   Chelswu-ka      caki-lul tali-lul      ttayli-ass-ta.  
           Chelswu-NOM    self-ACC leg-ACC    hit-PAST-DECL  
           'Chelswu hit his (own) leg.'

In Vermeulen's analysis, the inalienable possession reading and the meaning of 'affectedness' of the possessor are derived from the general assumption that the external possessor is a part of the eventuality associated with the verb meaning. Such a view, however, cannot distinguish (39a) from (39b). Since the external possessor, expressed by the reflexive *caki*, is understood to refer to Chelswu, the agent of hitting, both sentences in (39) are expected to be acceptable, regardless of whether the possessee is a material part of the possessor. In our proposal, however, (39a) is illegitimate because the eventuality of hitting a car cannot be a material part of affecting Chelswu by himself: The latter should include Chelswu and Chelswu only, and its material part cannot contain an alienable object like a car. (39b) is of course predicted to be acceptable under the interpretation that the leg belongs to Chelswu.

One place where Vermeulen's analysis does better than ours is a case like (40).

- (40) Chelswu-ka      Sunhee-lul      tali-lul      ttayli-ass-ta.  
       Chelswu-NOM    Sunhee-ACC    leg-ACC    hit-PAST-DECL  
       Intended Reading (NOT available): 'Chelswu hit his own leg, and that affected Sunhee.'

---

<sup>11</sup> The other differences include the treatment of nominative external possessors, which are regarded essentially as the same process as accusative external possessors by Vermeulen. Our position is that these two phenomena are not of the same kind. Indeed, it seems to us that Vermeulen's thematic operation works quite well for nominative external possessors, which do not show the affectedness or inalienability effects.

Because of the thematic re-association, the possession relation is only available between the two accusative NPs. On the other hand, our semantics so far cannot prevent this obscure reading. The leg belongs to Chelswu, the agent of kicking, so unlike the previous case (38a), there are no irrelevant entities included that can be responsible for the unacceptability. To solve this problem, we propose to impose the minimality requirement on events mentioned above at a local-level. Consider (41), the interpretation of  $VP_{AFFECT}$  (i.e., before it combines with Voice) of the sentence (40).

- (41) The denotation of  $VP_{AFFECT}$   
 $\lambda e.[affect(e) \ \& \ Theme(e, \text{Sunhee}) \ \& \ \exists e'[e' \triangleleft e \ \& \ kick(e') \ \& \ Theme(e', \text{the leg})]]$

For the possessee Theme argument (i.e., the leg) to be a part of an Agent, we must be able to 'foresee' that an Agent role will be eventually introduced beyond the level of  $VP_{AFFECT}$  since the Agent is still absent in the denotation in (41). By imposing the minimality requirement on eventualities at the point of Modified Event Composition (= the level of  $VP_{AFFECT}$ ), we can illegitimize the fortune-telling strategy: The minimal eventuality of affecting Sunhee has as its material part the minimal eventuality of kicking a/the leg. If the leg belonged to Chelswu, the agent of kicking who has not been introduced yet, the minimality requirement would fail at this level. This is why (40) does not have the meaning that the leg belongs to Chelswu.

Another potential objection to our analysis comes from the impossibility of adverb doubling. Vermuelen (2005) raises this issue by providing the following example.

- (42) \*Mary-ka      ppalli    John-ul    seoseohi    tali-lul    cha-ss-ta  
 Mary-NOM    quickly    John-ACC    slowly      leg-ACC    kick-PAST-DECL  
 Intended: 'Mary quickly annoyed John by slowly kicking his leg.'  
 (= Vermuelen 2005, (80))

If there were two VPs and two sets of eventualities, Vermuelen argues, two adverbs can modify them independently, contrary to fact. Some of the recent research on lexical decomposition has shown, however, that manner adverbs do not always detect small VP constituencies for modification. Son (2006, Chapter 2) presents ample examples from Korean causative constructions to make a convincing case for the thesis that a manner adverb minimally requires a Voice head (in her analysis, a small  $v$ ). Son's analysis gives an explanation for the ungrammaticality of (42) within our current proposal. Although there are two VPs, there is only one Voice head. Therefore, two conflicting adverbs like *quickly* and *slowly* cannot co-occur within one sentence.<sup>12</sup>

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<sup>12</sup> More problematic than adverb doubling is the behavior of the adverb *tasi* 'again'. In Son (2005, Chapter 2), it is described as the detector of smallest VP constituents. In other words, *tasi* can modify a VP that is too small for a manner adverb. Once we administer the *tasi* test to our example, the result is not what our analysis would expect.

- (i) Chelswu-ka    Sunhee-lul    **tasi**      tali-lul      cha-ass-ta.  
 Chelswu-NOM    Sunhee-ACC    **again**    leg-ACC      kick-PAST-DECL  
 'Chelswu kicked Sunhee's leg again'

### 5.3 Summary

In this section, we have provided a way to interpret the recursive VP structure compositionally. In addition to Functional Application, we employ two compositional rules; Event Identification and Modified Event Composition. In order to ensure the inalienable possession meaning abs (??) an Event Composition, however, it is necessary to impose on event arguments certain restrictions that are independently motivated.

## 6 Verb Types and Affectedness

In our current proposal, IAP relations are derived from material part-whole relations between eventualities. It is also crucial for our analysis, as well as for Yoon's (1989) analysis, that the IAP multiple accusative structure involves the notion of affectedness. However, not all verbs encode these characteristics. Some verbs, namely those which denote more or less permanent relations, may lack eventuality arguments (cf. Kratzer 1995), and there are verbs that have no clear affectedness implications. Verbs such as *alta* 'know' or *silhehata* 'hate' arguably fit this profile. So, the prediction is that they do not allow more than one NP to bear an accusative case marker. However, it turns out that they do.

- (43) Na-nun    **pemin-ul**    **elkul-ul**    a-n-ta.  
      1SG-TOP    criminal-ACC    face-ACC    know-PRES-DECL  
      'I know the criminal's face.'

Although this sentence seems to be a counter-example to our analysis, there are some reasons to believe that cases like (43) are not the same kind of multiple accusative structure that we have analyzed so far. For instance, those verbs allow kinship relations to be represented in the multiple accusative pattern, which shows a clear contrast with an instance of true IAP, as illustrated in (44).

- (44) a. \*Na-nun    Sunhee-lul    apeci-lul    cap-ass-ta.  
      1SG-TOP    Sunhee-ACC    father-ACC    grab-PAST-DECL  
      'I grabbed Sunhee's father.'

---

This sentence does not have the presupposition 'Chelswu kicked Sunhee's leg before but affected Sunhee (possibly) for the first time.' If *tasi* is attached to the smaller VP, this would be the expected presupposition. Although we do not know why this presupposition does not arise, it should be pointed out that English achievement collective verbs, which motivated Brisson's (1998) lexical decomposition analysis with Event Composition, also fail the 'again' test.

- (ii) The students gathered again.

The sentence (ii) is unambiguous, contrary to the prediction. This leads us to suspect that there is some restriction that prohibits *again* from operating on a VP that feeds into the material part-whole relation with another VP. We will leave this issue as an open question.

- b. (?)Na-nun Sunhee-lul apeci-lul a-n-ta.  
 1SG-TOP Sunhee-ACC father-ACC know-PRES-DECL  
 ‘I know Sunhee’s father.’

In addition to this semantic difference, these two types of verbs show different syntactic behaviors. One such difference is found in the so-called ‘predicate cleft’ construction (cf. Nishiyama and Cho 1998), in which a predicate is fronted with the topic marker *-(n)un* and there is a duplicated verb in its canonical position. This operation does not discriminate the two types of multiple accusative constructions.

- (45) a. Chelswu-ka Sunhee-lul ppam-ul **ttali-ki-nun** ttali-ess-ta.  
 Chelswu-NOM Sunhee-ACC cheek-ACC hit-NMZ-TOP hit-PAST-DECL  
 ‘As for hitting the face, Chelswu hit Sunhee’s.’
- b. Chelswu-ka pemin-ul elkul-ul **al-ki-nun** a-n-ta.  
 Chelswu-NOM criminal-ACC face-ACC know-NMZ-TOP know-PRES-DECL  
 ‘As for knowing the face, Chelswu knows the criminal’s.’

However, this operation is not limited to a verb alone but can in principle move an object along with the verb, and this is where the two types of the multiple accusative constructions differ. While the true IAP structure allows the possessee NP and the verb to be fronted together, this strategy is not available for the *know*-type. The contrast is shown below.

- (46) a. Chelswu-ka [**ppyam-ul ttali-ki**]-nun Sunhee-lul ttali-ess-ta.  
 Chelswu-NOM cheek-ACC hit-NMZ-TOP Sunhee-ACC hit-PAST-DECL  
 ‘As for hitting the face, Chelswu hit Sunhee’s (but not other’s).’
- b. \*Chelswu-ka [**elkul-ul al-ki**]-nun pemin-ul a-n-ta.  
 Chelswu-NOM face-ACC know-NMZ-TOP criminal-ACC know-PRES-DECL  
 ‘As for knowing the face, Chelswu knows the criminal’s.’

These differences indicate that we are not dealing with the same multiple accusative construction. Our current hypothesis is that the *know*-type multiple accusative is similar to the zooming-in type multiple accusative (see footnote 1), which Sim (2004) argues has VP-internal Topic-Comment structure. To arrive at a more conclusive answer, however, a more detailed examination is necessary.

So far we have examined non-eventive verbs that have no affectedness implications. How about those verbs that are eventive but seemingly lack the notion of affectedness in their lexical meaning? The best candidate would be an eventive experiencer verb like *see*. Interestingly, languages differ with respect to the availability of the IAP construction with such a verb. Korean,

and Haya can use the IAP structure for *see* although as far as Korean is concerned, the judgment is not uniform.<sup>13</sup>

- (47) a. Korean  
 Chelswu-ka Sunhee-lul elkul-ul po-ass-ta.  
 Chelswu-NOM Sunhee-ACC face-ACC see-PAST-DECL  
 ‘Chelswu saw Sunhee’s face.’
- b. Haya (Hyman 1996, p. 867)<sup>14</sup>  
 n-ka-bón’ ómwáán’ ómukôno  
 I-P3-see child arm  
 ‘I saw the child’s arm.’

On the other hand, there are languages that do not permit this type of verb for the IAP structure. Swahili and Sotho represent this group of languages.

- (48) a. Sotho (Voeltz 1972, p. 260)  
 \*Peter obona buka maqephe.  
 Peter see book pages  
 ‘Peter sees the book the pages.’
- b. Swahili (Keach and Rochemont 1992, p. 101)  
 \*Juma a-li-mw-ona Asha miguu.  
 1Juma 1-PAST-1-see 1Asha 4legs  
 ‘Juma saw Asha’s legs.’

It is worth pointing out that the Korean sentence in (47a) behaves like a garden variety inalienable possession structure: The kinship terms are prohibited in the possessee positions, and predicate fronting with the verb and the possessee NP is allowed. In this sense, this type of predicate contrasts sharply with non-eventive predicates like *know*.

- (49) \*Chelswu-ka Sunhee-lul apeci-lul po-ass-ta.  
 Chelswu-NOM Sunhee-ACC father-ACC see-PAST-DECL  
 ‘Chelswu saw Sunhee’s father.’
- (50) a. Chelswu-ka Sunhee-lul elkul-ul [po-ki]-nun po-ass-ta.  
 Chelswu-NOM Sunhee-ACC face-ACC see-NMZ-TOP see-PAST-DECL  
 ‘Speaking of seeing, Chelswu saw Sunhee’s face.’

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<sup>13</sup> This judgment, however, varies from speaker to speaker. It is ungrammatical for Cho, Dong-In (1992, 1993) and Ahn, Hee-Don (1991), a little bit marginal for Yoon (2001) and perfectly grammatical to Cho, Seng-Eun (2000) and our consultants.

<sup>14</sup> Hyman (1977, p. 105) notes that this sentence “implies that what I saw of the child was only his *arm*, possibly also that I wasn’t supposed to see it”.

- b. Chelswu-ka [elkul-ul po-ki]-nun Sunhee-lul po-ass-ta.  
 Chelswu-NOM face-ACC see-NMZ-TOP Sunhee-ACC see-PAST-DECL  
 ‘Speaking of seeing a face, Chelswu saw Sunhee’s (but not other’s).’

This issue has already been anticipated by Yoon (1989), the original advocate of the Affectedness Condition for the Korean IAP. In some languages, the notion of affectedness is strictly limited to cases of being physically affected while other languages interpret the concept more liberally so that it can include emotional affectedness or adversity (cf. Shibatani 1994). In a sense, such cross-linguistic variability is not entirely surprising. Verbs such as *eat* or *drink* are so basic and fundamental that every language has them. However, the matter of how much the meaning of such verbs can ‘extend’ depends on language. For instance, the Korean verb *mekta* ‘eat’ can be used for medicine while neither the English nor the Japanese counterpart has such a use. Instead, English uses *take*, while *drink* is what Japanese chooses.

- (51) a. John took the medicine.
- b. John-i yak-ul mek-ess-ta.  
 John-NOM medicine-ACC eat-PAST-DECL  
 ‘John took the medicine.’
- c. John-ga kusuri-o no-n-da.  
 John-NOM medicine-ACC drink-PAST-DECL  
 ‘John took the medicine.’

As shown above, *affect*  $V^0$ , although it is phonologically silent, is not a functional head but a lexical verb that comes with a particular meaning and its own thematic structure. The meaning range of *affect*  $V^0$  is therefore expected to show a certain degree of variability across languages.

## 7 The Source of the Identical Case Markers

The main objective of this paper is to promote an event-based account for the IAP relation with special attention to compositional interpretation of the proposed recursive VP structure. We will therefore, have to leave behind many syntactic issues frequently discussed in connection to the IAP structure, such as scrambling of the two accusative NPs and relativization. In this section, however, we wish to raise one important, and perhaps the most fundamental, syntactic issue, namely the mechanism of multiple accusative marking and its bearing accusative case morphology in passivization.

Since our structure for the IAP contains two verbs, it seems that the double occurrence of the accusative markers can be easily accounted for. Each verb assigns accusative case to its argument. This is, however, not the end of the story. The possessee NP in the IAP shows the NOM-ACC alternation in passives. In (52), the agent is suppressed, but the possessee, *son* ‘hand’, may bear either the nominative case marker (52a) or the accusative case marker (52b).

- (52) a. Sunhee-ka **son-i** cap-hi-ess-ta.  
 Sunhee-NOM hand-NOM catch-PASS-PAST-DECL  
 ‘Sunhee’s hand was caught.’
- b. Sunhee-ka **son-ul** cap-hi-ess-ta.  
 Sunhee-NOM hand-ACC catch-PASS-PAST-DECL

This case alternation is not observable in the passive of the ordinary transitive verb. As shown below, the sentence in (53b) demonstrates two distinctive properties of passives. The external argument is suppressed or demoted into an adjunct and the object, *kaykuri* ‘frog’, is nominative marked, which is accusative marked in the active counterpart (53a).

- (53) a. Jinhwa-ka kaykwuri-lul cap-ass-ta.  
 Jinhwa-NOM frog-ACC catch-past-decl  
 ‘Jinhwa caught the frog.’
- b. Kaykwuri-ka/\*-lul (Jinhwa-eykey) cap-hi-ess-ta.  
 frog-NOM/-ACC Jinhwa-by catch-PASS-PAST-DECL  
 ‘The frog was caught by Leia.’

Based on the correlation between the absence of an external argument and accusative case marking, it has been assumed that a head that introduces an agent and a head that checks the accusative case of the object are the same (Kratzer 1996, and Chomsky 1995). Kratzer calls it ‘Voice’ and Chomsky calls it ‘*v*’. This head neatly accounts for the active and passive patterns in (54). The absence of an external argument in passive indicates that Voice is specified as passive, and in turn, Voice<sub>passive</sub> lack the ability to assign accusative case, or that *v* is not merged.

The NOM-ACC alternation of the possessed NP in (52), however, remains unaccounted for. A single head approach such as Voice of Kratzer or *v* of Chomsky predicts incorrectly that the sentence with the accusative case marker in (52b) is ungrammatical. Languages like Swahili (Keach and Rochemont 1992) also show a similar pattern in which the possessor NP occupies the subject position, while the possessed NP remains in the base-generated position in the passive, as in (54).

- (54) mtoto a-li-funik-wa miguu.  
 1child 1-PAST-cover-PASS 4legs  
 ‘The child’s legs were covered.’ (Keach and Rochemont 1992, p.83)

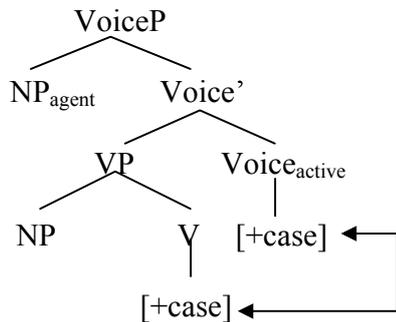
These facts indicate that a head that introduces an external argument is not responsible for accusative case checking.<sup>15</sup> Therefore, we assume that the agent is introduced by the external

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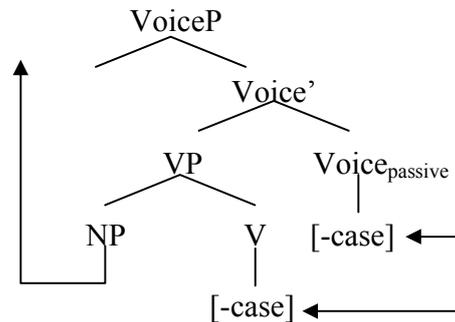
<sup>15</sup> Alternatively, it is possible that there is an accusative case checking head, distinct from the external argument introducing head, projected above the lexical verb (Baker and Stewart 2002). The accusative case checking head, then, is responsible for case checking and it triggers object shift (Holmberg 1999). Since this approach does not significantly differ from assuming that the verb assigns case other than the object shift (and possibly the telicity), we assume that the verb assigns accusative case.

argument introducing head (we will use ‘Voice’ of Kratzer), whereas the accusative case feature is checked by a verb. We propose that the correlation between the lack of an external argument and the inability of accusative case checking is due to agreement between an external argument introducing head and a lexical verb; a Voice head agrees with a verb with respect to  $[\pm\text{case}]$  within its local domain. It is natural that verbs have the  $[\pm\text{case}]$  feature. A head Voice also has the feature  $[\pm\text{case}]$ . Assume first that both a verb and a Voice head come with the feature  $[\pm\text{case}]$ . An active Voice head has a  $[\text{+case}]$  feature whereas a  $[\text{-case}]$  feature characterizes a passive Voice head. Assume further that there is a requirement that the  $[\pm\text{case}]$  feature of a Voice head must select a VP whose head has the matching  $[\pm\text{case}]$  feature. (55a) and (55b) illustrate the legitimate structures.

(55) a. Active



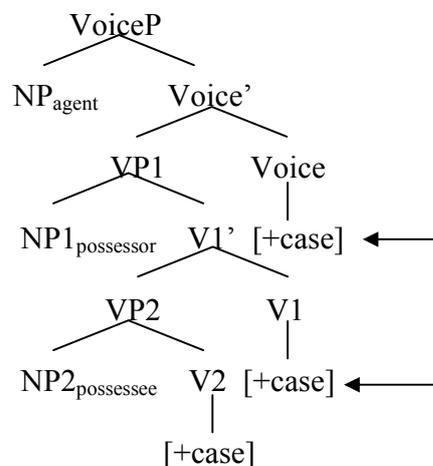
b. Passive



In (55a), the  $[\text{+case}]$  feature on Voice agrees with the  $[\text{+case}]$  feature on the verb, and the  $[\text{-case}]$  feature agrees with the  $[\text{-case}]$  feature in (55b). The difference between (55a) and (55b) is that the verb in (55a) successfully licenses accusative case for the object NP, while the verb in (55b) does not. In (55b), the object NP moves to the specifier position of TP and becomes nominative, due to the lack of case licensing in its canonical position.

Let us now turn to the multiple accusative structure. The recursive VP structure contains more than one verb, and each verb has the capability of assigning accusative case. The Voice head agrees with V1, satisfying the requirements of the Voice head. Crucially, the Voice head does not agree with V2. This implies that the agreement relation between Voice and a verb is, in essence, to satisfy the need of Voice. The well-formed structure of IAP is illustrated below.

(56)



In addition to the well-formed structure in (56), there are three more structures that are logically possible but are ruled out. (The head-complement order is ignored for the sake of simplicity.)

- (57)
- a. No Agree  

$$*[\text{VoiceP NP}_{\text{agent}} [\text{Voice}' \text{Voice}_{\text{active}} [\text{VP}_1 \text{NP}_1 [\text{V}_1' \text{V}_1 [\text{VP}_2 \text{NP}_2 \text{V}_2 ]]]]]$$

[+case]
[-case]
[-case]
  - b. Locality  

$$*[\text{VoiceP NP}_{\text{agent}} [\text{Voice}' \text{Voice}_{\text{active}} [\text{VP}_1 \text{NP}_1 [\text{V}_1' \text{V}_1 [\text{VP}_2 \text{NP}_2 \text{V}_2 ]]]]]$$

[+case]
[-case]
[+case]
  - c. Superiority  

$$*[\text{VoiceP NP}_{\text{agent}} [\text{Voice}' \text{Voice}_{\text{active}} [\text{VP}_1 \text{NP}_1 [\text{V}_1' \text{V}_1 [\text{VP}_2 \text{NP}_2 \text{V}_2 ]]]]]$$

[+case]
[+case]
[-case]

(57a) is ruled out because of the failure of agreement. (57b) is not allowed because of the violation of the locality condition:  $\alpha$  cannot agree with  $\beta$  if there is a more local element with which  $\alpha$  does not agree. V2 in (57b) has the [+case] feature that can agree with the Voice head, but the Voice head cannot agree with V2, skipping V1 which is [-case]. The structure in (57c) also crashes, but it is not because of agreement. Since Voice successfully agrees with V1, the requirement of the Voice head is satisfied, and the derivation in (57c) converges in terms of agreement. Instead, (57c) exhibits superiority effects (Chomsky 1973). Since V2, being specified with [-case], cannot satisfy the case requirement of NP2, the NP2 has to move to the next available case checking position, i.e., the nominative case checking position. Since Korean allows multiple nominatives, this is the available option, as we will see shortly in passives. In this movement, however, the NP2, which is in the most deeply embedded VP, crosses the possessor NP, violating the Superiority Condition.

We are now ready to provide an account for the NOM-ACC alternation of the possessee NP in passives. Consider the following structures with the passive Voice head.

- (58)
- a. the NOM<sub>possessor</sub>-NOM<sub>possessee</sub> pattern  

$$[\text{VoiceP} [\text{Voice}' \text{Voice}_{\text{passive}} [\text{VP}_1 \text{NP}_1 [\text{V}_1' \text{V}_1 [\text{VP}_2 \text{NP}_2 \text{V}_2 ]]]]]$$

[-case]
[-case]
[-case]
  - b. the NOM<sub>possessor</sub>-ACC<sub>possessee</sub> pattern  

$$[\text{VoiceP} [\text{Voice}' \text{Voice}_{\text{passive}} [\text{VP}_1 \text{NP}_1 [\text{V}_1' \text{V}_1 [\text{VP}_2 \text{NP}_2 \text{V}_2 ]]]]]$$

[-case]
[-case]
[+case]
  - c. \*the ACC<sub>possessor</sub>-ACC<sub>possessee</sub> pattern: **No Agree**  

$$*[\text{VoiceP} [\text{Voice}' \text{Voice}_{\text{passive}} [\text{VP}_1 \text{NP}_1 [\text{V}_1' \text{V}_1 [\text{VP}_2 \text{NP}_2 \text{V}_2 ]]]]]$$

[-case]
[+case]
[+case]
  - d. \*the NOM<sub>possessee</sub>-ACC<sub>possessor</sub> pattern: **Locality, Superiority**  

$$*[\text{VoiceP} [\text{Voice}' \text{Voice}_{\text{passive}} [\text{VP}_1 \text{NP}_1 [\text{V}_1' \text{V}_1 [\text{VP}_2 \text{NP}_2 \text{V}_2 ]]]]]$$

[-case]
[+case]
[-case]

The derivations in (58c) and (58d) are eliminated with the same reason that those active counterparts are ruled out. Voice in (58c) cannot agree with any of the verbs, because of the feature mismatch. Voice in (58d) cannot agree with V2 due to the presence of the intervening V1 with [+case]. In addition to the failure of agreement, movement of the NP2 to the subject position causes the violation of the Superiority Condition. Now consider the well-formed derivations. In (58a), Voice successfully agrees with V1. Since all verbs are specified as [-case], both NPs move to the subject position and are nominative case marked, yielding the NOM-NOM pattern. The derivation in (58b) shows that Voice agrees with V1 and that Voice does not agree with V2. This derivation survives because the need of Voice is satisfied by its agreement with the most local V head. Consequently, the NP2 remains within VP where accusative case is successfully licensed, while the NP1 moves to the subject position for case, resulting in the NOM-ACC pattern. The well-formed structures in (58a) and (58b), therefore, account for the NOM-ACC alternation of the possessee NP in passivization.

The current analysis has many desirable consequences, both Korean-internally and cross-linguistically. Sim (2004) argues that the multiple accusative pattern superficially similar to the IAP-type, exemplified in (59a), has a single verb head, and that the? zooming-in type expresses the sentence-internal Topic/Comment structure. If that is the case, there is only one verb in (59a), and it is correctly predicted that the passive counterpart (59b) only allows the NOM-NOM pattern.

- (59) a. Chelswu-ka kogi-lul phiraymi-lul cap-ass-ta.  
 Chelswu-NOM fish-ACC small.fish-ACC catch-PAST-DECL  
 ‘As for fish, Chelswu caught small ones.’
- b. Kogi-ka phiraymi-ka /\*-lul cap-hi-ess-ta.  
 fish-NOM small.fish-NOM/-ACC catch-PASSIVE-PAST-DECL  
 ‘As for fish, small ones were caught.’

Finally, the Swahili IAP also permits a multiple object structure as in (2), but its passive lacks the NOM-NOM pattern. This is due to the general lack of multiple nominative options in the language (i.e., no multiple SPEC for TP). Since only one nominative position is available, only one of the internal arguments becomes nominative. Therefore, a derivation such as (58b), in which the possessor is nominative and the possessee is accusative, is the only option, as shown in (54) (repeated as (60a)). The ungrammatical sentence in (60b) is naturally accounted for. In (60b), the possessee occupies the subject position, and the possessor remains in the base-generated position. This is the same situation as in (58d), in which the possessee moves across the possessor. Since this movement violates the Superiority condition, the derivation results in ungrammaticality.

- (60) a. mtoto a-li-funik-wa miguu.  
 1child 1-PAST-cover-PASS 4legs  
 ‘The child’s legs were covered.’ (Keach and Rochemont 1992, p.83)
- b. \*miguu i-li-funik-wa mtoto.  
 4legs 4-PAST-cover-PASS 1child  
 ‘The child’s legs were covered.’ (Keach and Rochemont 1992, p.84)

To summarize, the recursive VP structure provides the positions for a possessor and a possessee to occupy. An Agreement relation between a Voice head and a verb with respect to case accounts for the case realization. In the active, the possessor bears accusative case, since the Voice head is specified as [+case], and *affect* also has [+case]. In passive, the [-case] feature of the Voice head agrees with [-case] feature of *affect*. Consequently, the possessor must move to the subject position and become nominative. The possessee, in contrast, can be either nominative or accusative, depending on the case feature of the lexical verb. When the lexical verb has [+case], the possessee becomes accusative. When the lexical verb has [-case], the possessee moves to the subject position and becomes nominative if the language allows multiple nominatives.

## 8 Conclusion

In this paper, we proposed an event semantic analysis for the inalienable possession construction that takes the form of a multiple accusative structure. An IAP relation is represented in syntax as a recursive VP structure with two different verbs. The lower verb is a lexical verb which takes the possessee as its argument, and the higher verb is a phonologically silent verb, *affect*, which takes the possessor as its argument. The inalienable possession interpretation has its root in the material part-whole relation between events, rather than in the direct thematic relation between the whole and the part NPs. The lower event represented by a lexical verb and the possessee is a material part of the higher event with the possessee and the verb *affect*. The material part-whole relation between events is the root of the inalienability of the two object NPs. If the event of kicking a leg is a material part of the event of affecting someone, then it is natural to interpret that the leg belongs to that person.

The recursive VP structure provides a natural account for the fact that the possessee can have accusative case in the passive. The head that introduces an external argument agrees with verbs with respect to the case feature under the locality condition. The Voice head, thus, agrees with the phonologically silent verb *affect*, while the lexical verb may not agree with the Voice head. Consequently, in passive, the possessor must move to the subject position, while the possessee has an option to remain in the base-generated position and be accusative or to move to the subject position and be nominative. Therefore, in languages which allow multiple subjects, such as Korean, the possessee shows the NOM-ACC alternation. In languages which lack the multiple subject options like Swahili, the possessee must remain in-situ and bears accusative case.

Most importantly, we provided an answer to the long standing puzzle of why the external possession structure lend to express semantically more intimate possession relations. The semantic intimacy does not come from a direct thematic relation between a possessor and a possessee, but from a material part-whole relation between events. The external syntax is a reflection of such event structure.

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