

Delayed argument saturation in Korean double ACC constructions

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1 Introduction

The following paradigms in Korean all surface with overt accusative case (ACC) markers on two distinct satellite DPs¹:

Part-whole nominals

- Commonly referred to as (inalienable) external possession in the Korean literature
- Choe (1987); Cho (2000); Tomioka & Sim (2005); Ura (1996); Yoon (1990, 1991, 2015)

(1)	a.	<i>nikho-ka hanyengi-lul phal-ul ttayli-ess-eyo</i> Niko-NOM Hanyoung-ACC arm-ACC hit-PST-DECL “Niko hit Hanyoung’s arm.”	니코가 한영이를 팔을 때렸어요
	b.	<i>acwumeni-ka cak-un ai-lul son-ul cap-ass-eyo</i> older.woman-NOM small-ADN child-ACC hand-ACC grab-PST-DECL “The woman grabbed the small child’s hand.”	아주머니가 작은 아이를 손을 잡았어요

Process nominals

- Usually considered under a complex predicate or light verb lens
- Ahn (1992); Chae (1996, 2003); Grimshaw & Mester (1988); Jun (2003, 2006); J. R. Kim (1993); J. B. Kim et al. (2007); S. W. Kim (1994); Manning (1993); Pak (2001); K. B. Park (1995); C. W. Park (2013); Sells (1995); Yoon (1997)

(2)	a.	<i>yenkwuwen-i tongwul-ul thamkwul-ul ha-yss-eyo</i> researcher-NOM cave-ACC exploring-ACC do-PST-DECL “The researcher explored the cave.”	연구원이 동굴을 탐구를 했어요
	b.	<i>kyoswunim-i kwangsok-ul kyesan-ul ha-yss-eyo</i> professor-NOM light.speed-ACC calculating-ACC do-PST-DECL “The professor calculated light speed.”	교수님이 광속을 계산을 했어요

Classifier/quantifier expressions

- Literature in conversation with quantifier float, scrambling asymmetries of subjects and objects, and its interaction with case assignment
- See, e.g., Fujita (1994); Gill (2001); Kim (1990); Ko (2005)

(3)	a.	<i>sensaygnim-i haksayng-ul ney myeng-ul yatanchi-ess-eyo</i> teacher-NOM student-ACC four CL _(people) -ACC scold-PST-DECL “The teacher scolded four students.”	선생님이 학생을 네 명을 야단쳤어요
	b.	<i>tahwuni-ka sakwa-lul sey kay-lul mek-ess-eyo</i> Dahoona-NOM apple-ACC three CL _(thing) -ACC eat-PST-DECL “Dahoona ate three apples.”	다훈이가 사과를 세 개를 먹었어요

Some ditransitives (contested)

- Kim (2008, 2015) argues for a high applicative structural account of double object oncstructions (DOCs) in Korean.

¹We will see soon that the second “DP” in (1–3) does not in fact have a full nominal status. Still, I will use the term “DP” here in the introduction for convenience.

- The DOCs reported to be possible are, interestingly, only ones that fit the “Sole Complement Generalization” (SCG; Anagnostopoulou 2001; Levin & Rappaport 1986), which distinguishes a subtype of ditransitives that allow either their canonical Theme argument or their canonical Goal argument to be realized as their sole argument in both clauses and nominalizations (teach, serve, pay, etc.)².
- The judgments presented in Kim (2008, 2015) are contested by many native speakers, however. To the extent that the sentences in (4) are grammatical, they are dis-preferred to their prepositional dative alternatives.

- (4) a. %? *siktang cwuin-i sonnim-ul siksa-lul taycep-ha-yss-eyo*
restaurant owner-NOM customer-ACC meal-ACC serve-do-PST-DECL
“The restaurant owner served the customer a meal.” %? 식당 주인이 손님을 식사를 대접했어요
- b. %? *sensayngnim-i ku haksayng-tul-ul swuhak-ul kaluchi-ess-eyo*
teacher-NOM those student-PL-ACC math-ACC teach-PST-DECL
“The teacher taught the students math.” %? 선생님이 학생들을 수학을 가르쳤어요

Predicates with an overt “beneficiary” marker

- When added to the verb stem, the morpheme *cwu-* communicates that the denoted event is accomplished for someone’s benefit.
- Adding *cwu-* to a ditransitive predicate greatly improves its ability to surface with -ACC on both direct and indirect object (Yoon 1990).

- (5) a. *cwuhuy-ka nam.tongsayng-ul pyenci-lul ponay-cwu-ess-eyo* (cf. *?ponay-ss-eyo)
Joohee-NOM boy.sibling-ACC letter-ACC send-APPL-PST-DECL (cf. *?send-PST-DECL)
“Joohee sent her little brother a letter.” 주희가 남동생을 편지를 보내줬어요 (cf. *? 보냈어요)
- b. *cwunkwu-ka na-lul aisukulim-ul mantule-cwu-ess-eyo* (cf. *?mantul-ess-eyo)
Jungu-NOM 1P.SG-ACC ice.cream-ACC make-APPL-PST-DECL (cf. *?make-PST-DECL)
“Jungu made me ice cream.” 준구가 너를 아이스크림을 만들어줬어요 (cf. *? 만들었어요)

Synthetic causatives

- Korean synthetic (morphological) causatives can also occur with ACC on both the causee and the theme (Song 2015; Kim 2008, 2015)

- (6) a. *pwumonim-i ai-lul pap-ul mek-i-ess-eyo*
parent-NOM child-ACC rice-ACC eat-CAUS-PST-DECL
“The parent fed the child food.” 부모님이 아이를 밥을 먹였어요
- b. *imo-ka ywua-lul os-ul ip-hi-ess-eyo*
aunt-NOM infant-ACC clothes-ACC wear-CAUS-PST-DECL
“The auntie dressed the infant in clothes.” 이모가 유아를 옷을 입혔어요

The puzzle: Why should all and only the above paradigms in (1–6) instantiate grammatical uses of double ACC in Korean?

2 Initial generalization: two subtypes of double ACC

The first three construction types (*part-wholes*, *AS-nominals*, and *classifiers*) all unify under their ability to surface in an alternative construction: a complement-head structure (7) (diagnosed by lack of case on the first noun; see Webster under review).

- (7) a. *nikho-ka hanyengi phal-ul ttayli-ess-eyo*
Niko-NOM Hanyoung arm-ACC hit-PST-DECL
“Niko hit Hanyoung’s arm.” 니코가 한영이 팔을 때렸어요
- b. *yenkluwen-i tongwul thamkwul-ul ha-yss-eyo*
researcher-NOM cave exploring-ACC do-PST-DECL
“The researcher explored the cave.” 연구원이 동굴 탐구를 했어요
- c. *sensayngnim-i haksayng sey myeng-ul yatanchi-ess-eyo*
teacher-NOM student three CL_(people)-ACC scold-PST-DECL
“The teacher scolded three students.” 선생님이 학생 세 명을 야단쳤어요

²More specifically, the “Sole Complement Generalization” as originally stated in Levin & Rappaport (1986) is about the availability of the “adjectival passive” for both IO and DO: compare “teach” vs. “sent” in (i-ii).

(i) untaught children, untaught assignment
(ii) unsent letter, *unsent recipient

The other three construction types (*SCG ditransitives*, *beneficiary predicates*, and *synthetic causatives*) pattern differently: while a head-complement structure is possible, it results in a different interpretation from the double ACC alternatives, with an implicit indirect object. In all cases, the higher nominal is now interpreted as a modifier of the lower nominal.

SCG ditransitives, beneficiary predicates, and synthetic causatives all pattern together in their ability to alternatively mark the higher argument with *-eykey* (a post-position, sometimes analyzed as DAT case).

- (9) a. *siktang cwuin-i sonnim-eykey siksa-lul taycep-ha-yss-eyo*
 restaurant owner-NOM customer-to meal-ACC serve-do-PST-DECL
 “The restaurant owner served a meal to the customer.” 식당 주인이 손님에게 식사를 대접했어요

b. *cwuhuy-ka nam.tongsayng-eykey pyenci-lul ponay-cwu-ess-eyo*
 Joohee-NOM boy.sibling-to letter-ACC send-APPL-PST-DECL
 “Joohee sent a letter to her brother.” 주희가 남동생에게 편지를 보내줬어요

c. *pwumonim-i ai-eykey pap-ul mek-i-ess-eyo*
 parent-NOM child-to rice-ACC eat-CAUS-PST-DECL
 “The parent fed a meal to the child.” 부모님이 아이에게 밥을 먹였어요

The post-position *-eykey* is, unsurprisingly, bad for the higher argument of *part-whole*, *AS-nominal*, and *classifier* constructions:

Given these initial contrasts, it seems straightforward to sort these six types of double Acc into two overarching categories:

- Ones that independently allow the two arguments to be in a head-complement relationship, and ones that do not.
 - In the first type, the higher DP seems to be an argument of the lower one, while in the second type, both are arguments of the predicate.
 - For clarity/convenience, I will henceforth refer to the first subtype as a DAC (“Double Accusative Construction”), and the second subtype as a DOC (“Double Object Construction”).

2.1 DACs not derived from movement

In literature that has focused its attention on part-whole DACs, it is well-understood that the two ACC-marked phrases are not in a constituent with each other:

- For one, the higher argument (but not the lower argument) can be targeted for A-bar operations like topicalization (11) (Yoon 1990; Tomioka & Sim 2005; Yoon 1997).

(12) *acwumeni-ka cak-un ai-lul kil-ul kenne-l ttay nul son-ul cap-ass-eyo*
 older.woman small-ADN child-ACC street-ACC cross-ADN when always hand-ACC grab-PST-DECL
 “The woman always grabbed the small child’s hand when crossing the street.” 아주머니가 작은 아이를 길을 건널 때 늘 손을 잡았어요

These same facts are reported for classifier and AS-nominal constructions too (Yoon 1997; Ko 2005, 2007; Kim 1994): the two satellite DPs must always stand in a c-command relationship to each other, but otherwise may be separated by miscellaneous adjunct phrases, and the higher DP can be scrambled/moved to higher positions.

2.1.1 The constituent approach

Within the Korean “external possessor” literature, there are two types of analyses of part-whole DACs (1).

- a *constituent* approach, e.g. (13) (Choe 1987; Ura 1996; Cho 2000; Ko 2007)
 - a *non-constituent* approach (Kim 1989; Yoon 1990; Sim 2004)

(13)	[Agent DP]-NOM	[Possessor DP] _i -ACC	[<u>_i</u> Possessee DP]-ACC	Predicate
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- The constituent approach cuts straightforwardly between DACs and DOCs; while conceptually a nice result if the facts worked out this way, constituent approaches run into challenges both empirically and in theoretical motivation.

Empirical issue 1:

Tomioka & Sim (2005) observe that there are idiom chunks that utilize the double ACC construction whose meanings are not maintained in the alternative complement-head construction. For example, the idiom *son-ul po-ta*, meaning “(lit.) to see the hand; (idiom) to deal with”, has its idiomatic reading in the double ACC construction (14a), but not in the complement-head construction (14b):

Under a *constituent approach* to external possession constructions, where one assumes (14a) to be derived from (14b), one would need to assume that syntactic movement can create an idiomatic reading— while work on idioms often deals with movement data and whether or not an idiomatic reading survives under movement, the reverse concept is completely unattested (Tomioka & Sim 2005).

Empirical issue 2:

Modifiers on the lower argument are extremely restricted/disallowed for *part-whole*, *AS-nominal*, and *classifier* DOCs (15–17).

- (15) * *nikho-ka hanyengi-lul kangha-n phal-ul ttayli-ess-eyo*
 Niko-NOM Hanyoung-ACC strong-ADN arm-ACC hit-PST-DECL
 Intended: “Niko hit Hanyoung’s strong arm.” * 니코가 한영이를 강한 팔을 때렸어요

(16) * *mikwun-i tosi-lul chelceha-n phwukkyek-ul ha-yss-eyo*
 American.military-NOM city-ACC thorough-ADN bombardment-ACC do-PST-DECL
 Intended: “The American military did thorough bombardment of the city.” * 미군이 도시를 철저한 폭격을 했어요요

(17) * *sensayngnim-i haksayng-ul choyko-uysey myeng-ul yatanchi-ess-eyo*
 teacher-NOM student-ACC best-GEN three CL_(people)-ACC scold-PST-DECL
 Intended: “The teacher scolded the top three students.” * 선생님이 학생을 최고의 세 명을 야단쳤어요

Yoon (1990), comparing the relative grammaticality of (15) vs. (18), suggests that grammatical modification of the lower nominal in these constructions is contingent on restrictive vs. non-restrictive modification; however, this is empirically not borne out:

- For one, the modifiers in (15–17) can have restrictive interpretation, and are still judged ungrammatical.
- The restriction is not about restrictivity, but rather **about whether the modifier is overtly marked as an adnominal**.
- Modifiers that unambiguously modify a nominal are disallowed— indicating that the lower ACC-marked phrase is not a nominal.

(18)	<i>nikho-ka hanyengi-lul oyn phal-ul ttayli-ess-eyo</i> (cf. * <i>tachi-n phal-ul</i>) Niko-NOM Hanyoung-ACC left arm-ACC hit-PST-DECL (cf. *injured-ADN arm-ACC) “Niko hit Hanyoung’s left arm (cf. *injured arm).”	니코가 한영이를 왼팔을 때리었어요 (cf. *다친 팔을)
(19)	<i>mikwun-i tosi-lul hangkong phwukkyek-ul ha-yss-eyo</i> American.military-NOM city-ACC aviatory bombardment-ACC do-PST-DECL “The American military did (an) airstrike bombardment of the city.”	미군이 도시를 항공폭격을 했어요
(20)	* <i>sensayngnim-i haksayng-ul ches sey myeng-ul yatanchi-ess-eyo</i> teacher-NOM student-ACC first three CL _(people) -ACC scold-PST-DECL Intended: “The teacher scolded the first three students.”	* 선생님이 학생을 첫 세 명을 야단쳤어요

Empirical issue 3:

A *constituent* approach misses a generalization about predicate choice that connects DACs to a semantic characterization found in ditransitive literature. Yoon (1990) observes that part-whole DACs (and classifier DACs) are sensitive to predicate choice, and only work with predicates that select an “affected object” (21–22) (Larson 1988; Tomioka & Sim 2005).

(21)	* <i>nikho-ka hanyengi-lul phal-ul salang.ha-yss-eyo</i> Niko-NOM Hanyoung-ACC arm-ACC love-PST-DECL Intended: “Niko loved Hanyoung’s arm.”	* 니코가 한영이를 팔을 사랑했어요
(22)	* <i>sensayngnim-i haksayng-ul sey myeng-ul coha.ha-yss-eyo</i> teacher-NOM student-ACC three CL _(people) -ACC like-PST-DECL Intended: “The teacher liked three students/three of the students.”	* 선생님이 학생을 세 명을 좋아했어요
• Though AS-nominal DACs are almost exclusively investigated with respect to their connection to light verbs, I note that the same restriction holds for these constructions too, when tested with other, non-light, verbs (23).		
(23)	a. <i>yenkwuwen-i tongwul-ul thamkwul-ul kkuth.nay-ss-eyo</i> researcher-NOM cave-ACC exploring-ACC finish-PST-DECL “The researcher finished exploring the cave.”	연구원이 동굴을 탐구를 끝냈어요
	b. * <i>yenkwuwen-i tongwul-ul thamkwul-ul coha.ha-yss-eyo</i> researcher-NOM cave-ACC exploring-ACC like-PST-DECL Intended: “The researcher liked exploring caves.”	연구원이 동굴을 탐구를 좋아했어요

At least descriptively, this affectedness restriction links DACs to a semantic characterization found within the ditransitive literature about DOCs and “affectedness”/“affected objects” (Yoon 1990; Tomioka & Sim 2005; Larson 1988):

- Larson (1988) notes, for example, that there seems to be an extra dimension of “affectedness” that results in a favoring of the double object vs. the prepositional dative construction in English, e.g. (24–26).

(24)	a. Mary gave John a cold. b. */# Mary gave a cold to John.	
(25)	a. Mary gave John a broken arm. b. */# Mary gave a broken arm to John.	
(26)	a. Mary gave John a kiss. b. */# Mary gave a kiss to John.	(Larson 1988: p. 376)

Theoretical implementation issues:

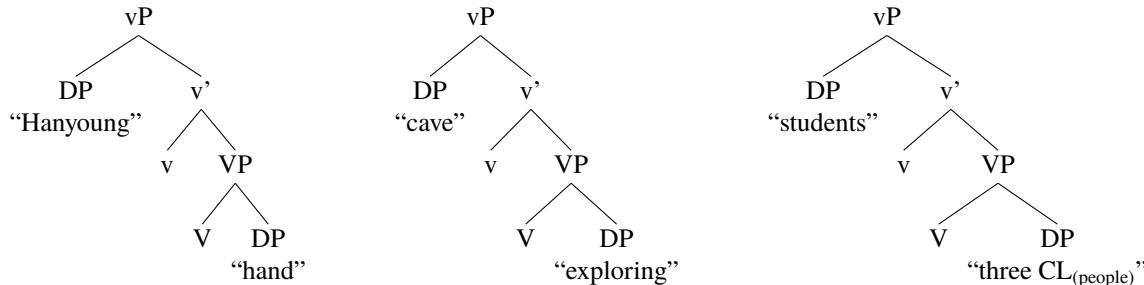
Beyond the empirical issues, it is difficult to motivate the leg of movement that a possessor raising analysis commits to.

- For example, Choe (1987) demonstrates that, the “possessor” of the part-whole DACs exhibits A-chain characteristics, but nonetheless, if indeed derived by movement, cannot be an instance of movement motivated by Case Theory.

2.1.2 The non-constituent approach

Non-constituent approaches to Korean DACs propose something that ultimately looks like a ditransitive structure, saying that both arguments are licensed as arguments of the verb. This has been argued for both part-whole DACs and AS-nominal DACs, although independently (see, e.g. [Yoon 1990](#) vs. [Grimshaw & Mester 1988](#)).

(27) Example ditransitive structures for Korean DACs



Since this approach pins the phenomenon structurally on the verb, we can then hypothesize that the apparent “affectedness condition” is something about the underlying structure of DOC predicates in general (in contrast with, e.g., experiencer/stative predicates).

Residual issues:

- Addresses empirical issues 1 and 3, but not empirical issue 2: it does not explain why the lower DP is not actually a DP.
- Fails to capture the empirical observation that DACs form an independent class from DOCs in allowing an alternative complement-head structure, and disallow a prepositional ditransitive alternative.

2.2 All ditransitive, or no? Taking stock

In sum, despite overwhelming evidence that we can't adopt a *constituent approach* to DACs, and must accommodate some type of base-generated approach, a ditransitive account such as (27) leaves a number of questions unresolved:

1. if DACs are ultimately just ditransitive double object constructions, then why is the phenomenon so restricted? Both in the types of arguments that can participate, and the general ban on double ACC for almost all canonical ditransitive verbs in Korean?
2. Why should the lower “argument” resist adnominal modification and A-bar probing in DACs, but not for DOCs? ([Kim 2008, 2015](#))

The puzzle (updated): How can we understand the apparent structural similarity between the two sub-varieties of double ACC constructions, without losing the generalizations that differentiate between them?

The proposal (in broad strokes): A theory of argument saturation and predicate modification that accounts for the set of facts above. I'll ultimately argue the following:

1. *Part-whole, AS-nominal, and classifier* double ACC constructions are not true DOCs: we only have a surface appearance of a DOC due to ACC marking on what is in fact a low adverbial modifier to the predicate (as in [Jo 2024](#)).
2. I draw a parallel between Korean DACs and contemporary theories of semantic composition, arguing that the ACC-marked adverbials combine with the predicate via *restriction* ([Chung & Ladusaw 2004; Legate 2014](#)). The IA is introduced by APPL.
3. In *beneficiary predicates* and *synthetic causatives*, we have genuine DOCs, with a high APPL structure that licenses two DP arguments ([Marantz 1993; Pylkkänen 2008; Bruening 2021](#)).
4. To the extent that double accusative SCG ditransitives are considered grammatical by native speakers, I suggest a potential strategy by which speakers might coerce these to fit in the proposed structure for DACs (and not the one for DOCs).
5. The “affected object” restriction is derived by height: higher IAs (indirect objects), licensed by APPL, have a looser semantic relationship to the event denoted by the predicate, contra low IAs (direct objects). I suggest that APPL is a general tool for adding an IA at an intermediate position of the VP (above the Root, but below Voice), and any IA added by APPL will carry semantics that can be loosely characterized as “affected”, simply as a consequence of being less central to the event core.
6. The use of APPL in a transitive structure makes a prediction about the relationship between modes of semantic composition, namely, that application of *restriction* blocks the direct application of *saturation*. An initial cross-comparison of the phenomena described here and in [Legate \(2014\)](#) suggests that this is true.

3 Predicate restriction and ACC-marked adverbials

3.1 The semantics

In his account of part-whole DACs, Yoon (1990) appeals to the possible semantic relations between sisters in a syntactic structure outlined in Higginbotham (1985), characterized below.

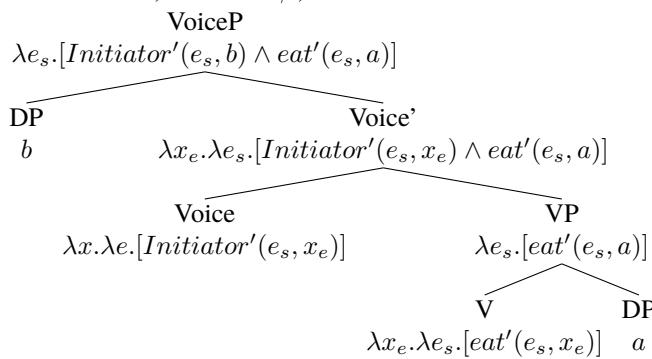
1. *Theta-marking*: the traditional understanding of theta role assignment as in Chomsky (1993); a verb theta-marks its internal argument with a role drawn from the specifications of its theta grid.
2. *Theta-binding*: quantifying or existentially closing an argument variable. For example: the definite determiner “binds” the argument x of $\lambda x.[\text{dog}'(x)]$ in the DP “the dog”, to pick out the unique x such that x is a dog.
3. *Theta-identification*: the semantic relation of modification, between two constituents X and Y that both have an open variable.

Yoon (1990) pre-dates the most well-known formalized example of identification, Kratzer (1996)’s theory of event identification and the use of Voice to introduce the external argument (28–29).

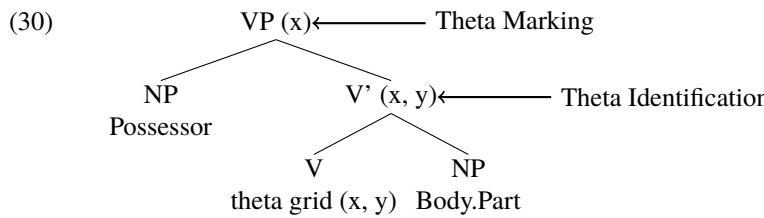
- (28) Event Identification (Doron 2003; Higginbotham 1985; Kratzer 1996):

$$\text{IDENT}_{\text{EVENT}}(\alpha_{\langle e, \langle s, t \rangle \rangle}, \beta_{\langle s, t \rangle}) \equiv \lambda P. \lambda x_e. \lambda e_s. [\alpha(e, x) \wedge P(e)](\beta)$$

- (29) If Voice = α , and VP = β , then:



Yoon (1990) characterizes the semantics of part-whole constructions in terms of theta identification: he suggests that the “body part NP qualifies the internal argument by modification” as opposed to canceling it out, as would happen if the “body part NP” was theta marked by the predicate. He provides the structure in (30) below.

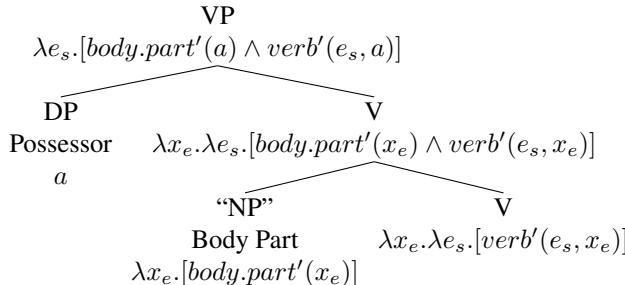


The analysis in Yoon (1990) leaves some questions open, the most essential being: why should body parts (and, in addition, AS-nominals and classifier phrases), but not other types of “NPs”, combine via theta-identification?

- I believe his intuitions about the semantics of these constructions to be essentially correct, and I take steps to bring this account into conversation with contemporary theories of semantic composition, and build a predictive theory for how and when we get “theta identification” (Higginbotham 1985; Yoon 1990).
- A modernized formulation (to be improved) of Yoon (1990)’s proposal is provided in (31–32):

- (31) $\text{IDENT}_{\text{THETA}}(\alpha_{\langle e, t \rangle}, \beta_{\langle e, \langle s, t \rangle \rangle}) \equiv \lambda P. \lambda x_e. \lambda e_s. [\alpha(x) \wedge P(e, x)](\beta)$

- (32) If “NP” = α , and V = β , then:



Restriction and saturation (Chung & Ladusaw 2004; Legate 2014):

Chung & Ladusaw (2004) provide a contemporary theory of semantic composition in domains beyond Kratzer (1996)'s Voice:

- **Saturation**

Type 1: Function application (directly replaces the variable with a constant that denotes a specific individual).

Type 2: Existential closure (or other means of binding the open variable).

- **Restriction**

A “property” argument is interpreted as a restrictive modifier of the predicate.

“The most important fact about Restriction is that it does not saturate the predicate. It does not therefore remove the possibility, or indeed the necessity, that the argument position it targets be saturated by either of the saturating composition operations that we have considered.” (Chung & Ladusaw 2004; p. 5).

- The book's aim is to argue for two types of indefinites, using case studies of Maori and Chamorro— ultimately they argue that the difference between two kinds of indefinites lies in whether they compose with the predicate via Saturation or via Restriction.

Voice and the passive in Achenese (Legate 2014):

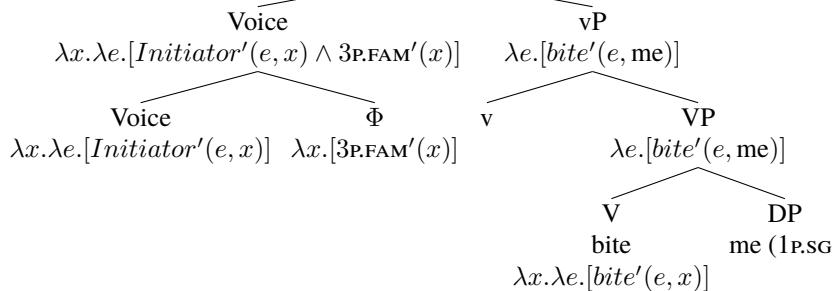
- Dealing with the phenomenon in Achenese where there is apparent agreement with the Initiator, even in the passive construction (33).
- Abstracting away from details, Legate first confirms that (33b) must, indeed, be a passive, and then argument that the “agreement” morpheme is not true agreement, but instead an element that *restricts* the open variable *x* introduced by the Voice head.

- (33) a. *uleue nyan di-kap lôn*
snake DEM 3P.FAM-bite 1P.SG
“The snake bit me”
b. *lôn di-kap (lé uleue nyan)*
1P.SG 3P.FAM-bite (by snake DEM)
“I was bitten by the snake.”

(Legate 2014: p. 9)

- (34) $\lambda x. \lambda e. [Initiator'(e, x) \wedge 3P.FAM'(x) \wedge bite'(e, me)]$

(Legate 2014: p. 41)



Here, *Restriction* is used to derive a passive with an unsaturated agent argument. Something Legate doesn't discuss explicitly, that falls out of this analysis is the idea that restriction interferes with Voice's ability to introduce an external argument (EA) in its specifier, hence the resulting passive construction.

- Turning to Korean, I will argue that this is indeed the case, that Restriction **blocks** direct Saturation by function application.

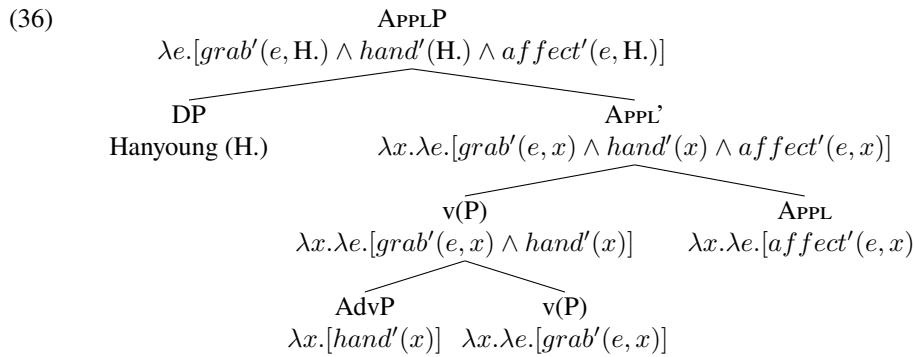
3.2 The implementation

The account of DACs in Korean makes two updates to proposal from Yoon (1990): the semantics is ultimately one of modification/Restriction, but I argue that the phrase that plays the restricting role is also *syntactically* a modifier.

- While the obligatory accusative case on these modifiers is initially surprising, ACC-marked adverbials are attested for in Korean: Jo (2024) provides a recent account of these adverbials and their case assignment.
- ACC-marked adverbials (35) (from Jo 2024: p. 9): case-marked adverbials are either durative or multiplicative modifiers, that express “duration of an event, or the number of times an event is repeated”. Jo (2024) argues for these modifiers to be low adverbials that apply at the VP layer, just above introduction of an internal argument.

(35)	a.	<i>mina-ka han sikan-ul chayk-ul ilk-ess-eyo</i> Mina-NOM one hour-ACC book-ACC read-PST-DECL “Mina read a book for one hour.”	미나가 한 시간을 책을 읽었어요
	b.	<i>mina-ka sey pen-ul kyengchal-ul pwull-ess-eyo</i> Mina-NOM three times-ACC police-ACC call-PST-DECL “Mina called the police three times.”	미나가 세 번을 경찰을 불렀어요

I also argue that the true IA, the higher ACC-marked element in DACs is introduced into the structure syntactically by APPL. This gives us the following example structure for a DAC (36):



3.3 Why these modifiers, and not others?

In Webster (under review), I suggest that Roots introduce their own arguments, and that this process is driven by the “entailments” of the Root. I attempt to formalize this here.

- (37) Formal definition of entailment:
A entails B iff whenever A is true, B is also true.

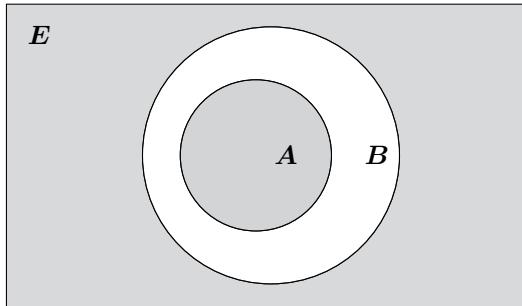


Figure 1: A entails B; B does not entail A.

The definition in (37) refers to propositions, but we can utilize the same logic of set relations to talk sets of entities/individuals.

- Consider, for example, an exploring event. Formally, we might represent the predicate “explore” as either $\lambda e. \lambda x. [explore'(e, x)]$, or $\lambda e. [explore'(e)]$, depending on our commitment to the semantic origin of the internal argument.
- Assume set A denotes the set of all exploring events, and set B denotes the set of all exploring events where some individual x undergoes exploration.

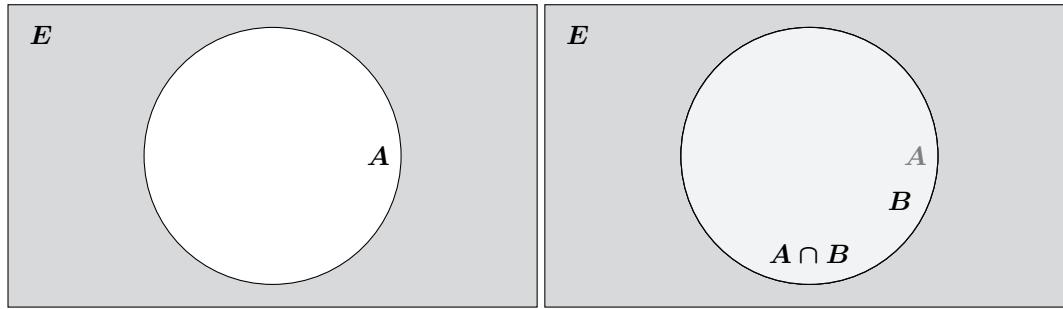


Figure 2: A entails B, and B entails A ($A \cap B = A$).

- Is it ever possible for an exploring event to *not* include an individual x that undergoes exploration? No. In other words, A and B pick out the exact same set of events.

(38) Conditions for a Root with an IA

Iff $\lambda e.[P(e)]$ entails $\lambda e.[P(e, x)]$, and $\lambda e.[P(e, x)]$ entails $\lambda e.[P(e)]$, then the denotation of the Root corresponding to P can be formally represented as $\lambda e.[P(e, x)]$.

Extending the notion of entailment to predicate restricting modifiers

- AS-Nominals, Part-whole nominals, Classifier phrases, all entail an argument.
 - “explore x ” entails an x that is explored; “hand of x ” entails a whole x that it is a part of; “three x ” entails a sum that is consists of three x .
 - *If used as modifiers*, these are all properties that will restrict the set of possible x ’s.

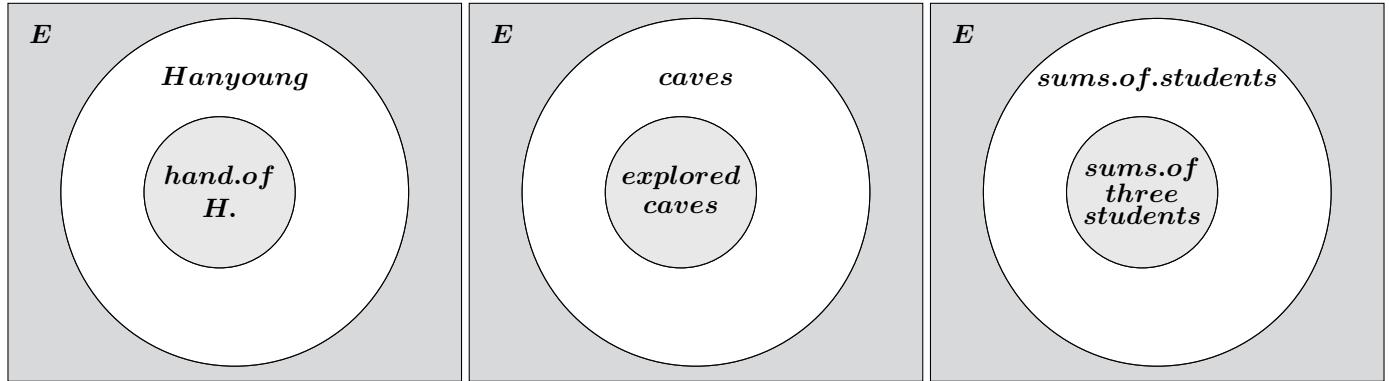


Figure 3: Using *hand*, *explore*, and *three* CL as restrictors

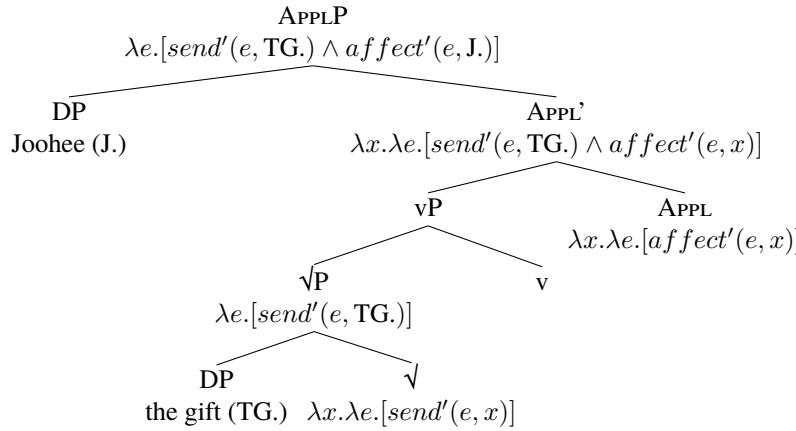
4 True DOCs in Korean, and how to handle SCGs

4.1 First, the non-controversial ones

I assume a high ApplP analysis of beneficiary predicates in Korean (Marantz 1993; Bruening 2021; Pylkkänen 2008; Kim 2015).

- The proposed structure (39) is superficially similar in shape to the one for DACs, but with the crucial difference being that APPL introduces a *new* argument, as the internal argument of the verb is already saturated by a DP in the complement position of V.
- Though not fleshed out completely here, I believe that the synthetic causatives have an identical underlying structure.

(39)



4.2 Contested SCG ditransitives

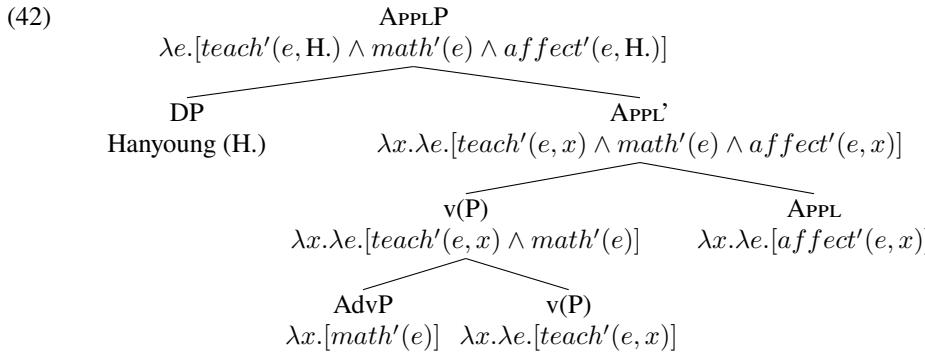
To the extent that *SCG ditransitive* DACs are considered grammatical by native Korean speakers, I suggest that this may be due to the fact that SCG ditransitives are unique in allowing their indirect object to alternatively be expressed as a “Theme” (40). In (40c), “those students” are the Undergoer/Theme of a transitive predicate *teach*.

- (40) a. The teacher taught those students math.
 b. The teacher taught math.
 c. The teacher taught those students.

For Korean speakers who accept (41), then, I suggest that they are able to do so by accommodating the structure in (42).

- (41) %? *sensayngnim-i ku haksayng-tul-ul swuhak-ul kaluchi-ess-eyo*
 teacher-NOM those student-PL-ACC math-ACC teach-PST-DECL
 “The teacher taught the students math.” (“The teacher math-taught the students.”)

%? 선생님이 학생들을 수학을 가르쳤어요



This hypothesis predicts that “math” in (41) is a modifier, *not* a nominal argument, and should behave syntactically as such.

- Anecdotally, this has proven difficult to test because for most speakers the sentence in (41) is already so degraded.
- However, this does share similarity to the object-incorporation phenomenon attested in Chamorro (43)³ (Chung & Ladusaw 2004).
- Its possible that indefiniteness may also interact with the acceptability of these in Korean, as in the Chung & Ladusaw (2004) account.

- (43) *Gäi-ga' un ga'lagu ennao na patgun*
 AGR.have-pet a dog that L child
 “That child has a dog.” (“That child pet-has a dog.”)

(Chung & Ladusaw 2004: p. 103)

Treating the SCGs in this way also allows us to provide an explanation for why Korean, generally, disallows double ACC for most canonical ditransitive predicates. It seems most promising to me to suggest that in Korean, overt APPL (i.e. the beneficiary or causative predicates) is required for structures that truly license two arguments.

³The morpheme glossed as “L” is a “linker” morpheme, a head-marking phenomenon in Chamorro (and other Austronesian languages) that is used to indicate that the nominal phrase it marks has modifiers (Chung 2020)—in (43), this morpheme shows up due to the presence of the demonstrative.

5 A general theory of argument saturation and “affected objects”

We arrive at a picture of Saturation and Restriction that seems to conform to the following principles:

- both the event argument e and the thematic argument x of a predicate can undergo restriction, so long as the restrictor will successfully restrict the set of possible entities represented by that variable (i.e. the set of e 's or the set of x 's).
- restriction of the thematic argument x blocks direct saturation (and syntactic realization) of the IA as a complement of the predicate.
- APPL can be added to the structure via event identification, and then consequently saturate the open argument variable with its specifier.
 - Note that, in the case of Legate (2014)'s account of Achenese passives, restriction of the thematic argument of the Voice head blocks direct saturation of that argument, resulting in a passive where the agent is saturated indirectly via existential closure.
 - This could also be a way of understanding the open question of why the event argument e is always existentially closed rather than directly saturated: under this view, it is simply due to structural distance from the predicate — if only one process (saturation or restriction) can happen at a time, by the time the e variable is the last one left we are too far away from the piece of structure that introduced it semantically to do anything but existential closure.

In addition, the following consequences seem to arise for the nature of argument structure:

- I've suggested that APPL can be utilized with a “transitive” predicate that has lost its ability to directly saturate its IA.
- Intentional underspecification is built into the grammar when it comes to the role of APPL as a functional head— rather than having a specific denotation relating to “benefactor” or “causee”, or “goal” or “recipient”, APPL simply relates an event to an entity that is affected by that event.
- This allows us to capture the overlap with Undergoers, which are also “affected” by the event, but involve much more direct affectedness, vs. arguments that are less directly affected by an event, like the goal of a “sending” event.
- There is also redundancy in APPL's use: in some cases, it introduces a *new* argument, but in other cases it simply serves to assist in saturation of an argument that was already present.
 - I believe that this type of structural redundancy is desirable, given, for example, contrasts between ditransitives like (44) and those like (45) (Bruening 2021)— however, *why* this redundancy is present and how it relates to Root entailments remains a puzzle.

- (44) a. Niko made Jungu some ice cream.
 b. Niko made some ice cream.
 (No implicit indirect object)

- (45) a. Niko sent Jungu a letter.
 b. Niko sent a letter.
 (Implicit indirect object)

Finally, this account has made some assertions about the correlation between semantic function and syntactic category: namely, that restrictive modifiers are syntactically modifiers too, even if they superficially have an apparent nominal form.

- The syntactic category n and its extended projection remains exclusive to reference, building up a constituent that interacts with a predicate structure only via direct saturation.

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