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Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA  
SANTA CRUZ

**LOANWORDS IN SYNTAX: THE PROJECTION OF INTERNAL  
ARGUMENTS**

A dissertation submitted in partial satisfaction  
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

LINGUISTICS

by

**Nikolas Webster**

August 2026

The Dissertation of Nikolas Webster  
is approved:

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Professor Karlos Arregi

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Donald Smith  
Interim Vice Provost and Dean of Graduate Studies

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2026

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# Abstract

Loanwords in syntax: The projection of internal arguments

by

Nikolas Webster

This dissertation argues that DP arguments cannot and should not be subsumed under a c(ategory)-selectional analysis, and are not licensed by the mechanisms that guide head-complement relations. I present three in-depth investigations of Sino-Korean loanwords and the construction of Sino- and native Korean complex predicates, making the following claims about the nature of internal argument realization:

1.) Internal arguments, unlike external arguments, *cannot* be severed from the lexical predicate, and are not introduced by a functional projection, of either the verbal or nominal domain (Chapter 2). In fact, Sino-Korean loanwords empirically necessitate that acategorical syntactic entities—Roots—are themselves internal argument introducers.

2.) DP arguments are not always syntactically projected, though they are always semantically represented (Chapter 3). Syntactic argument projection, rather than being obligatory, is in fact one of two possible routes for the syntactic realization of an internal argument. Korean incorporation phenomena reveal that the semantic profile of being an argument-introducing predicate leads to two possible structural realities: direct saturation of the argument slot via syntactic realization of a DP argument, or restrictive modification and existential closure of the argument variable.

3.) DP arguments do not require a syntactic head to license them (Chapter 4), only the presence of a predicative entity, which, in the right environment, can be realized as a

maximal projection of a Root. I demonstrate empirically, through a close investigation of Korean argument displacement constructions, that syntactic introduction of a DP argument tracks the structural location of constituents that denote argument-introducing predicates, *not* the location of syntactic heads.

This collection of facts, when taken together, paints DP argument introduction as a phenomenon that cannot be mediated by category feature selection in Syntax, but is instead driven by the semantic principles of predication and composition, constrained by the structural location of argument-introducing predicates. In short, argumenthood *must* be defined beyond what the standard tools of Syntax give us, comparable to the way that researchers often characterize s(ematic)-selection as positional but dependent on principles beyond what Syntax proper can account for.

어제의 나 오늘의 나 내일의 나

For little Niko, and the beautiful life you will build. Don't give up.

빠짐없이 남김없이 모두 다 나

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shape. You've taught me the importance of establishing a foundation, ensuring that every claim and its consequences are dissected and settled before moving on to the next, and the value of moving through a proposal linearly, step-by-step, without being afraid to pause, critically evaluate, and change directions. You once described syntacticians to me as artists, and I couldn't agree more. Thank you for helping me find and develop my artistry— I hope that, when people look at my artwork to come, they will see the style, technique, and creativity that are all inspired by your teachings. You've taught me what it means to be a researcher, and you've always been honest about what it takes; I've always appreciated your care, candidness and sincerity. If I am one day even half the advisor as you, I will consider it a great accomplishment, and take pride in being able to inspire and guide my advisees in the way that you have done for me.

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# Chapter 1

## Introduction

This dissertation is interested in the syntactic representation of *internal arguments*; those arguments classically characterized as THEMES (Gruber 1965, 1976; Jackendoff 1972, 1975; Dowty 1991), or sometimes as PATIENTS; or UNDERGOERS, to use Ramchand (2008)’s terminology. The variation in naming convention speaks to the world of lexical semantics, where the question of argumenthood asks: what are the relevant dimensions of meaning that syntax pays attention to? The underlying assumption is that the syntax has *some* systematic means of projecting arguments depending on their status: arguments of type A will get projected in the syntactic position where A arguments go, arguments of type B will get projected in the syntactic position where B arguments go, and so on and so forth. Lexical semantics is interested in determining what are the correct semantic dimensions that qualify an argument as one of type A, B, C, etc., or as not a possible argument at all.

This is not, in fact, a dissertation on lexical semantics, nor of the fine-grained morpho-syntactic consequences of lexical semantics— I invite readers to visit Levin & Rapaport Hovav (2005) for a very comprehensive and insightful overview, if they are

interested in the topic. This dissertation is, rather, concerned with the syntactic principles which guide the structural projection of internal arguments<sup>1</sup>, and takes as a starting point the constructionalist approach to argumenthood in Hale & Keyser (1993, 2002). The question of argument projection is one of *argument structure (AS)*: what is the structural configuration of a predicate and its argument, and what drives this configuration? Our starting point, in its most basic form, is the hypothesis that there exist arguments which can be narrowly classified as arguments of type A, B, C, and so on, and that each argument type is realized in a particular structural representation. Arguments of type A will be mapped to structural representation A, arguments of type B to structural representation B, and so on. The classical generative formulation of this hypothesis stems from the Projection Principle (Chomsky 1981), given in (1).

- (1) **The Projection Principle:** The argument structure of a predicate *P* must be realized the same way, at every level of syntactic representation: representations at each syntactic level (LF, D- and S- structure), are projected from the lexicon, in that they observe the sub-categorization properties of lexical items.

The Projection Principle as it is formulated in (1) establishes the link between structural position and interpretation, and presents lexical sub-categorization as the means to establish said link. The Projection Principle, in fact, is a means of ensuring that there *is* a link at all, between structural position and interpretation, in opposition to the easily falsifiable alternative that there is no meaningful systematic correlation between a syntactic structure and the meaning associated with it at all. Per (1), all structural relations initially built in Deep Structure cannot be removed or erased by later operations. This leads to the introduction of, for example, traces, allowing us to ensure that a DP which

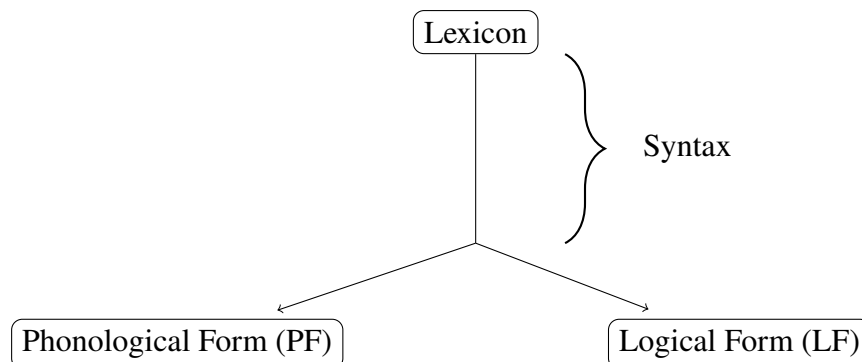
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<sup>1</sup>Taking for granted that there is indeed a unified semantic profile that internal arguments share.

originated as the complement of V but moved elsewhere during the derivation will still be interpreted as the complement of V in LF (Logical Form), because there is a trace that co-indexes the DP to its initial positional identity. As long as syntacticians take it to be true that there *is* a link between syntactic structure and interpretation, and that our formal model of grammar ought to be able to derive that link, some version of the Projection Principle will be alive in our theory. If there exists a capital S “Syntax” that is autonomous of both meaning and form, then there must also be a systematic means by which the structural output of Syntax corresponds to the structural outputs of the interpretative module (Logical Form; LF) and the module which guides pronunciation (Phonological Form; PF).

The Projection Principle (1), while not saying anything directly about internal arguments (or any argument types, external, internal, or otherwise), does, given the inverted-Y model (2), require that argument status be syntactically determined: to be an internal argument is to be base-generated in the complement position of a V, per its sub-categorization/selectional requirements. If meaning is read off of structure, then LF will derive argument status and interpretation from structural position.

(2) The Inverted-Y model



## *Chapter 1 Introduction*

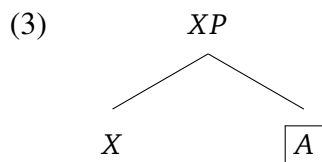
In short, the classical view of what it means to be an argument is a syntactic notion, that has LF consequences. The view to be pursued here in this dissertation is that what it means to be an argument is fundamentally an LF notion, which has structural consequences but must, at some level, be guided by semantic principles. I still take LF to be a level of syntactic/structural representation; what I mean by “being an LF notion” is simply that argumenthood *must* be defined beyond what the standard tools of Syntax proper give us, comparable to the way that researchers often characterize s(ematic)-selection as positional but dependent on principles beyond what Syntax proper can account for (see, e.g., discussions in Grimshaw 1979; Odijk 1997; Adger & Quer 2001; Moulton 2009; Adger 2012).

More specifically, I will argue that there is no c-selectional means by which the relationship between an argument and a predicate is formally established, and instead appeal to semantic composition as the driving force behind argument position. I see this as a comparable perspective to the way we often appeal to semantic principles to make sense of the structural positions of adjuncts. I will argue that the structural location of DPs in the Syntax directly corresponds to the position of semantic objects of type *e* composing with a predicate structure via Function Application, and that the positional identity of a DP argument as a “complement” or a “specifier” is, in fact, an epiphenomenon of the constraints which drive semantic composition.

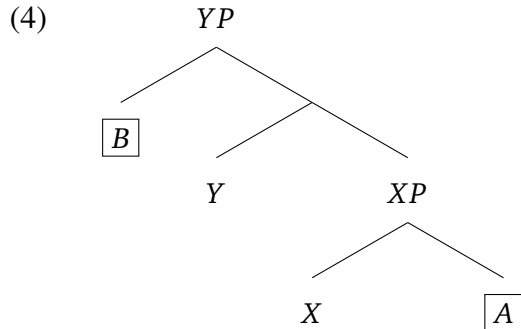
The direct consequences of this proposal will mean that being an argument of type A does not in fact, in all cases, mean being in the exact same structural position (e.g., sister to a predicate *P*). However, I will argue that the proposal does nonetheless adhere to a version of the Projection Principle, in that it asserts a constrained mapping of syntactic and semantic (LF) structure: an argument of type A will always be structurally defined

as an argument of a predicate type A, an argument of type B will always be structurally defined as an argument of a predicate type B, and so on. What we must break, here, therefore, is not the Projection Principle itself, but our theory of structural interpretation that dictates that an argument of type A (an “internal argument”) is always realized as a syntactic *complement* to the predicate that it is an argument of.

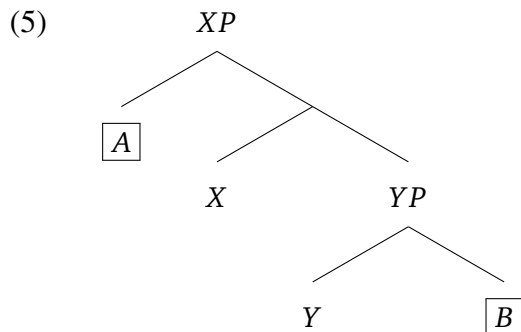
In addressing the question, “what is the structural configuration of a predicate and its argument?”, the answer to be pursued in this work collapses the syntactic distinction between “internal” and “external” arguments. Building upon the predictions developed by Kratzer (1996), I will argue that all arguments (regardless of their associated semantic role) are sensitive to the same strict locality constraint when syntactically introduced: they must be realized in the closest possible position to their introducing predicate (cf. Williams 1980). This proposal is embedded within a Minimalist-compatible perspective (Chomsky 1995), in that it assumes a bottom-up derivational approach. Take (3), for example, to be a representation of the first Merge step of a given derivation. If an argument-introducing predicate *X* is to be involved in the very first Merge step of the derivation, then its argument *A* must also take part in this first step, realized as sister to *X*, the closest possible syntactic relationship between any two nodes.



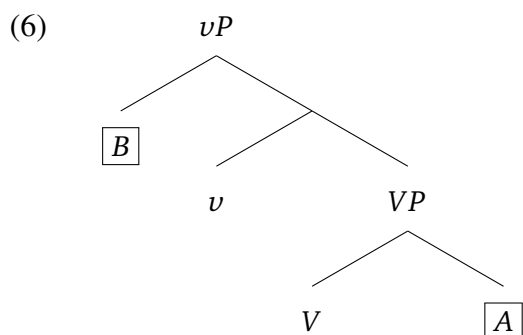
If an argument-introducing predicate *Y* does *not* take part in the first Merge step of a syntactic derivation (4), its argument *B* will be realized as specifier to *Y*, maintaining strictest possible locality given that the sister position is unavailable.



In (4), the syntactic (hierarchical) relationship that holds between  $X$  and  $A$  is different from the syntactic relationship that holds between  $Y$  and  $B$ , but not because the semantic relationship of  $X$  and  $A$  differs from that of  $Y$  and  $B$ . Rather, the difference is a consequence of the order in which  $X$  and  $Y$  participate in the derivation: in (4),  $X$  Merges before  $Y$ . Therefore  $Y$ , participating in the second step of Merge, combines with a syntactic object which contains  $X$ , and consequently does not participate in direct composition with its argument  $B$ ; instead,  $B$  takes part in a step of Merge which composes  $B$  with the syntactic object containing  $Y$  and  $XP$ . If the reverse order of Merge were to apply, such that  $Y$  participated in the derivation before  $X$ , we would predict the structure in (5). Here,  $Y$  gets to Merge directly with its argument  $B$ , but  $X$  composes with a constituent that contains  $Y$ , and as such its argument  $A$  is realized as a specifier, Merging with the syntactic object containing  $X$  and  $YP$ .

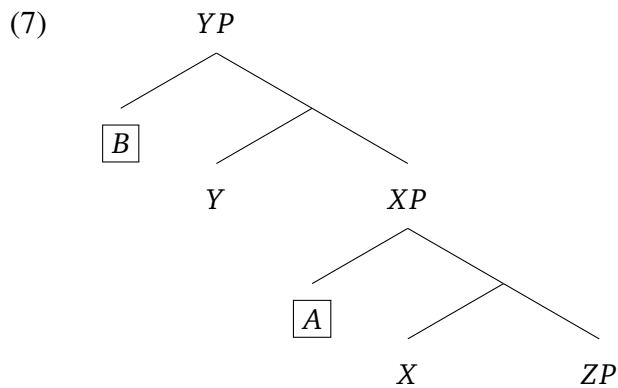


So far, this characterization of argument configuration is not entirely novel, but independent commitments about the hierarchy of projections might predict certain orders of Merge, of certain predicates with respect to each other, to be unattested. For example, replacing  $X$  and  $Y$  of (4) with big  $V$  and little  $v$ , respectively, we get the standardly assumed basic structure of a transitive verb phrase (6), which takes  $A$  to be the sole argument of the lexical verb  $V$ , and, adopting the insights of Kratzer (1996) and Hale & Keyser (1993) (among others), takes  $B$  to be the sole argument of the functional projection  $v$  (or Voice, in Kratzer 1996’s terminology).



What sets “internal” arguments apart from “external” arguments configurationally, under this perspective, is the hierarchical relationship between their respective introducing predicates: if  $Y$  obligatorily selects for a phrase headed by  $X$ , then  $B$ , as the argument of  $Y$ , will always be introduced structurally higher than  $A$ , the argument of  $X$ . Additionally, if  $Y$  always selects for a constituent that contains  $X$ , then  $Y$  can never take part in the first Merge of a derivation, and consequently its argument  $B$  will *always* be realized as a specifier, since  $Y$ ’s sister position will never be available. In short, we will only ever generate (4), and never (5). The position of a given argument as a specifier or a complement is therefore determined by the hierarchical ordering of projections. If  $X$  was ever able to Merge into an already-existing structure, then  $A$  would also then

consequently be realized as a specifier. Consider, for example, the possible structure in (7), which would be compatible both with the commitment that *Y* is hierarchically ordered above *X*, as well as with the possibility that *X* itself did not take part in the very first Merge step of the derivation.



However, depending on our independent hypotheses about the exact nature of terminal nodes *X*, *Y*, *Z*, etc., and the consequential formalization of how a given structure involving these items is incrementally built, we may expect non-initial Merge of *X* to be unattested, in which case *A* would exclusively occur in a complement position. Within a broadly Minimalist approach to structure building (Chomsky 1995), this ends up being the case, as a consequence of the re-formulation of selection/sub-categorization (in the Government and Binding sense) as feature-driven Merge which, crucially, conforms to the Extension Condition (the strict bottom-up procedure of structure building).

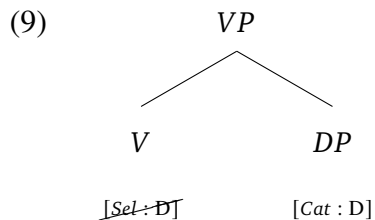
The higher level thesis of Minimalism is such that all instances of structural complexity in natural language are constructed via one and only one operation, Merge, that must operate over the root (maximal) node of the derivation. Lexical items, as formal objects that participate in Merge, do not themselves encode any internal structural complexity, but rather are information bundles in the form of features, such that Merge can operate

over them according to their featural specifications. As such, being an “argument-introducing” lexical item means having a feature that triggers external Merge of an argument. One such system is that of *cyclic selection* (Pietraszko 2016, 2017; and see related discussion and proposals in Pietraszko 2023; Cowper 2010): syntactic heads may be specified for SEL (selectional) features and CAT (category) features, which are understood to drive idiosyncratic selectional restrictions of a particular lexical item, not the universal ordering of the extended projection (Abney 1987; Grimshaw 2000; Cinque 1999; Starke 2001; Adger 2010). For example, Adger (2010) implements two types of structure building, Sel-Merge, defined as Merge triggered by c-selectional features, and HoP (Hierarchy of Projection) Merge, defined as Merge determined by a fixed order of functional projections in a head-complement sequence. Considering a simplified version of the hypothesized extended verbal projection in (8), HoP Merge ensures that the order of functional heads will precede in line with this hierarchy, and does not encode this hierarchy via selectional features on any of these projections.

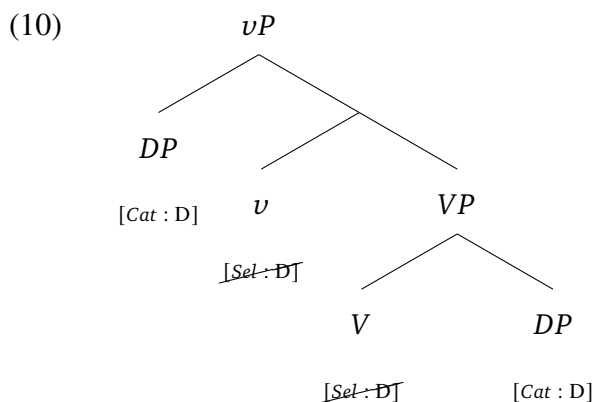
(8) The Verbal Extended Projection:  $\langle C, \dots, T, \dots, v, V \rangle$

A given syntactic head, however, might also have a c-selectional feature, which will be checked by a category feature (Adger 2010; Cowper 2010; Pietraszko 2023). For example, a V which selects for a DP argument, would have a [*Sel* : D] feature. The AGENT introducing head *v* would also have an [*Sel* : D] feature. As such, the incremental construction of the structure in (6) would proceed as follows. First, V, as the lowest head of the verbal extended projection, would begin the derivation, and trigger the Sel-Merge of a DP as its complement (9). The category feature [*Cat* : D] on the DP checks and satisfies the *Sel* feature of the V head.

## Chapter 1 Introduction



The next head  $v$ , determined by the hierarchy of projection, takes  $V$  as its complement<sup>2</sup>. As the introducer of an external argument,  $v$  also has a  $[Sel: D]$  feature, but this feature will trigger Merge of an argument in its specifier position (10)— not its complement position, because the complement position is unavailable, already occupied by the VP.



All formulations of the structure building process as driven by features endeavor to derive the universality of the extended projection. If the introducer of an internal argument—  $V$  in the example derivation above— is defined as the first/lowest head in

<sup>2</sup>Though I abstract away from the exact details of implementation, a feature-driven system of Merge that adopts Adger (2010)'s HoP Merge and Sel-Merge must also have a way to ensure that HoP Merge takes priority over Sel-Merge. Adger (2010) accounts for this via HoP Merge as a structure-building operation triggered by Cat(egory) features, while Sel-Merge is triggered only by Sel(ectional) features, and postulating that Cat features must be handled prior to Sel features. There is a starting assumption that all functional heads of the extended projection have a Cat feature, such that HoP Merge will add them to their correct hierarchical position. Sel features, on the other hand, are idiosyncratically listed for particular heads. Per Pietraszko (2023), Sel features also differ from Cat features in triggering Merge of a constituent off the main spine of projection, i.e., as a specifier.

the projection hierarchy, then it will always be the first Merged item in the derivation, and its argument will always be next, triggered by the presence of [*Sel* : D]. Therefore, a V which has a DP argument will always realize its argument as its syntactic sister, not because we've formally stipulated that the argument must be a complement, but because V is always the first head of the extended verbal projection. The requirement that V's argument be generated as its syntactic sister is a by-product of the interaction of two independent components of the bottom-up model: feature-driven Merge, and the Hierarchy of Projections.

I note here, in advance of the empirical phenomena and resulting analysis I present in this dissertation, that there are already some independent reasons to be suspicious of DPs as “selected items”: DP arguments do not exhibit the same selectional profile as other head-complement relationships. For one, verbs with clausal complements can differ in the size of the clausal complement they select for, such as, for example, English raising predicates that select for TPs (11), predicates that require CP complements (12), or restructuring predicates that can select for even smaller, VP-sized constituents (13) (Wurmbrand 2001, 2002).

(11) Stephanie appears [<sub>TP</sub> \_\_\_ to be excited ].

(12) I wondered [<sub>CP</sub> whether Matthew would be at the office today ].

(13) Matthew tried [<sub>VP</sub> going to the beach ].

In contrast, verbs that take a nominal complement can never specify differences in the size of said complement. There is no attested verbal paradigm where a specific verb exclusively selects for a DP but not an NP, or vice versa.

Second, verbs that select for, e.g., PPs, can sub-select for a specific head of their

## Chapter 1 Introduction

complement (14), but a verb that has a DP argument can never dictate the specific determiner of said DP argument.

- (14) a. Niko depends on his friends.  
b. \* Niko depends at his friends.  
c. \* Niko depends his friends.

Third, DP arguments are the only ones that can be base-generated in specifier positions: external arguments are always DPs, never PPs, CPs, or any other type of phrasal constituent. These three properties set DPs uniquely apart from other phrasal entities that are canonically viewed as selected items. In this dissertation, I will argue that, just as these three properties suggest, DP arguments should *not* be subsumed under a selectional analysis, and are not licensed by the same mechanisms that guide the introduction of complements with other containing category labels<sup>3</sup>. In addition to these three observations, this dissertation also identifies: 1) the absence of a verbal functional head serving as a designated “internal argument introducer” (Chapter 2); 2) evidence that DP arguments are *not* always syntactically projected, though they are always semantically represented (Chapter 3); and 3) evidence that DP arguments do not require a syntactic head to license them (Chapter 4), only the presence of a predicative entity (which could be a head, but under the right circumstances, is itself a maximal projection). This collection of facts, when taken together, paint a picture of DP argument introduction as a phenomenon that cannot be mediated by featural selection in Syntax proper, but must instead be characterized by the semantic principles of predication and composition.

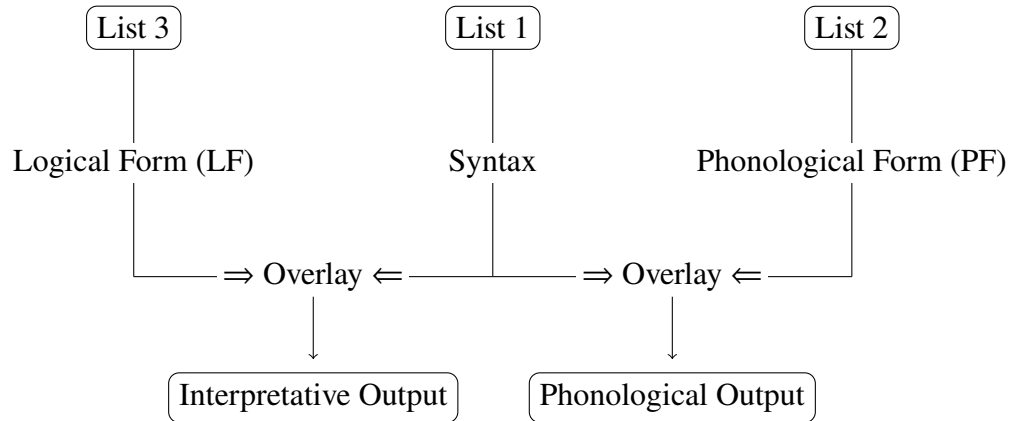
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<sup>3</sup>I remain agnostic about what mechanisms guide the introduction of PP, CP, TP, VP complements, whether these are accomplished via selectional feature matching after all, or something else. My claims in this dissertation are specific to DPs and should not be taken as broad claims about every complement type that has ever been proposed or identified.

The selectional feature-driven account outlined previously and the proposal in this dissertation have the same perspective on the configurational relationship between a predicate and its argument: an argument will be syntactically realized in the closest possible local configuration to its introducer (syntactic sister, if possible, or as a specifier otherwise). However, this dissertation departs quite radically from standard assumptions in its perspective on *how* and *why* this configuration comes to be. In answering the question, “what drives the configuration of a predicate and its argument?”, this work argues that the base syntactic positions of DP arguments are not, and cannot, be accounted for by a grammatical system that mediates DP argument position through the featural specification of syntactic heads. I suggest instead that the base positions of DP arguments are mediated directly by the compositional structure of LF (Logical Form). The alternative proposal maintains HoP Merge as the driving force of structure building for a single phrase, while the Merge of two independent phrases/maximal projections is constrained in a different manner.

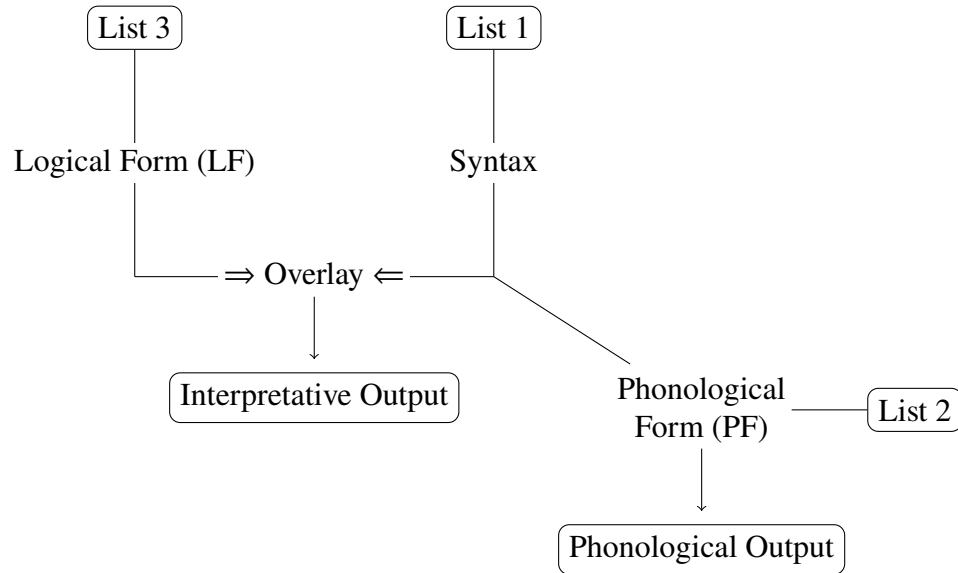
As a first step toward developing a model of grammar that accomplishes this perspective, I suggest a free generation approach of Merge for both adjuncts and DP arguments, in combination with “semantic filtering”, such that deviant structures are ruled out by LF. Ultimately, it may be that the most direct way to correctly model the relationship between meaning and structure is not within the traditional Y-model, *per se*, but with a variant model of the interfaces where LF and Syntax are built separately but in tandem, and must be able to be grammatically overlaid. I term this the Parallel Overlay Model— or the “W”-model, based on its shape— schematized below in (15).

(15) The Parallel Overlay Model (“W” Model)



In this model, the items of the three proposed lists of a Distributed Morphology-style Lexicon (List 1, grammatical feature bundles; List 2, Vocabulary Items; List 3, Encyclopedia) each partake in their respective modules. The model requires a direct one-to-one mapping between LF and Syntax (just as the Y-model does), but not because the Syntax feeds LF, but because LF and Syntax must be aligned in order for a derivation to converge. I leave open the possibility that PF remains ordered after LF and Syntax converge, as alternatively modeled in (16), but note that it is theoretically possible (and may have some advantages, given discussion in §2.4 on the consequences of loan vs. native morphology for the grammar) to model the relationship between Syntax and PF with the Parallel Overlay approach as well, as (15) does. Making a choice between these two hypothesized models requires deeper engagement with the rich literature on the PF interface (see, e.g., Harley & Noyer 1998; Embick & Noyer 2001; Embick 2010; Arregi & Nevins 2012; Idsardi & Raimy 2013; among many more), which I will not be able to do full justice to here.

(16) The Parallel Overlay Model: Alternative, PF remains ordered after Syntax



The perspective on the interaction of the Syntax and LF interfaces suggested in the Overlay Model (15) departs from long-held precedence within theoretical syntax, and as such requires a very careful and intricate process of empirical motivation. While the exact technical pieces of this perspective and all of its predictions require much further development, to be the focus of future research, at its core, the primary goal of this dissertation is to provide an empirical foundation which necessitates that the traditional selectional account of internal argument introduction be left behind. At minimum, the data and analysis presented in this work require a rigorous re-thinking of how the phrasal constituents of a sentence are formally composed with each other.

The dissertation proceeds in three steps, with a critical investigation of Sino-Korean loanwords and the construction of complex predicates in Korean. First, I disentangle internal arguments from the extended projection, via a dismantling of the associations between syntactic category and argument structural properties (Chapter 2). I argue

## Chapter 1 Introduction

that internal arguments, unlike external arguments, *cannot* be severed from the lexical predicate (Kratzer 1996; cf. Lohndal 2014), and are not introduced by a functional projection, of either the verbal or nominal domain. In fact, Sino-Korean loanwords empirically necessitate that acategorical syntactic entities—Roots—are themselves internal argument introducers (in line with the  $\sqrt{P}$  Hypothesis of Harley 2014). In fleshing out the morpho-syntactic consequences of this proposal, I argue that the underlying  $\sqrt{P}$  structure holds across both native and loanword predicates alike, and that argument-introducing Roots should be thought of as a universal, rather than exceptional, component of the grammar. I provide discussion of a number of post-syntactic tools currently available in the field and how they might be employed to account for the morpho-syntactic differences between native and loan AS-Nominals in Korean (including Distributed Morphology: Halle & Marantz 1993; Embick & Marantz 2008; Embick 2010; Kramer 2015; Allosemy: Wood 2023; Spanning: Svenonius 2012, 2016; Bye & Svenonius 2012; Merchant 2015), and note that in all cases, we must supplement PF with some means to rule out deviant syntactic structures.

We arrive, at the end of Chapter 2, with two empirical paradigms that can be used to address the deeper theoretical questions of interest on the nature of argument projection. The first are Sino-Korean loanwords, which, regardless of our exact formalization of the morphological component of the grammar, are exponents that must correspond directly to a terminal node that is a Root in the syntactic structure. Since these exponents target AS-Roots directly, this knowledge can be used to our advantage, to guide predictions about other argument structure phenomena in the Korean language. Whenever we locate a DP argument of a Sino-Korean loanword, we can be certain that that DP is an argument of a Root, and we can locate exactly where that Root is in the underlying

syntactic structure. The second empirical paradigm which proves useful to us are complex predicates, which, in Korean, divide into two types: ones that are transparently formed from argument-introducing Roots, and ones that are not.

Taking a closer look at this second type of complex predicate, which I ultimately analyze as classificatory incorporation (Mithun 1984; Borik & Gehrke 2015; Chung & Ladusaw 2004), leads us to the second major theoretical step in service of the dissertation's broader goal. In Chapter 3, I argue that syntactic argument projection, rather than being obligatory (as would be predicted by a selectional feature account), is in fact one of two possible routes for the syntactic realization of an internal argument. An empirical investigation of incorporation phenomena reveals that the semantic profile of being an argument-introducing predicate opts you into two possible structural realities: 1) direct saturation of the argument slot via syntactic realization of a DP argument; or 2) restrictive modification and existential closure of the argument variable. The result of this second option is a syntactically intransitive structure— I argue that even classificatory incorporation, which, in Korean, gives the surface illusion of transitivity, is still ultimately a structure that lacks the syntactic projection of the internal argument. In light of the empirical reality that having an argument-introducing predicate present in the syntactic structure does not necessitate syntactic introduction of said predicate's argument, I suggest that a selectional account of DP argument introduction fails to capture the relationship between syntactic non-realization of an IA and the corresponding interpretative effects at LF.

The final step of argumentation in this dissertation involves the dissolution of the strict requirement that an argument-introducing predicate must always correspond in the Syntax to a syntactic head (Chapter 4). Through a close empirical investigation of argument

## *Chapter 1 Introduction*

displacement phenomena— Sino-Korean loanwords in double accusative case constructions and their undeniable parallels to Korean external possession constructions— I argue that an argument-introducing predicate is not always exclusively syntactically realized as a head, but can, in the right environment, be realized as a maximal projection of a Root. I demonstrate empirically that syntactic introduction of a DP argument tracks the former (the syntactic location of constituents that denote argument-introducing predicates), not the latter (syntactic heads). Neither a raising nor a control account for Korean argument displacement constructions can adequately account for the data, leaving us with only one option in a post-Lexicalist framework: to posit that predicative  $\sqrt{P}$  modifiers are phrasal entities that, if they have an unsaturated argument variable in their denotation, will syntactically realize this argument as a specifier directly above their Merged position.

Unless explicitly stated as otherwise, all Korean examples presented in this dissertation come from my own data collection, conducted over the course of six years with a cumulative total of seven native Korean language consultants. I am immensely grateful to my Korean friends and colleagues for sharing their language with me. Any and all remaining errors are my own.

For ease of reference, all Korean data points can be found written in Hangul, the original orthography, in the [Appendix](#).

## Chapter 2

### Loanwords and the $\sqrt{P}$ Hypothesis

This chapter is concerned with identifying the syntactic entities which serve as internal argument introducers. I will argue, contra to Exo-Skeletal approaches and much current work within post-Lexicalist frameworks, that internal arguments, unlike external arguments, cannot be severed syntactically or semantically from the lexical predicate (Kratzer 1996; cf. Lohndal 2014), and are not introduced by a functional projection, of either the verbal or nominal domain. Instead, I will argue that the argument structural behavior of Sino-Korean loanwords, and the complex predicates built from them, require that Roots— the formal category-neutral units assumed in decompositional morphosyntactic theory (e.g., Pesetsky 1995; Marantz 1997; Borer 2003; Embick & Marantz 2008)— are themselves the entities responsible for the introduction of internal arguments, in line with the formal perspective outlined in Harley (2014).

What would an empirical argument in favor of this commitment look like? Harley (2014) is well-known for developing a perspective which argues for a treatment of Roots as syntactically individuated formal units, each indexed to semantic and phonological properties accessed at a later point in the derivation. Her grounds for this proposal

## Chapter 2 Loanwords and the $\sqrt{P}$ Hypothesis

come from phonological and semantic suppletive paradigms. On the one hand, Semitic templatic Roots (1) have a consistent phonological shape, but a wide variety of semantic uses, making it difficult to pinpoint a single articulated definition for the Root itself.

(1) Semitic Root  $\sqrt{sgr}$  with some of its idiosyncratic interpretations

- a. CaCaC (v)      *sagar*      v, ‘close’
- b. hitCaCCeC (v)    *histager*    v, ‘cocoon oneself’
- c. CoCCayim (n)    *sograyim*    n, ‘parentheses’
- d. miCCeCet (n)    *misgeret*    n, ‘frame’

(Harley 2014: 264)

On the other hand, Hiaki unaccusative Roots (2) exemplify the reverse paradigm, in which a Root with one reliable meaning has full phonological suppletion, realizing two different forms depending on object number. Hiaki suppletive verbs make it difficult to pinpoint a single underlying abstract phonological form for the Root itself.

(2) Some example Hiaki unaccusative verbs with full suppletion paradigms

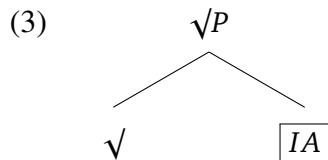
- a. *vuite* ~ *tenne*      ‘run.sg ~ run.pl’
- b. *siika* ~ *saka*      ‘go.sg ~ go.pl’
- c. *weama* ~ *rehte*    ‘wander.sg ~ wander.pl’
- d. *kivake* ~ *kiime*    ‘enter.sg ~ enter.pl’

(Harley 2014: 234)

Given that neither phonological nor semantic individuation proves sufficient for differentiation between Roots, Harley (2014) argues that a purely formal syntactic notion of Root identity is needed: she proposes that Roots are unique from each other given arbitrary indeces ( $\sqrt{2}$ ,  $\sqrt{31}$ ,  $\sqrt{874}$ , etc.), and that these syntactic units are mapped to

stored semantic and phonological information in the Encyclopedia and Vocabulary Lists, respectively (in a Distributed Morphology-style lexicon; Halle & Marantz 1993).

For Harley (2014) (and see related discussion in Cuervo 2014), the Hiaki suppletive verbs (2) provide empirical motivation for treating Roots as the introducers of internal arguments (IAs). Assuming suppletion to be a local operation (e.g., Bobaljik 2012), it must be the case that the IA, which conditions the suppletive forms in (2), exists in a strictly local relationship with the Root, such that the suppletive form is correctly selected during Vocabulary Insertion (Anderson 1992; Aronoff 1993; Beard 1995; Embick & Marantz 2008). The Harley (2014) structure for Hiaki verbs therefore utilizes the  $\sqrt{P}$ , exemplified in (3). Here, the Root, a syntactic head, projects a phrase and realizes its IA as its sister. I will refer to this structural proposal as the  $\sqrt{P}$  Hypothesis.



Many other contemporary works on predicate structure, however, have a different viewpoint on Roots, suggesting that Roots are not “full syntactic elements”. What this means, for these works, is that Roots, as abstract formal units in the grammar, are lacking some amount (or maybe all) of the properties canonically associated with syntactic heads. Many argue that Roots play no role in structural generation (Borer 2003, 2005a,b, 2013; Lohndal 2014) and cannot be direct introducers of complements (Alexiadou 2014; Merchant 2019), even requiring adjunction to a categorizing head in order to enter the syntactic derivation (Embick 2004; Embick & Marantz 2008; Embick 2015; Lohndal 2020). I refer to this perspective/set of perspectives as the *Deficient Root Hypothesis* (DRH). The characterization of Roots as “deficient” or “non-syntactic”

entities is a logically independent exploration of their formal notation which does not always interface directly with considerations of argument structure; for example, it would be possible to imagine a third view point, that Roots are fully fledged syntactic heads, but ones that do not select for any complements, and therefore always immediately project a maximal projection. Here, Roots could still be considered “syntactic entities”, but still claimed to lack the ability to introduce an argument. However, any account that *is* committed to some degree of Root “deficiency” corresponding to a lack of structural projection will, by extension, *require* that IAs are not syntactically introduced by Roots, because the DRH does not allow Roots to partake in structural generation.

Most alternative approaches to argument structure (AS) which take it to be the case that Roots are not argument-introducers assert instead that all thematic arguments are introduced by verbal functional projections (Borer 2013; Alexiadou & Lohndal 2017a,b; De Belder 2011; Lohndal 2014; Riksem 2018). This alternative perspective is largely driven on data from derived nominal paradigms in different languages. Only a restricted set of nominal phrases cross-linguistically can license thematic arguments corresponding to event participants, and the ones that do (AS-Nominals; Grimshaw 1990) have been found in many languages to grammatically license VP adverbs and VP anaphora, indicating that their AS properties correlate with independent syntactic evidence for verbal structure (Hazout 1995; Fu et al. 2001; Alexiadou 2001, 2009, 2010a,b). Restricting argument introduction to verbal functional heads effectively constrains the grammar such that only nominals containing embedded verbal structure will exhibit properties of AS, and only nominals which exhibit properties of AS will be diagnosed to contain embedded verbal structure.

The  $\sqrt{P}$  Hypothesis stands in direct opposition to DRH perspectives: if Roots can

syntactically introduce IAs, then they are capable of structural generation, and consequently cannot be ‘syntactically deficient’ elements<sup>1</sup>. The  $\sqrt{P}$  Hypothesis also makes the direct empirical prediction that the licensing of an internal argument should, in principle, be possible in the absence of verbal functional structure, and so proving the  $\sqrt{P}$  Hypothesis empirically, therefore, comes down to being able to isolate and justify the existence of an acategorical syntactic constituent that consists solely of the Root and its internal argument.

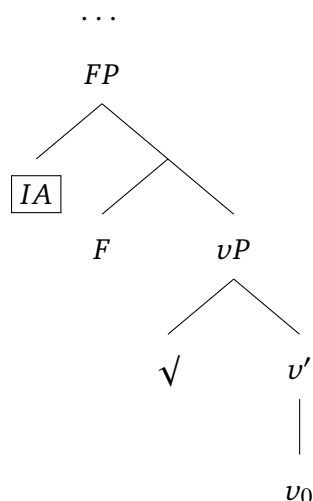
Harley (2014) argues for this constituent on the basis of suppletive paradigms, but, as Alexiadou (2014) points out, this argumentation is contingent on the identification of Spell-Out domains. Phonological suppletion provides evidence that the IA and the Root must, at some point, exist in a local syntactic relationship, but since Harley (2014) also suggests that the conditioning environment for Root suppletion must be up to VoiceP (given data on idioms), it is not strictly necessary for the IA to originate as a sister of the Root—there is another way to achieve suppletion-triggering locality, via head movement of the Root to an IA-introducing functional projection (4) (Alexiadou 2014; Alexiadou & Lohndal 2017b). In this alternative, the IA is introduced by a functional projection *F*, and a copy of the Root moves into *F* via head movement, at which point it enters into a sufficiently local relationship with the IA to trigger suppletion (4).

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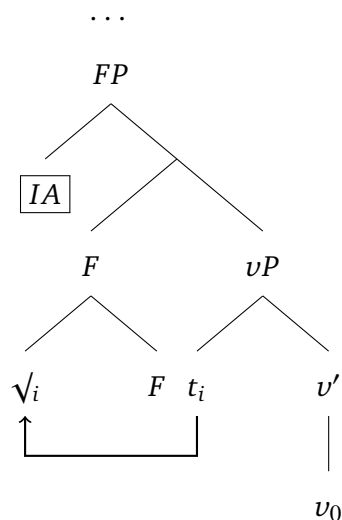
<sup>1</sup>Roots could still differ in meaningful ways from other syntactic heads, in terms of the grammatical features they bundle. But crucially, if they are argument introducers, then they are at least as “syntactic” as any other head that participates in structure building.

(4) Alternative structure with  $F$  (Alexiadou 2014; Alexiadou & Lohndal 2017b)

a.  $F$  introduces  $IA$



b. Move  $\sqrt{\phantom{x}}$  to  $F$



Thus, unless it can independently be proven that phonological conditioning and semantic conditioning are sensitive to independent Spell-Out Domains (phonological conditioning at the level of the  $\sqrt{P}$  or the categorizing head  $v_0$ , but semantic conditioning at Voice), suppletive verbs in Hiaki do not provide a strong enough empirical argument for the existence of the  $\sqrt{P}$  constituent.

The primary contribution of the present chapter is a novel empirical argument in favor of the  $\sqrt{P}$  Hypothesis, which crucially does not depend on independent hypotheses about Spell-Out domains. Rather, I arrive at the necessity of the  $\sqrt{P}$  through the decoupling of AS and syntactic categorization. DRH approaches require all argument-introducing elements to be verbal functional heads, while the  $\sqrt{P}$  makes the prediction that IAs can be licensed in non-verbal syntactic structures. Given that non-verbal AS-Nominals (nominal phrases with argument structure properties; Grimshaw 1990) have indeed been identified in Korean (Yoon & Park 2008), I show that it must be the case that these AS-

Nominals have a  $\sqrt{P}$  structure, in order to correctly capture different types of complex predicates in Korean, whose structures directly depend on whether they are built from Roots that do or do not have their own IA. Consequently, Roots are *not* “syntactically deficient” entities, but rather are fully functioning syntactic projections that can dictate whether they do or do not have an IA to introduce.

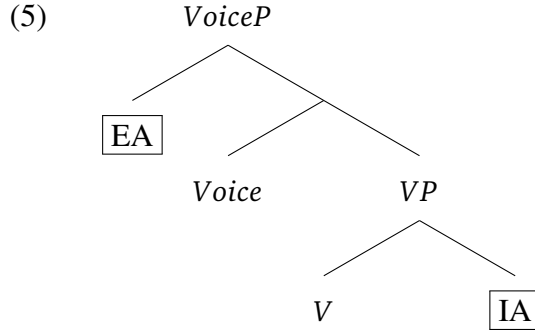
The first half of the chapter builds up the primary claim, that Roots are the syntactic introducers of internal arguments. Section §2.1 sets the stage through discussion of Kratzer (1996), outlining what we would predict, syntactically and semantically, if internal arguments (IAs) were to be structurally “severed” from the lexicon, and how this translates into a Post-Lexicalist framework. Section §2.2 characterizes the long-standing debate on whether AS involves verbal structure or not, and summarizes the upshots of Yoon & Park (2008), who demonstrate that there exist AS-nominals in Korean which categorically lack verbal structure, forcing the conclusion that AS properties are not contingent on verbal functional projections. Section §2.3 argues that it must be the Roots at the core of these non-verbal Korean AS-Nominals that are responsible for introducing the IA, first by ruling out all nominal functional projection alternatives, then through a comparison of these Roots in their complex predicate forms vs. other complex predicates that have the same overall grammatical/morphological profile, yet have different argument structural properties depending on the Root involved.

The final major section of the chapter addresses further questions in the face of the conclusion that the  $\sqrt{P}$  constituent exists: given that the  $\sqrt{P}$  is only diagnostically identifiable in loanword predicates, should Roots be thought of universally as the introducers of internal arguments, or should the  $\sqrt{P}$  instead be thought of as an exceptional structure only available to loanwords? In Section §2.4, I argue for the former perspective, that the

conclusions of §2.1–2.3 make universal predictions about the organization of argument structure in the grammar, and should not be thought of as exceptional structures simply because loanwords are involved. In fleshing out the consequences of this claim, I discuss the morphological surface paradigms of loanword vs. native Korean predicates, and to what extent contemporary tools of the post-syntactic morphological interface suffice in accounting for the data, given the commitment to the  $\sqrt{P}$  as the core constituent of all AS structures (regardless of the etymological status of the Root). Section §2.5 concludes, highlighting the main takeaways that carry into Chapters 3 and 4.

## § 2.1 How to sever an argument

Kratzer, in her influential 1996 article “Severing the External Argument from its Verb”, argues that an external argument should be thought of, not as an argument of V, but as an argument of a functional projection, which she names Voice. She builds on an empirical observation from Marantz (1984) noting an important *semantic* asymmetry between internal and external arguments: there are many instances where the choice of a particular internal argument (IA) will trigger a particular interpretation of the verb, but there are no instances where an external argument (EA) can do the same. Marantz (1984) argues that these facts follow if external arguments are not truly arguments of their verbs. Kratzer (1996) defends this claim, offering a solution that captures this generalization without breaking away from the fundamental hypothesis in formal semantic compositional theory that predicates and their arguments combine via Functional Application. Kratzer (1996) argues for the following syntactic structure of the verb phrase, for a simple transitive verb (5).



The Voice head and the VP semantically compose via a conjunction operation called Event Identification, given in (6), a name inspired by the Theta Identification operation of Higginbotham (1985).

(6) Given a function  $f$  of type  $\langle s, t \rangle$  and a function  $g$  of type  $\langle e, \langle s, t \rangle \rangle$ , where:

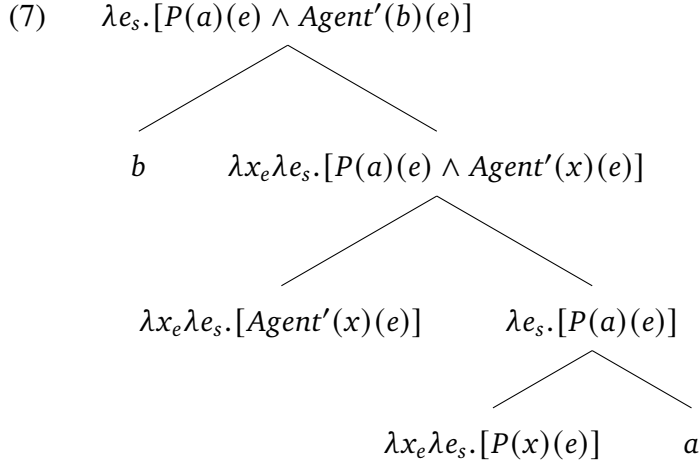
a.  $\llbracket f \rrbracket = \lambda e_s. [P(e)]$

b.  $\llbracket g \rrbracket = \lambda x_e \lambda e_s. [Q(x)(e)]$

Identifying  $f$  with  $g$  yields:

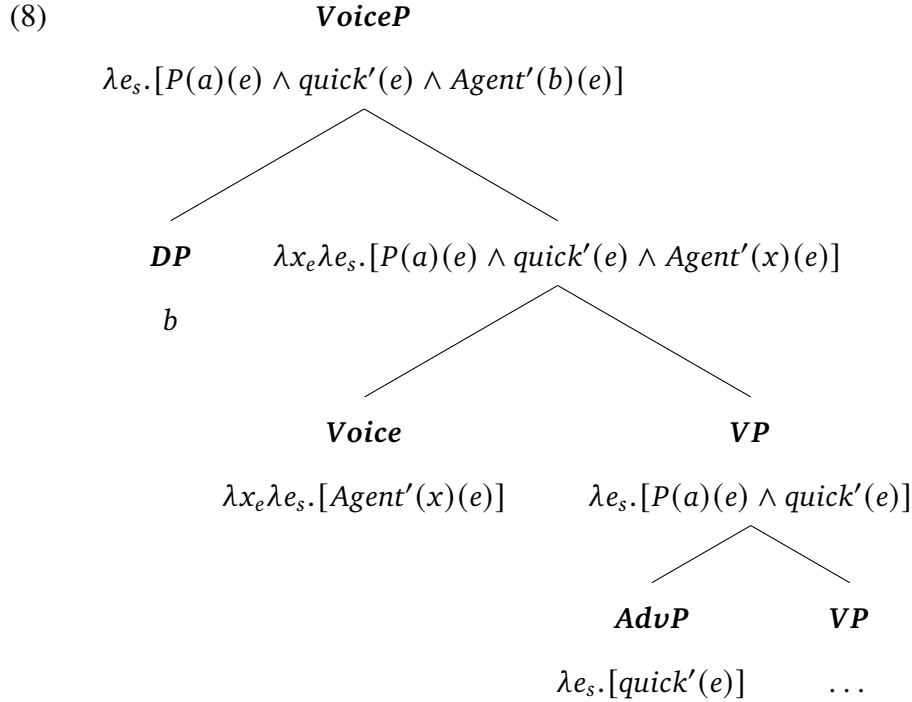
$$\text{IDENT}_{\text{EVENT}}(f, g) \equiv \lambda x_e \lambda e_s. [P(e) \wedge Q(x)(e)]$$

The syntactic structure of a transitive verb (5) corresponds to the Logical Form in (7), where the main verb is a predicate  $\lambda x \lambda e. [P(x)(e)]$  and the Voice head is a predicate  $\lambda x \lambda e. [\text{Agent}'(x)(e)]$ .



Event Identification “makes it possible to chain together various conditions for the event described by a sentence” (Kratzer 1996: 125). In Kratzer (1996)’s perspective, the only strict constraint about Voice in terms of where it absolutely must appear in the sequence of projections is that it cannot appear above existential quantification of the event argument, because existential closure would create a denotation to which Event Identification would be inapplicable. What this allows, in principle, is that the argument of Voice itself could appear in slightly different places in the structure, contingent on where Voice is merged. The Voice head could, for example, be added above an event modifier<sup>2</sup>, as in (8). In other words, the structural projection of the argument is strictly local to the structural position of the predicate that introduces it, and this holds true even if that predicate surfaces at a different height.

<sup>2</sup>The adverb in (8) composes with the structure via Predicate Modification (Heim & Kratzer 1998).



Kratzer (1996) was published at a time when researchers were independently identifying a growing number of consistent syntactic asymmetries between internal and external arguments, and leading toward the need for a head *above* V, which served the role of accusative Case assignment (see, e.g., Burzio 1986; Baker 1988; Hung 1988; Johnson 1991; Baker 1997). Not only did Kratzer (1996)’s account capture the intuitions of Marantz (1984), it also derived the other syntactic asymmetries that had been at the forefront of investigation. If Voice introduces the external argument, and assigns accusative Case, then a structure that lacks Voice will have only an internal argument, and this argument will be unable to receive accusative Case.

Beyond these impacts, Kratzer (1996)’s solution to the internal/external argument asymmetry also offers a concrete means of understanding the nature of the semantic notion of an “argument” as it pertains to the syntax. For one, as Kratzer herself

suggests in the final section of her article, the advent of Voice makes the notions of “external” and “internal” obsolete: these terms were used to differentiate between two arguments encoded in a lexical verb’s theta-grid and ensure the correct ordering of their syntactic height. But with Voice, an AGENT is no longer an “external” argument of the verb: instead, it is the “internal” argument of Voice (though the term “internal” is also unnecessary here, since Voice has just one argument). Kratzer (1996) predicts that all DP arguments are each respectively “internal” arguments of some predicate *P*, and their position in the syntactic structure will be determined by the position at which their introducing predicate projects: “the possible locations for arguments are now determined by the possible locations of the heads they are arguments of” (Kratzer 1996: 132).

Secondly, Kratzer (1996) makes a specific claim about the interplay between the syntax and the semantics of a predicate, embedded within a much broader research question about the extent to which the semantic structure of a predicate and its arguments is itself syntactically represented (Hale & Keyser 1993; Harley 1995). Kratzer (1996)’s analysis speaks directly to a distinction between classical Davidsonian and neo-Davidsonian approaches to event structural representation: specifically, she argues that the distinction between Davidsonian and neo-Davidsonian association of arguments to events in a verb’s conceptual structure has relevant consequences for a verb’s *syntactic* structure. Both approaches take as a starting point that verbs denote properties of some covert variable (Davidson 1967): the event argument. This event argument  $e_s$  is formally added to the semantic argument structure of an (eventive) verbal predicate, and, per Higginbotham (1985)’s implementation, there is some assumed structural mechanism for the binding of the event argument by a functional head, parallel to the treatment of noun

## §2.1 *How to sever an argument*

denotations as one-place predicates whose argument position is bound by a determiner (Truswell 2019). The classical Davidsonian account (Davidson 1967) represents the logical form of a verb— such as for example, the English verb *explore*— as a three-place predicate (9a), while a neo-Davidsonian account (Higginbotham 1985; Parsons 1990), though also representing a verb as a three-place predicate, treats arguments of the verb as conjoined modifiers of the event variable (9b).

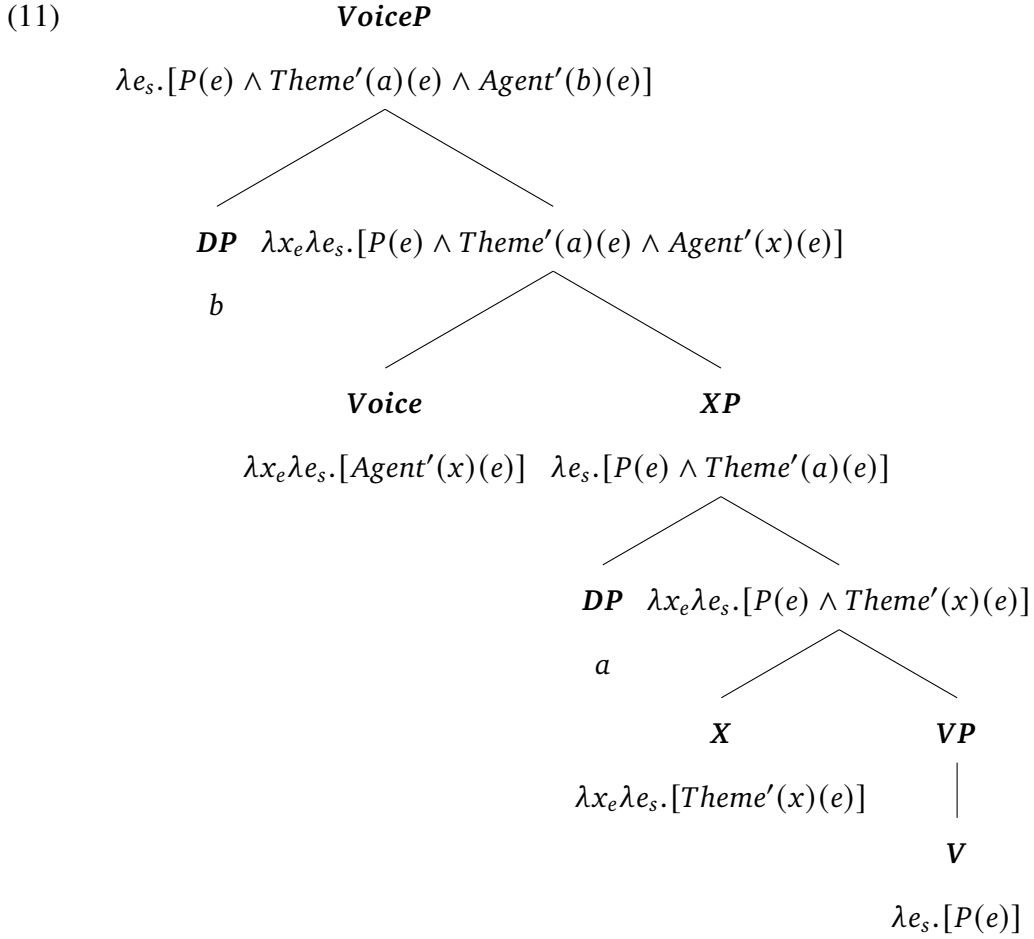
- (9) a.  $\llbracket \text{explore} \rrbracket = \lambda x_e \lambda y_e \lambda e_s. [\text{explore}'(x)(y)(e)]$   
 b.  $\llbracket \text{explore} \rrbracket = \lambda x_e \lambda y_e \lambda e_s. [\text{explore}'(e) \wedge \text{Theme}'(x)(e) \wedge \text{Agent}'(y)(e)]$

Kratzer (1996) argues that all external arguments are associated to the verb by the neo-Davidsonian method (9b) in the syntax: the EA is both syntactically *and* semantically severed from the verbal predicate. The lexical verb *explore*, then, under the Kratzerian view, is only a two-place predicate, either represented as (10a) or (10b).

- (10) a.  $\llbracket \text{explore} \rrbracket = \lambda x_e \lambda e_s. [\text{explore}'(x)(e)]$   
 b.  $\llbracket \text{explore} \rrbracket = \lambda x_e \lambda e_s. [\text{explore}'(e) \wedge \text{Theme}'(x)(e)]$

In her denotations, Kratzer (1996) opts to maintain a classical Davidsonian encoding of the IA, as in (10a), but it remains an empirical question as to whether an internal argument is also associated with the event variable in the neo-Davidsonian sense. If it is, we would predict this to have syntactic consequences, given the identified syntactic consequences of neo-Davidsonian association of the external argument. It would be reasonable to model this association in the same way, via a functional head that denotes a predicate  $\lambda x \lambda e. [\text{Theme}'(x)(e)]$  and composes with the main structure via Event Identification. This prediction is modeled in (11), where V simply denotes a one-place

predicate  $\lambda e.[P(e)]$  describing a property of events, and there is an IA-introducing functional projection above V but below Voice, arbitrarily labeled X.



In search for empirical motivation to posit the head X in (11), we should be looking for an empirical correlation between the syntactic licensing of an IA, and functional structure. For this, we turn to correlations with syntactic category.

## § 2.2 AS-Nominals and the issue of category

Syntacticians must be able to account for the fact that the predicate-argument relationship between *exploration* and *cave* in the bracketed phrase in (12a), and *explore* and *cave* in the bracketed phrase in (12b), is the same: both XP and YP make reference to an exploring event where the thing that underwent exploration is some particular cave.

- (12) a. the researcher's [<sub>XP</sub> exploration of the cave ]  
b. The researcher [<sub>YP</sub> explored the cave ].

The syntactic puzzle at the core of (12a–12b) is how and why the same argument is possible in both, realized in the same position (sister to the predicate)<sup>3</sup>, despite one being a noun phrase and the other a verbal one.

The history of work on derived nominals (like 12a), also referred to as nominalizations, spans decades of syntactic research (See Rozwadowska 2017 for a comprehensive overview). At its core, this investigation asks whether, when examining a nominal phrase that exhibits properties of AS (henceforth AS-Nominal), if these properties arise from the presence of verbal structural layers embedded inside of them or not. AS-Nominals have been central to the Lexicalist vs. Structuralist debate for precisely this reason: if AS is constructed in the Lexicon (e.g., utilizing a theta-grid), then a noun “exploration” inherits its arguments from an associated verb “explore”, but nonetheless generates a purely nominal structure (Aronoff 1976; Chomsky 1970; Giorgi & Longobardi 1991; Grimshaw 1990; Jackendoff 1975; Lieber 1980). If AS is constructed in the Syntax, however, then the structural elements that add arguments into a VP must be embedded

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<sup>3</sup>Abstracting away from the difference in constituent size of the complement in the nominal vs. verbal domains, PP vs. DP respectively.

## Chapter 2 Loanwords and the $\sqrt{P}$ Hypothesis

inside any nominal structure that also demonstrates AS properties (Alexiadou 2001; Alexiadou & Rathert 2010; Borer 2003, 2005a,b, 2013; Engelhardt 1998; Fu et al. 2001; Hazout 1995; Lohndal 2014, 2020).

The decompositional approach to predicate structure (advanced by the work of Larson 1988; Hale & Keyser 1993; Harley 1995; Kratzer 1996; Pesetsky 1995, among many others) leads one away from a strictly Lexicalist approach to both argument structure and morphological form: if, per our discussion of Kratzer (1996), the English verb “explore”, whose morphological form is not clearly decomposable (and seems to constitute some sort of unit we might call a “word”), nonetheless requires a syntactic representation involving *at least* two heads (Voice and V), it makes little sense to hold fast to a view of grammar that treats a “word” as a meaningful boundary between syntactic vs. non-syntactic operations. Post-Lexicalist approaches, such as Distributed Morphology (DM; Halle & Marantz 1993; Embick & Marantz 2008) and related enterprises (Borer 2005a,b, 2013; Starke 2009; Siddiqi 2010; Haspelmath 2011, 2020), take the terminal nodes of syntactic structure to be units *smaller* than words: they are instead grammatical primitives whose pronunciations are mapped by a post-syntactic module of the grammar, allowing for a degree of opacity between morphological surface form and underlying syntactic structure.

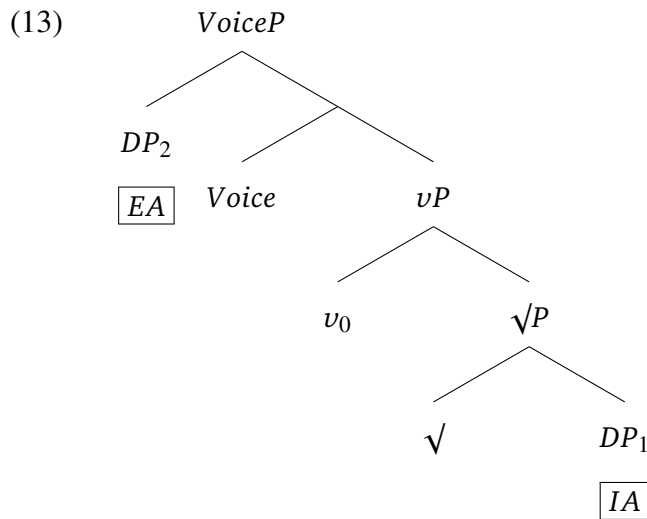
Post-Lexicalist approaches greatly reduce the power and complexity of the Lexicon, but even still, must locate the boundary where Syntax begins, i.e., by establishing the relevant features encoded by the grammatical primitives serving as the terminal nodes of the structure. Many do often realize a formal distinction between “lexical” or “content” morphemes (Roots) and functional morphemes (all other morphemes)<sup>4</sup>. The precise

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<sup>4</sup>In Distributed Morphology, a “morpheme” is an abstract formal unit that has an entry across the three lists (List 1: Feature bundles; List 2: Vocabulary items, and List 3: Encyclopedia).

characterization of Roots, though, can vary (Lohndal 2020). For example, while almost all Post-Lexicalist approaches take it to be the case that syntactic category is not a lexical property, and no longer encode category directly as a feature of a content morpheme, approaches are much more divided on whether argument introduction is a lexical or syntactic property.

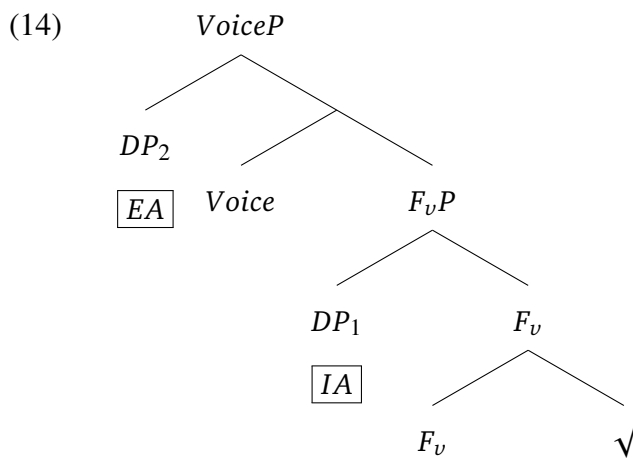
Possibility one is that content morphemes (Roots) are still the introducers of internal arguments— though we’ve separated out syntactic category, perhaps as a categorizing head  $v_0$ , the basic structure of a verbal predicate is still largely the same as Kratzer (1996)’s proposal. The only difference is the label of what was previously considered to be the lexical head V: instead, the lexical head that starts the structure is a Root (13), but this Root still denotes an argument-introducing predicate.



The first head above the Root is its categorizer,  $v_0$ , followed by the external argument introducing head, Voice. Here, just as in Kratzer (1996), the internal argument is not syntactically severed from the Root, and the Root has both a syntactic and semantic structural identity as the licenser of an argument. This is the perspective suggested in

early DM works (e.g., Marantz 1997) and developed and defended by Harley (2014).

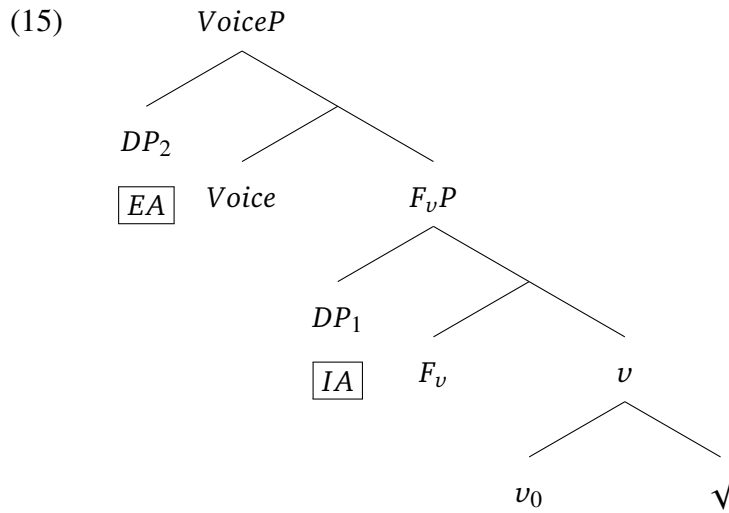
The second possibility is that there is a designated functional morpheme which introduces the internal argument. This approach is exemplified by the Exo-skeletal framework developed by Borer (2003, 2005a,b, 2013), and divorces the lexicon from argument structure entirely, taking argument structure to be purely syntactic, projected solely by functional heads. This perspective goes hand in hand with the *Deficient Root Hypothesis*, in aligning with the idea that Roots themselves are not fully fledged syntactic entities, rather are more like coordinates that simply serve as links between syntactic structure and interpretation. There is no such thing as a lexical vs. functional head distinction, in Borer’s account: there are only functional heads, and Roots are just “pure phonological” indices (*listemes*; Borer 2013, 2014) that adjoin to them. All arguments are syntactically severed (14): Voice introduces an EA, and a different verbal functional head (labeled neutrally as  $F_v$  in 14) introduces an IA <sup>5</sup>.



Borer (2013, 2014)— and see also De Belder (2011)— argues against the positing of

<sup>5</sup>Note that Borer uses different labels, given the set up of her system and its commitments; argument introducing functional heads are F-1, F-2, etc., and instead of the  $\sqrt{\phantom{x}}$ , the bottom part of the tree is labeled “L-D” for *lexical domain*, which is the result of merging a *listeme* (Borer 2005a).

heads that serve the purpose of categorizing (e.g.,  $v_0$ ,  $n_0$ ,  $a_0$ ). However, an account that assumes these, along with the commitment to all argument structure being projected by functional heads (Alexiadou 2014; Alexiadou & Lohndal 2017a,b; Embick 2004, 2015; Embick & Marantz 2008; Lohndal 2020), arrives at a structure like (15).



To empirically differentiate between the hypothesized structure (13) from those of (14) or (15), one must look for evidence that the licensing of an internal argument co-occurs with the presence of certain functional structure: namely, with *verbal* functional structure. Regardless of whether one assumes an overt categorizing head as in (15) or not, both (14–15) attribute internal argument introduction to a functional head of the verbal extended projection, and therefore make the clear empirical prediction that verbal functional structure is present whenever an internal argument is present. This leads us naturally to the investigation of argument structure within nominals, which is precisely the empirical landscape that Borer appeals to, in arguing for a severance of the internal argument in the Exo-Skeletal framework (Borer 2003, 2005b).

It has been found consistently in a number of languages, including Hebrew, Greek,

and English, that VP adverbs and VP anaphora are licensed in AS-Nominals, even when the nominal itself has an unambiguously nominal morphological form (i.e., surfacing with affixes that unambiguously mark them as nominal, thereby distinguishing it from a gerund). For example, both [Alexiadou \(2001\)](#) and [Hazout \(1995\)](#) use evidence of adverbial modifiers within nominalizations in Greek and Hebrew respectively to argue for a VP layer inside of an AS-Nominal. [Fu et al. \(2001\)](#) report the same for English, showing that English speakers find the presence of VP adverbs to be acceptable in AS-Nominals (16), but not in non-AS nominals (17).

- (16) a. His explanation of the accident thoroughly (did not help him).  
b. His transformation into a werewolf so rapidly was unnerving.
- (17) a. \* His version of the accident thoroughly (did not help him).  
b. ?? His metamorphosis into a werewolf so rapidly was unnerving.

([Fu et al. 2001](#): 555)

One way this generalization has been captured is in terms of the entailment relationships of VP properties ([Borer 2003](#); [Malouf 1998](#); [Yoon & Park 2008](#)). Sentential cases (e.g., nominative/accusative) are included in the set of structural properties associated with the VP, as a property that also entails the presence of thematic arguments (and therefore AS). Verbal structural properties entailing AS sets a strong expectation for co-occurrence such that AS and verbal structure will go hand in hand. However, to prove that AS is *exclusively* licensed by verbal functional structure, thereby ruling out (13), this entailment relationship must be symmetrical: Not only must verbal structure entail AS, AS must also entail verbal structure.

[Yoon & Park \(2008\)](#) falsify this prediction. They deal with AS-Nominals in Ko-

## §2.2 AS-Nominals and the issue of category

rean built from a class of vocabulary items often referred to as Verbal Nouns (VNs) in the Korean and Japanese syntax literature. The term *Verbal Noun*, similar to the terms *nominalization* and *derived nominal*, reflects a contentious back-and-forth about the correct category label and derivational history of these lexical items (Ahn 1992; Chae 1996, 1997; Jun 2003, 2006; Kim et al. 2007; Manning 1993; Pak 2001; Park 2013; Sells 1995; Yoon & Park 2008). Despite this shared history with derived nominals/nominalizations in Western linguistic literature, Yoon & Park (2008) critically show that, unlike AS-Nominals in English, Greek, and Hebrew, AS-Nominals built from Korean VNs categorically disallow verbal structural properties. They provide an example ruling out VP adverbials (18); (19–20) provide additional data points.

- (18) *mikwun-uy baghdad-ulo-uy sinsok-han/\*-hi cinkyek*  
 American.army-GEN Baghdad-to-GEN quick-ADJ/\*-ADV incursion  
 “American troops’ quick incursion into Baghdad” (Yoon & Park 2008: 235)
- (19) [ *ainsyuthain-uy ppal-un/\*-li pich-uy sokto(-uy) kyeysan* ]-un  
 [ Einstein-GEN quick-ADJ/\*-ADV light-GEN speed(-GEN) calculation ]-TOP  
 “Einstein’s quick calculation of the speed of light (. . . was impressive/etc.)”
- (20) [ *yenkwuwen-uy kkunhimeps-nun/\*-i tongkwul(-uy) thamkwu* ]-nun  
 [ researcher-GEN constant-ADJ/\*-ADV cave(GEN) explore ]-TOP  
 “The researcher’s constant exploration of the cave (. . . was tiring/etc.)”

Additionally noted by Yoon & Park (2008), genitive case (GEN) is the only felicitous case marking available within AS-Nominals headed by VNs. Sentential cases nominative (NOM) and accusative (ACC) are impossible (21).

Chapter 2 Loanwords and the  $\sqrt{P}$  Hypothesis

- (21) [ *yenkwuwen-uy/\*-i*    *kkunhimeps-nun tongkwul(-uy/\*-ul) thamkwu* ]-*nun*  
 [ researcher-GEN/\*-NOM constant-ADJ    cave(-GEN/\*-ACC) explore ]-TOP  
 “The researcher’s constant exploration of the cave (. . . was tiring/etc.)”

Yoon & Park (2008) further confirm that these AS-Nominals, despite lacking the ability to license VP adverbials and sentential case marking, still satisfy all of the longstanding diagnostics for AS from Grimshaw (1990), which target the event structure (ES) (Aktionsart; Vendler 1967) of the process denoted by the phrasal head. For example, (22) demonstrates licensing of agent-oriented modifiers, and (23) demonstrates licensing of temporal modifiers.

- (22) a. *chelswu-uy*    ***uytoceki-n***    *yenghi-eytayha-n*    *pinan*  
 Chelswu-GEN intentional-ADJ Yenghi-be.about-ADJ criticism  
 “Chelswu’s intentional criticism of Yenghi” (Yoon & Park 2008: 235)
- b. *sacang-uy* ***kyeyhwoekceki-n*** *cungke(-uy)*    *unphyey*  
 boss-GEN deliberate-ADJ evidence(-GEN) conceal  
 “the boss’ deliberate concealment of evidence”
- (23) a. *mikwun-uy*            ***sam.il***    ***tongan-uy*** *Baghdad(-uy)* *kongkyek*  
 American.army-GEN three.days during-GEN baghdad(-GEN) attack  
 “America’s attack on Baghdad for three days” (Yoon & Park 2008: 235)
- b. *yenkwuwen-uy* ***i.nyen***    ***tongan-uy***    *tongkwul(-uy)* *thamkwu*  
 researcher-GEN two.year duration-GEN cave(-GEN) explore  
 “the researcher’s exploration of the cave for two years”

These Korean AS-Nominals also license event modifiers, e.g., *frequent* and *constant*

### §2.3 Advocating for argument-introducing Roots

(24), and manner adjectives, such as *slow* or *quick* (25).

- (24) a. *cikwen-uy* ***cac-un*** *kongkum(-uy)* *hoynglyeng*  
 worker-GEN frequent-ADJ fund(-GEN) embezzle  
 “the worker’s frequent embezzlement of funds”
- b. *yenkwuwen-uy* ***kkunhimeps-nun*** *tongkwul(-uy)* *thamkwu*  
 researcher-GEN constant-ADJ cave(-GEN) explore  
 “the researcher’s constant exploration of the cave”
- (25) *ainsyuthain-uy* ***ppal-un/nuli-n*** *pich-uy* *sokto(-uy)* *kyeysan*  
 Einstein-GEN quick-ADJ/slow-ADJ light-GEN speed(-GEN) calculate  
 “Einstein’s quick/slow calculation of the speed of light”

Korean nominals built from VNs, then, are indeed argument-bearing nominals (per Grimshaw 1990’s diagnostics), but fail to license any properties associated with verbal structure. These AS-Nominals are fully non-verbal, and provide definitive proof that AS can exist in the absence of verbal structure.

## § 2.3 Advocating for argument-introducing Roots

If verbal structure does not drive AS in Korean AS-Nominals, then what does? I will argue that it is the Root. The findings of Yoon & Park (2008) reveal that nominal phrases built from Korean VNs fully lack verbal structure, and yet pass diagnostics for having AS. This means that the AS of these constructions cannot have a verbal source. Given this result, the label “VN” is truly a misnomer: as such, here and for the rest of the dissertation, I will refer to them instead as SKLs, short for “Sino-Korean loanwords”—

this term avoids attributing nominal or verbal associations to these items, while also acknowledging their etymological history as Sinitic borrowings<sup>6</sup>, a curious property that I return to in Section §2.4. In this section, I argue that what sets SKLs apart from other vocabulary items is that they are, in fact, pronunciations of argument-taking Roots (AS-Roots). This argumentation proceeds in two main steps: first, I empirically rule out a nominal functional alternative account of the licensing of an IA in SKL constructions. Second, I extend the empirical discussion to include complex predicates formed from non-SKLs, and find them to have different underlying argument structure, a difference that can only be attributed to the choice of Root. I interpret this data as evidence that the internal argument should *not* be severed from the lexical predicate, and I provide a formalism for this in Section §2.3.3, representing Roots as syntactic entities, individuated with formal indices (Harley 2014), and suggest that SKL Roots denote two-place predicates of type  $\langle e, \langle s, t \rangle \rangle$ .

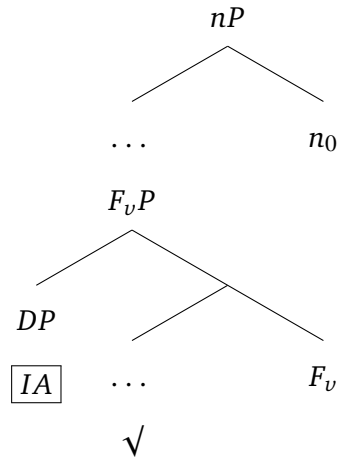
### **2.3.1 Against a nominal functional alternative**

Within a framework that assumes Roots, the specific structure ruled out by Yoon & Park (2008)’s contribution is one in which an internal argument of an SKL AS-Nominal is introduced by a verbal functional projection, as in (26).

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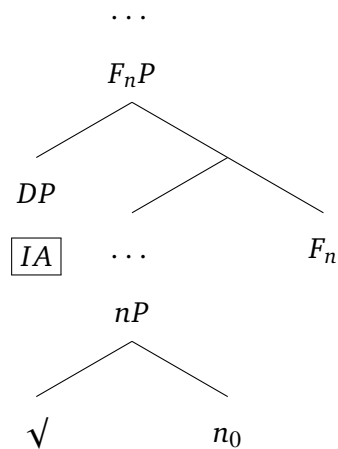
<sup>6</sup>Scholars estimate that 50–70 percent of Korean vocabulary may be Sino-Korean (He 2010; NAVER n.d.). The high number of Sino-Korean words in the language is due to extended cultural contact with China throughout Korea’s history, and the adoption of the traditional Chinese writing system at least as early as the Three Kingdoms period (approx. 18 BC – 668 AD; Taylor & Taylor 2014; Lee 1984), which was the sole literary system in Korea until the invention and publication of the modern Korean alphabet, Hangul, in 1446 under Joseon monarch King Sejong (Kim-Renaud 1997; Sohn 2006).

(26) \* Ruled out structure for SKL AS-Nominals



Crucially, what is impossible is an IA-introducing verbal projection embedded inside of the nominal. In attempting to, as much as possible, maintain the worldview of the Deficient Root Hypothesis (DRH), one might instead look to interpret the Korean facts from Yoon & Park (2008) as a unique phenomenon of SKLs, where *nominal* functional structure instead accomplishes argument introduction, e.g., (27).

(27) Nominal functional head ( $F_n$ ) introduces IA



Expanding the empirical landscape to consider SKLs and their argument realization in

sentential environments gives us the necessary data to prove that the nominal functional structure alternative sketched in (27) is untenable. I next turn to Korean light verb constructions (or, more neutrally, complex predicates), which famously involve SKLs<sup>7</sup> (Ahn 1992; Chae 1996, 1997; Grimshaw & Mester 1988; Jun 2003, 2006; J. R. Kim 1993; J. B. Kim et al. 2007; S. W. Kim 1994; Manning 1993; Miyamoto & Kishimoto 2016; Pak 2001; Park 1995; Sells 1995; J. H. S. Yoon 1990; J. M. Yoon 1997). If the IA of an SKL is licensed by a nominal functional head (27), and not by the Root, then, in other argument-licensing contexts where the same Roots are used, nominal structure should be diagnosable. Just as VP adverbials and sentential cases are reliable diagnostics for verbal functional structure, adjectival modifiers and nominal cases (i.e., genitive) are available as diagnostics for nominal functional structure.

SKLs are used extremely productively in light verb constructions— in fact, almost all literature on SKLs, sans Yoon & Park (2008), is primarily interested in investigating the interaction of SKLs with light verb morphemes to create complex predicates. Some basic examples are provided in (28). The morpheme *ha-*, which also lives a life as a main verb “do”, is the default form for all transitive complex predicates.

- (28) a. *ainsyuthain-i pich-uy sokto-lul kyeyesan-ha-yss-eyo*  
 Einstein-NOM light-GEN speed-ACC calculate-do-PST-DECL  
 “Einstein calculated the speed of light.”
- b. *cikwen-i kongkum-ul hoynglyeng-ha-yss-eyo*  
 worker-NOM fund-ACC embezzle-do-PST-DECL  
 “The worker embezzled the funds.”

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<sup>7</sup>Comparable phenomena are found in a number of languages beyond Korean as well, including Japanese, Mongolian, Hindi/Urdu, Persian, K’iche’, Chuj, and Zapotec (Butt 1995, 2010; Can Pixabaj & Aissen 2021; Mahajan 2012; Megerdumian 2012; Mohanan 2017; Özbek 2010).

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- c. *yenkwuwen-i tongkwul-ul **thamkwu-ha**-yss-eyo*  
researcher-NOM cave-ACC explore-do-PST-DECL  
“The researcher explored the cave.”

Unsurprisingly, given the fully non-verbal status of SKL AS-Nominals, this light verb morpheme is required in order to generate a grammatical verbal predicate with an SKL (29), which follows straightforwardly from the understanding that SKLs are, on their own, incapable of generating verbal structure.

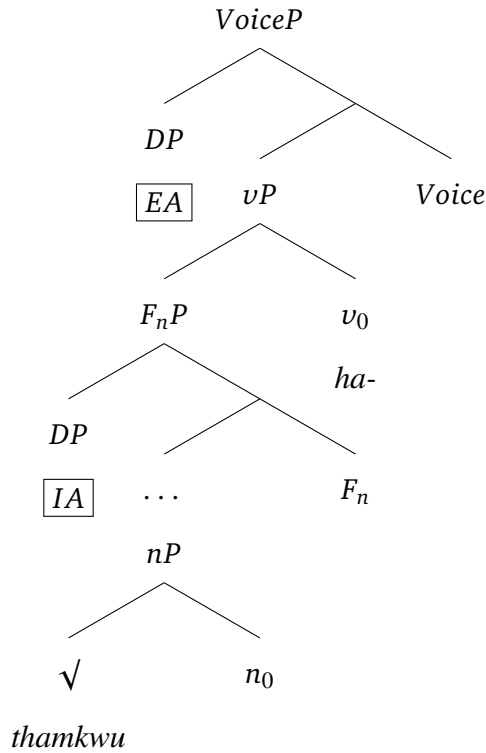
- (29) \* *ainsyuthain-i pich-uy sokto-lul **kyeysan**-ess-eyo*  
Einstein-NOM light-GEN speed-ACC calculate-PST-DECL  
Intended: “Einstein calculated the speed of light.”

Though a light verb effectively combines with an SKL to create a verbal predicate, it cannot be the presence of the light verb itself that creates the correct conditions for licensing of the IA, since the same IA is independently license-able in a fully nominal structure (Yoon & Park 2008). For complex predicate constructions like (28), then, defendants of the DRH need to assume that some nominal functional projection ( $F_n$ ) introduces the IA (30)<sup>8</sup>.

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<sup>8</sup>I am not committed to *ha-* being the pronunciation of  $v_0$ , but do so here for simplicity, since this would be inline with the DRH commitments.

- (30) Possible AS for SKL complex predicates: IA is introduced by  $F_n$



This structure treats the SKL as a complement to the light verb, and could even be supplemented with a noun-incorporation analysis, having *thamkwu* move via head movement to incorporate into the light verb, to get the morphological surface form correct. Noun incorporation is, in fact, a common analysis of SKLs when they show up in complex predicate constructions (see, e.g., [Grimshaw & Mester 1988](#)). Though, note that the structure in (30) is conceptually at odds with syntactic characterizations of noun incorporation, which typically take the incorporee to be structurally deficient, i.e. lacking nominal functional structure ([Borik & Gehrke 2015](#); [Chung & Ladusaw 2021](#)). Further, the commitment to underlying nominal functional structure is not borne out empirically. In a complex predicate construction, adjectival modification of the SKL is

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fully impossible (31), and so is genitive case (32).

- (31) a. *yenkwuwen-i tongkwul-ul kkunhimeps-i/\*-nun thamkwu-ha-yss-eyo*  
 researcher-NOM cave-ACC constant-ADV/\*-ADJ explore-do-PST-DECL  
 “The researcher tirelessly/continuously explored the cave.”
- b. *cikwen-i kongkum-ul ppalu-key/\*-un hoynglyeng-ha-yss-eyo*  
 worker-NOM fund-ACC quick-ADV/\*-ADJ embezzle-do-PST-DECL  
 “The worker quickly embezzled the funds.”
- (32) a. *yenkwuwen-i/\*-uy tongkwul(-ul/\*-uy) thamkwu-ha-yss-eyo*  
 researcher-NOM/\*-GEN cave(-ACC/\*-GEN) explore-do-PST-DECL  
 “The researcher explored the cave.”
- b. *cikwen-i/\*-uy kongkum(-ul/\*-uy) hoynglyeng-ha-yss-eyo*  
 worker-NOM/\*-GEN fund(-ACC/\*-GEN) embezzle-do-PST-DECL  
 “The worker embezzled the funds.”

The inability to license adjectival modifiers and genitive case, properties of the nominal domain, means that nominal functional structure is absent from SKL complex predicates.

As further evidence against (30), the light verb morpheme *ha-* in Korean can be shown to compose with Roots directly, not with nouns. Though *ha-* combines with many items that live separate lives heading nominal phrases, it also combines with items that, crucially, *must* be Roots. This is most transparent in mimetic/onomatopoetic descriptive predicates, such as the examples in (33–35). Mimetic Roots can combine with *ha-* to create descriptive predicates, as shown in the (a) examples, and can also combine with nominalizing suffixes to create referential nouns, shown in the (b) examples.

Chapter 2 Loanwords and the  $\sqrt{P}$  Hypothesis

- (33) *mallang(mallang)*, the sound/notion of squishi-ness
- a. *mallang(mallang)-ha-*     $\sqrt{\text{squishy-do-}}$     “to be squishy”
  - b. *mallang-i*     $\sqrt{\text{squishy-NMLZ.DIM}}$     “(a) Squishy”
- (34) *yaong(yaong)*, the “meow” sound that a cat makes
- a. *yaong(yaong)-ha-*     $\sqrt{\text{meow-do-}}$     “to meow”
  - b. *yaong-i*     $\sqrt{\text{meow-NMLZ.DIM}}$     “(a) kitty cat”
- (35) *kaykwul(kaykwul)*, the “ribbet” sound that a frog makes
- a. *kaykwul(kaykwul)-ha-*     $\sqrt{\text{croak-do-}}$     “to croak/ribbet”
  - b. *kaykwul-i*     $\sqrt{\text{croak-NMLZ.DIM}}$     “a frog”

Crucially, mimetic Roots cannot live independent lives as nominals on their own, even if the intended referent of the nominal is the sound/notion itself (36).

- (36) a. \* (*kaykwuli-tul-uy*) *kaykwulkaykwul-i tul-li-yss-eyo*  
           (frog-PL-GEN)    croak.croak-NOM    hear-PASS-PST-DECL  
           Intended: “A (frogs’) croak was heard.”
- b. (*kaykwuli-tul-i*) *kaykwulkaykwul-ha-nun soli-ka tul-li-yss-eyo*  
           (frog-PL-NOM)    croak.croak-do-ADJ    sound-NOM hear-PASS-PST-DECL  
           “The sound of frogs croaking was heard.”

In sum, given the absence of nominal structure (31–32), and additional evidence that *ha-* creates complex predicates with items that are unambiguously Roots (33–36), there are no empirical grounds to posit a nominal functional layer in the composition of an SKL complex predicate. None of this rules out the possibility for head movement of the Root to the node expounded by the light verb morpheme, which, in a certain sense, would be not unlike the characterization of incorporation as head movement (Baker 1988, 2009;

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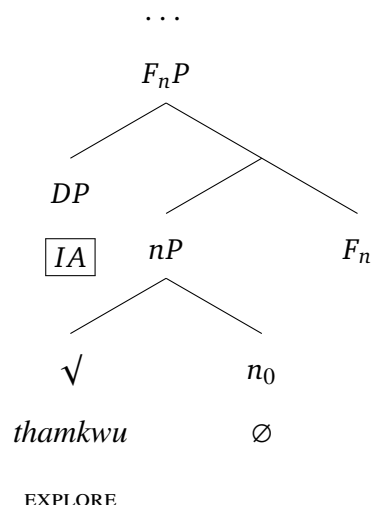
Hale & Keyser 1993; Travis 1984), but, crucially, would not require nominal functional structure. Conceptually, the idea that *ha-* composes with a  $\sqrt{(P)}$  directly, therefore lending it an incorporation-like characterization, would also provide an explanation for why noun incorporation is so often characterized as involving a “bare noun” or nominal that is lacking structure in some way (Johns 2017; see also Johns 2007 for a treatment of some instances of incorporation as a light verb combining with a  $\sqrt{P}$ ). We will return to these intuitions about the syntactic identity of an incorporee in Chapter 3.

In SKL AS-Nominals and complex predicates, neither nominal or verbal structure can be responsible for introducing the internal argument. If the necessary syntactic conditions for AS is not verbal structure, nor is it nominal structure, what is left? The only thing consistent across these constructions is the Root, i.e., the SKL itself. Therefore, it is the Root that creates the possible conditions for AS.

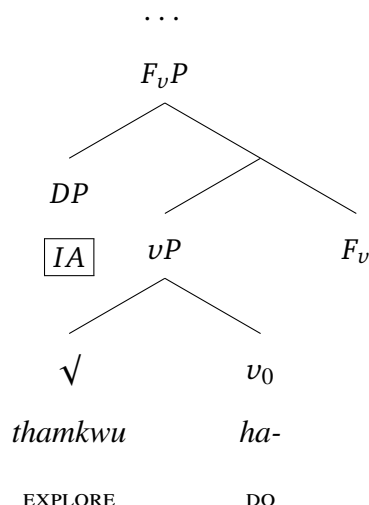
#### **2.3.2 Only some Roots introduce IAs**

A theory of AS that restricts argument introduction to only verbal functional projections is inadequate, and a theory of AS that utilizes an argument-introducing nominal functional projection for SKLs is also inadequate. Defendants of the DRH, in face of these outcomes, have no choice but to next suggest two different functional projections for IA-introduction, one that is a nominal flavor, and one that is a verbal flavor, and assert that both are used for SKLs (37). The nominal functional head would be used in crafting the AS-Nominal, and the verbal functional head would be used in crafting the complex predicate.

(37) a.  $F_n$  introduces IA



b.  $F_v$  introduces IA



Under this account, the only difference between the two structures is that in one, the Root composes with a fully nominal, argument-introducing structure, and in the other, with a fully verbal, argument-introducing structure.

This immediately creates an over-generation problem, especially under a fully Exo-skeletal approach where the Root truly has no ability at all in constraining the projections above it (e.g., Borer 2005a,b, 2013). If there is both a nominal means and a verbal means to include an IA, there is no reason why we shouldn't expect all types of nominals to be capable of AS. This is, of course, not borne out: it is well-established that the nominal domain is cross-linguistically more constrained in its argument-hosting capacities than the verbal domain (Abney 1987; Alexiadou 2001; Grimshaw 1990; Pesetsky 1995; Sichel 2010). Furthermore, there is a clear minimal comparison immediately available within Korean that empirically rules out (37): SKLs can be directly contrasted with other Roots that have the same environmental distribution, but are unable to introduce their own arguments, further showing that it is not the structural environment that a

## §2.3 Advocating for argument-introducing Roots

Root surfaces in which determines whether AS is available, but the Root itself. For example, consider the complex predicates in (38). In each, *ha-* combines with an item (*mal* and *nolay*, respectively) that can independently live a life as a nominal (39), the same as SKLs. These predicates also seem to be transitive, at least at first look, per the presence of an accusative (ACC)-marked phrase.

- (38) a. *namcwuni-ka mwuncang-ul khu-key mal-ha-yss-eyo*  
 Namjoon-NOM sentence-ACC big-ADV word-do-PST-DECL  
 “Namoon said (the) sentence loudly.”
- b. *ku kaswu-ka cayen-uy aluntawum-ul cacwu*  
 that singer-NOM nature-GEN beauty-ACC frequent.ADV  
*nolay-ha-yss-eyo*  
 song-do-PST-DECL  
 “That singer often sang of nature’s beauty.”
- (39) a. *i mwuncang-un mal-i manh-ayo*  
 this sentence-TOP word-NOM be.many-PRS.DECL  
 “This sentence has a lot of words.”
- b. *hanyengi-ka cohaha-nun nolay-ka latio-eyse hullenao-ass-eyo*  
 Hanyoung-NOM like-ADJ song-NOM radio-on flow.out-PST-DECL  
 “The song (that) Hanyoung likes played on the radio.”

The complex predicates *mal-ha-* and *nolay-ha-*, just as the complex predicates formed from SKLs, still fail diagnostics for nominal functional structure, passing only diagnostics for verbal functional structure. Only adverbials, and not adjectives, are grammatically licensed (40).

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- (40) a. \* *namcwuni-ka mwuncang-ul khu-n mal-ha-yss-eyo*  
 Namjoon-NOM sentence-ACC big-ADJ word-do-PST-DECL  
 “Namoon said (the) sentence loudly.”
- b. \* *ku kaswu-ka cayen-uy aluntawum-ul cac-un*  
 that singer-NOM nature-GEN beauty-ACC frequent-ADJ  
*nolay-ha-yss-eyo*  
 song-do-PST-DECL  
 “That singer often sang of nature’s beauty.”

Crucially, however, *mal* and *nolay* cannot create AS-Nominals (41)— they only have referential use. Even in one’s best efforts to force the nominal phrases in (41) to be interpretable, they can never pick out a singular event of “saying” or “singing”.

- (41) a. \* *namcwuni-uy cac-un mwuncang(-uy) mal*  
 Namjoon-GEN frequent-ADJ sentence(-GEN) word  
 Intended: “Namjoon’s frequent saying of sentence(s)”
- b. \* *kaswu-uy cac-un cayen-uy aluntawum nolay*  
 singer-GEN frequent-ADJ nature-GEN beauty song  
 Intended: “The singer’s frequent singing of nature’s beauty”

These examples in (41) demonstrate the failure of Grimshaw (1990)’s argument structure diagnostics for AS-Nominals, specifically an inability to license event modifiers like *frequent* or *constant*. They fail other diagnostics as well, such as the licensing of agent-oriented modifiers (42).

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(42) \* *namcwuni-uy kyeyhwoyk.cek.i-n mwuncang(-uy) mal*

Namjoon-GEN deliberate-ADJ sentence(-GEN) word

Intended: “Namjoon’s deliberate saying of sentences/a sentence”

In short, despite the total overlap in the syntactic environments that both SKLs and these referential-use only Roots occur in (complex predicates, nominals), we need a separate story for the argument structure of the complex predicates in (38). It matters which Root serves as the base. The IA licensed in a structure containing an SKL is unique to that SKL: SKLs have AS properties because they are pronunciations of argument-introducing Roots (AS-Roots). Items like *mal* and *nolay*, on the other hand, are pronunciations of Roots that do not have any arguments to introduce (non-AS Roots). Intriguingly, the examples in (38) also reveal that not every single nominal phrase that we see surfacing with accusative case has the same argument status. There is some alternative means by which an accusative-marked phrase is possible in sentences involving predicates created from non-AS Roots. We will return to this observation in much greater detail in Chapter 3. No such means exists within the nominal domain, hence the ungrammaticality of (41).

Minimally, accusative case is not a full-proof indicator that we are dealing with an internal argument of the Root. At present, it is enough to have the descriptive generalization, that there are two types of accusative-marked phrases (henceforth ACC-phrases): ones that we can trace to being an internal argument of the Root, and ones that are licensed by some other means, only possible in the verbal domain. Beyond being different with regard to the functional domain they are associated with, these two types of ACC-marked constituents are predicted to differ in the structural height of their

base-generated positions: specifically, the ACC-phrases that are exclusive to the verbal domain should have a structurally *higher* originating position than IAs of Roots.

Differential object marking (DOM; Bossong 1985, 1991; Aissen 2003) provides us the means to empirically prove that these two distinct base positions are diagnosable and structurally distinct. Though Korean does not have DOM fully grammaticalized as a categorical distinction between objects (in contrast to languages like Turkish, e.g. Enç 1991; Öztürk 2005), DOM has still been identified and investigated in Korean by a number of researchers (Chung 2020; Kim 2008; Ko 2000; Kwon & Zribi-Hertz 2008; Lee 2005, 2006a,b, 2015), and can be shown to have a consistent and systematic syntactic signature. In Korean, there are two possible positions for a direct object to appear in the linear string: either directly adjacent to its introducer (43a), or preceding modification (43b). Optionality of case marking on the IA is determined by position: when directly adjacent to the predicate (43a), case is optional, and can readily be dropped. If, however, the IA precedes a modifier (43b), case is then much harder to elide: without strong inherent notions of definiteness, specificity and/or animacy, case on the IA in this position is obligatory<sup>9</sup>.

- (43) a. *cikwen-i cacwu kongkum(-ul) hoynglyeng-ha-yss-eyo*  
 worker-NOM frequently fund(-ACC) embezzle-do-PST-DECL  
 “The worker frequently embezzled (the) funds.”
- b. *cikwen-i kongkum\*(-ul) cacwu hoynglyeng-ha-yss-eyo*  
 worker-NOM fund\*(-ACC) frequently embezzle-do-PST-DECL  
 “The worker frequently embezzled the funds.”

<sup>9</sup>Some speakers find it possible to leave off ACC in this position (43b) with the right context, given an IA that is highly animate, definite, specific, etc. (for example, a proper name). This is still distinct from the behavior of case marking in the predicate-adjacent position (43a), where case drop is *always* possible.

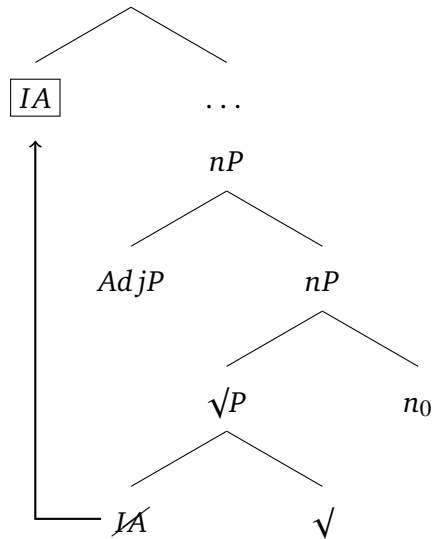
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Strikingly, we observe the exact same pattern in the nominal domain, for AS-Nominals created from SKLs. IAs can occur either directly adjacent to the phrase head (44a), in which case genitive case is optional, and even dispreferred for many speakers. If, however, the IA precedes a modifier (44b), genitive case is obligatory.

- (44) a. *cikwen-uy cac-un kongkum(-uy) hoynglyeng*  
 worker-GEN frequent-ADJ fund(-GEN) embezzle  
 “the worker’s frequent embezzlement of (the) funds”
- b. *cikwen-uy kongkum\*(-uy) cac-un hoynglyeng*  
 worker-GEN fund\*(-GEN) frequent-ADJ embezzle  
 “the worker’s frequent embezzlement of the funds”

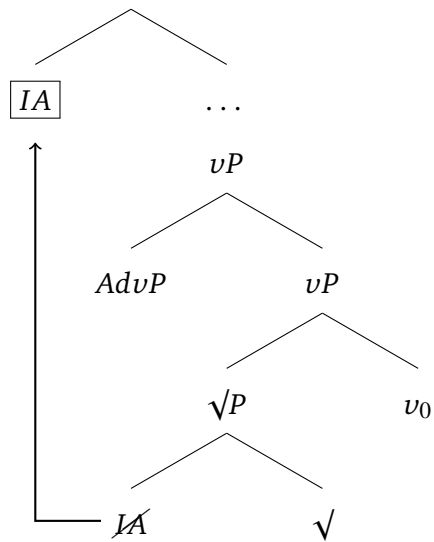
The overlap in DOM behavior in both the nominal and verbal domain is fascinating, as it suggests some similarity in the case-assignment algorithm of both GEN and ACC in Korean. While this will be discussed in greater detail in Chapter 4 (in particular, §4.5), what we must minimally conclude from the DOM facts of Korean is that GEN and ACC are correlated with movement: object shift feeds GEN case assignment in the nominal domain, and feeds ACC case assignment in the verbal domain. The intervening modifier serves to disambiguate the location of the IA. If preceding an adjectival modifier, the IA must be sitting somewhere in the nominal extended projection, having moved out of its base-generated position and past the modifier (45).

(45)



The same is true for the verbal domain: if an *IA* precedes an adverbial modifier, it must have moved out of its base-generated position and past said modifier, and is now sitting somewhere within the verbal extended projection (46).

(46)



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This results in a characterization of case assignment in line with what others have asserted for DOM (e.g., Massam 2001; see discussion in Poole 2023 and citations therein), namely that, in a DOM language, the VP blocks case assignment: an object must move beyond the VP in order to receive case. What the parallel between nominal and verbal domains in Korean contributes is a more general claim about the relevant domain that blocks case assignment: it is not a VP that blocks case assignment, but a  $\sqrt{P}$ . An internal argument must leave the  $\sqrt{P}$  constituent in order to receive case. Note that I intentionally state this generalization theory-neutrally, not committing to either a Case-as-Agree perspective (Chomsky 2000, 2001) nor a Dependent Case Theory perspective (Marantz 1991; Bittner & Hale 1996; Baker 2014) here. What is important, for the purposes of this chapter, is that DOM provides us evidence for two distinct structural positions of the IA that differ in height: the position preceding the modifier is a structurally higher one, where the IA is unambiguously licensed within the verbal or nominal domain, respectively. The position directly adjacent to the SKL (43a, 44a) maps the IA to a low position that is, crucially, lower in the structure than *any domain-specific structural elements*. In other words, the low position is sister to the Root.

It follows that, if DOM picks out two structural positions, one of which is sister to the Root, then when turning to complex predicates which involve non-AS Roots (e.g., *mal-ha-*, *nolay-ha-*), differential object marking should be disallowed. Non-AS Roots are predicted to not have a sister (since they cannot introduce any arguments), and so the low position, where an IA could surface optionally bare for case, is predicted to be unavailable. This is exactly what we find when we investigate accusative case in non-AS Root complex predicates. When it comes to the ACC-phrases that surface with these non-AS Root predicates, accusative case is obligatory regardless of whether the phrase

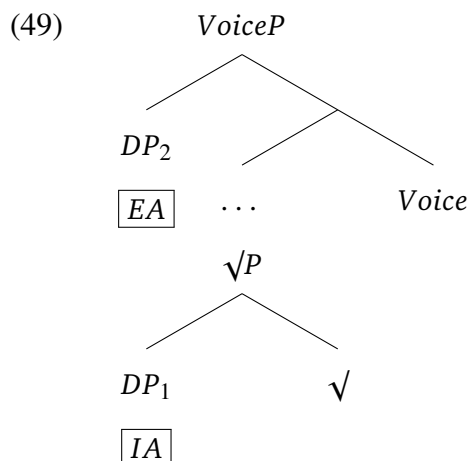
follows (47) or precedes (48) the adverbial modifier. DOM in the nominal domain for non-AS Roots is, of course, not testable, since non-AS Roots cannot create AS-Nominal constructions.

- (47) a. *namcwuni-ka khu-key mwuncang\*(-ul) mal-ha-yss-ta*  
 Namjoon-NOM big-ADV sentence\*(-ACC) word-do-PST-DECL  
 “Namjoon said (the/a) sentence loudly.”
- b. *kaswu-ka cacwu cayen-uy aluntawum\*(-ul) nolay-ha-yss-eyo*  
 singer-NOM frequently nature-GEN beauty\*(-ACC) sing-do-PST-DECL  
 “The singer often sang of nature’s beauty.”
- (48) a. *namcwuni-ka mwuncang\*(-ul) khu-key mal-ha-yss-eyo*  
 Namjoon-NOM sentence\*(-ACC) big-ADV word-do-PST-DECL  
 “Namjoon said (the/a) sentence loudly.”
- b. *kaswu-ka cayen-uy aluntawum\*(-ul) cacwu nolay-ha-yss-eyo*  
 singer-NOM nature-GEN beauty\*(-ACC) frequently sing-do-PST-DECL  
 “The singer often sang of nature’s beauty.”

The obligatory-ness of case for these ACC-phrases regardless of position follows from the fact that they are NOT arguments of the Root. The lower position is fully unavailable, and this is the only position where case can be optional. Regardless of the formal theory of case we adopt to explain Korean DOM, from the structural perspective, we must conclude from these data that the structures built from AS-Roots have more space: the internal argument can originate as a sister to the Root that introduces it, and can optionally surface higher. Non-AS Roots cannot introduce an argument, and so will never be able to generate a DP within the  $\sqrt{P}$  as their syntactic sister.

### 2.3.3 Representing Roots as lexical predicates

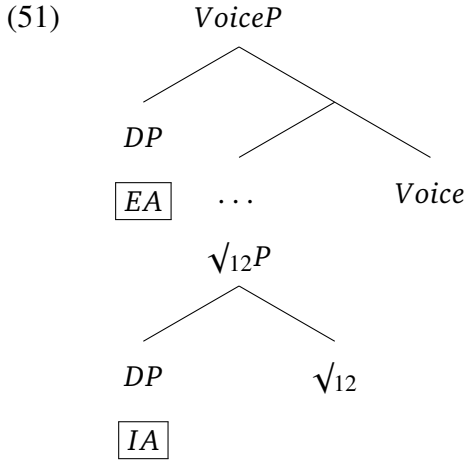
The investigation of Korean AS-Nominals, complex predicates, and the Roots at their core, have revealed that internal arguments are introduced by Roots, not by functional projections. This result requires the adoption of the  $\sqrt{P}$  Hypothesis. Roots cannot be syntactically deficient elements as the Deficient Root Hypothesis (DRH) posits, but rather, Roots are fully fledged syntactic entities that project and introduce their own arguments. In other words, we have (49), as the basic structure of a transitive verb phrase made from a Sino-Korean Loanword (SKL)<sup>10</sup>.



Adopting the DM framework laid out in Harley (2014), each syntactic terminal that is a Root has an arbitrary index, serving to formally individuate it from other Roots. Take, for example,  $\sqrt{12}$  to be the grammatical feature bundle stored in List 1 for the SKL *thamkwu* (“explore”). We would posit (51) as the underlying predicate structure for the verb phrase in (50).

<sup>10</sup>I use the ellipses in (49) to remain neutral about the presence or absence of a categorizing head  $v_0$ —we will address this question shortly.

- (50)    *yenkwuwen-i    tongkwul-ul thamkwu-ha-yss-eyo*  
          researcher-NOM cave-ACC    explore-do-PST-DECL  
          “The researcher explored the cave.”



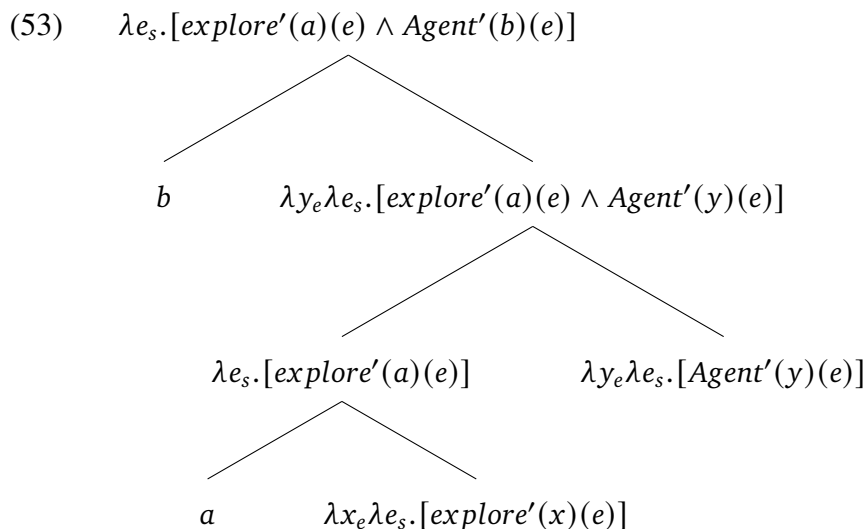
The upshot of our exploration of the syntactic properties of SKLs is the *absence* of correlation between functional structure and the licensing of an internal argument. In fact, we saw that the availability of an internal argument was directly dependent on the Root, *not* on the syntactic category of the extended projection built above it. As such, we have evidence against severing the internal argument structurally, to use [Kratzer \(1996\)](#)’s terminology. The denotation of  $\sqrt{12}$  in LF, for example, would be the two-place predicate given in (52), represented with classical Davidsonian semantics. The variable  $x$  represents the internal argument, while  $e$  represents the event argument.

$$(52) \quad \llbracket \sqrt{12} \rrbracket = \lambda x_e \lambda e_s. [\text{explore}'(x)(e)]$$

The corresponding LF structure to (51) would be (53). The predicate denoted by  $\sqrt{12}$  composes with its argument (represented as a constant  $a$ ) via Function Application; the Voice head composes with the resulting  $\sqrt{P}$  structure via Event Identification, and then

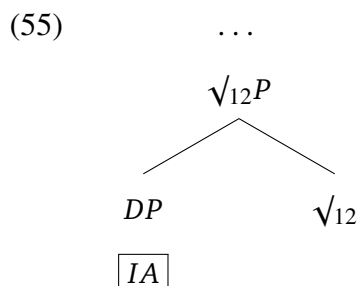
### §2.3 Advocating for argument-introducing Roots

composes with its own argument (represented as a constant  $b$ ) via Function Application.



When it comes to the AS-Nominal construction, I assume that the structural base is the same. For example, the initial constituent at the base of the AS-Nominal in (54) contains the exact same  $\sqrt{P}$  constituent as its verbal counterpart in (51), given in (55).

- (54) *yenkwuwen-uy tongkwul(-uy) thamkwu*  
 researcher-GEN cave(-GEN) explore  
 “the researcher’s exploration of the cave”



As for the external argument of an SKL AS-Nominal, I assume, following much prior work (Grimshaw 1990; Pesetsky 1995; Marantz 1997; Harley & Noyer 1998;

Folli & Harley 2005; Sichel 2010; Alexiadou et al. 2015), that the licensing of an external argument in an AS-Nominal is sensitive to different restrictions than an external argument of the verbal domain. Minimally, this is borne out from my account, in that I do not posit an embedded Voice head within the AS-Nominal construction. There are two options when it comes to licensing an external argument within the nominal domain, both of which have been argued for in the literature: representing the external argument as an adjunct (Rappaport 1983; Dowty 1989; Grimshaw 1990; Kratzer 1996; Fox & Grodzinsky 1998; Alexiadou 2001), or representing it as an argument (Roeper 1987, 1993, 2004; Longobardi 2001; Sichel 2009). I don't make a choice here, but what is crucial for my account, is that whatever method (adjunction, or by functional projection) by which an external argument is licensed in a nominal, it must be a method that is unique to the nominal extended functional projection, because SKL AS-Nominals can never have embedded verbal functional heads. If it is an adjunct, it is an adnominal adjunct; if it is an argument of a functional projection, that functional projection is one that belongs to the nominal extended projection (maybe Poss, or D).

### 2.3.4 On categorizing heads

In closing out this section, before turning to some critical questions about the loanword status of SKLs, I wish to make some remarks about the upshots of the  $\sqrt{P}$ , in particular with respect to our commitments about the role of categorizing heads in the Syntax. I've argued that SKL Roots provide empirical evidence in favor of the  $\sqrt{P}$  Hypothesis (Harley 2014). Toward the beginning of this chapter, I contrasted the  $\sqrt{P}$  Hypothesis with the *Deficient Root Hypothesis* (DRH), an umbrella term used to refer broadly to a set of accounts that assert that Roots are "deficient" in some way. SKLs empirically

### §2.3 *Advocating for argument-introducing Roots*

disprove the most drastic version of the DRH, as we have evidence that the choice of Root impacts the course of the syntactic derivation, in particular with regard to whether or not an internal argument is licensed.

Within the DM literature, there is a common idea that Roots are always categorized by categorizing functional heads ( $n_0$ ,  $\nu_0$ ,  $a_0$ , etc.), which coincides with a hypothesis that the first head of the extended verbal projection is  $\nu_0$ , and the first head of the nominal domain is  $n_0$ . This perspective often goes hand in hand with the “deficient Roots” idea, since one can then claim a link between Root “deficiency” and the need for a categorizing head as the lowest head in the extended projection. Note, however, that these two claims can be logically disentangled: it is possible to work within a framework where Roots are syntactic heads and can take complements, while also being obligatorily selected for by categorizing heads (e.g., [Marantz 1997, 2007](#); [Embick 2010](#)). It is also possible to work within a framework where Roots are “deficient” and play no role in constraining the Syntax, while also asserting that categorizing heads do not exist, and that the notion of “category” that we associate with a particular exponent of a Root is the result of a contextual calculus, based on the structure that the Root has indexed itself to (e.g., [Borer 2013, 2014](#)). I wish to consider a third possible perspective here as well, where Roots are proper syntactic terminals, but category is contextually determined, rather than represented via functional categorizing heads.

Within the works that also accept Roots as full syntactic terminals, the primary motivation for requiring Roots to compose with categorizing heads is, rather than anything about the needs of a Root itself, rather an attempt to resolve some of the issues of inner vs. outer domain morphology, that any non-Lexicalist approach which strictly orders morphology after syntax must contend with. These are morphological paradigms

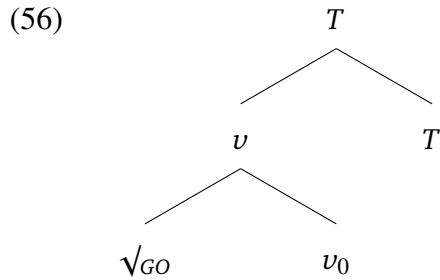
that received a treatment as Lexical vs. Syntactic word formation within Lexicalist approaches, but since the starting premise of DM is that all word formation *is* syntactic, some of the processes that seem constrained to the domain of the (phonological) “word” need to be accounted for through other means. Marantz (2007) appeals to the idea of phases (Chomsky 2001), positing that categorizing heads are themselves cyclic phase heads. Under phase theory, which hypothesizes that the Syntactic structure is sent to PF in successive cycles, one is able to isolate a constituent that would be just the  $\sqrt{(P)}$ <sup>11</sup> and its categorizing head, which would be sent to PF to be linearized and pronounced. This results in the isolation of a linearized string of just the Root and its categorizer, logically equivalent in its empirical coverage to the split that a Lexicalist would posit between Lexical vs. Syntactic word formation.

With this set of commitments, we arrive at a formal grammar that requires categorizing heads to select Roots, in order to derive any morpho(-phono)logical effects that are constrained to the domain of the “word”, i.e., to the domain of the Root and its categorizer. Crucially, though, it is useful to note that this requirement for categorizing heads is not about any grammatical need of the Root itself, but a consequence of a post-syntactic framework for morphological insertion, and given this, what tools are required to derive certain morpho-phonological patterns. While this perspective makes some headway in accounting for aforementioned inner vs. outer domain morphological paradigm splits, it does result in complications for the PF module, in particular with respect to theories of the locality profile that Vocabulary Insertion is sensitive to. A growing body of work on suppletion has argued that allomorphic conditioning of Roots should be understood to be sensitive to strict locality (see discussions in, e.g., Bobaljik 2012; Harley 2014;

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<sup>11</sup>In adopting the  $\sqrt{P}$  Hypothesis, I believe that phase theorists would likely assume that the IA of an argument-introducing Root raises to the phase edge of the categorizing head’s projection.

Merchant 2015)<sup>12</sup>, and a theory that assumes obligatory categorizing heads runs into empirical issues in deriving all of the observed suppletion paradigms identified in the literature. Embick (2010), for example, points out instances of contextual allomorphy where a functional head  $X$  appears to condition the suppletive form of a Root  $Z$  even if there is an intervening categorizing head  $Y$  between the two. For example (and this is the example provided by Embick 2010), consider the past tense forms of verbs in English: if we assume a complex head (formed first by a  $T$  lowering operation) like the one in (56), the Root  $\sqrt{GO}$  has a suppletive form “went” that is conditioned by  $T_{[PAST]}$ . However, note that the  $T_{[PAST]}$  node is *not* adjacent to the Root: there is an intervening terminal, the categorizing head  $v_0$ .



Embick (2010) appeals to the difference between categorizing heads and other functional heads in terms of being cyclic vs. non-cyclic heads, and suggests that this difference leads to different locality constraints on allomorphic conditioning, pointing out that “a non-cyclic (i.e. non-category-defining) head  $X$  can see a Root in spite of intervening cyclic head  $[Y]$ , but this seems to happen only when  $[Y]$  is non-overt” (Embick 2010: 34). Making sense of this generalization and others pertaining to tricky

<sup>12</sup>Depending on one’s commitment to how much hierarchical structure is accessible for certain PF mechanisms, this locality profile could either be characterized as a relationship of direct c-command between two nodes, or as strict *linear* adjacency of nodes— or, in Merchant (2015)’s case, spans— after the operation of Linearization has converted the hierarchical output of Syntax into a linear string.

contextual allomorphy paradigms is what leads DM theorists to the introduction of PF operations such as Re-adjustment Rules, Pruning, Fusion, which serve to remedy and make sense of apparent strict adjacency violations for allomorph conditioning.

In a morphologically analytic language like Korean, it is difficult to locate empirical evidence that a categorizing head must exist local to the Root at all— as we will see in §2.4, if  $v_0$  and  $n_0$  do exist as heads directly above the Root, they must be posited as null exponents that would be “pruned” under Embick (2010)’s system across every discussed paradigm. This is not to say that categorizing heads do not exist at all: in §2.4 there is empirical discussion of an overt nominalizing head *-ki* in Korean that accomplishes domain changes (verbal to nominal), and it would take an entire second dissertation to give full justice (with cross-linguistic consideration) to the question of whether there is reason to eradicate the categorization of Roots by syntactic heads entirely, and what that would mean for our theory of the interfaces. However, given the discussion in this section, as well as the morphological paradigms I discuss in §2.4, I will entertain the hypothesis that there is no categorizing head above the Root in Korean, and demonstrate the positive benefits of this perspective. We will see, in Chapters 3 and 4, empirical evidence that (pseudo-)incorporees in Korean must structurally be  $\sqrt{(P)}$ s that do *not* have a categorizing head above them, again providing additional support that these categorizing heads are unnecessary to posit, and, in some cases, cannot be posited.

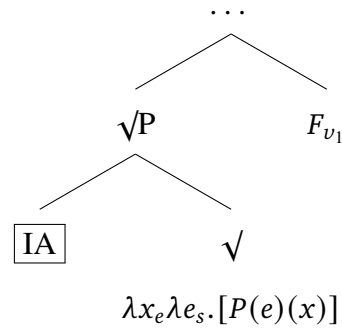
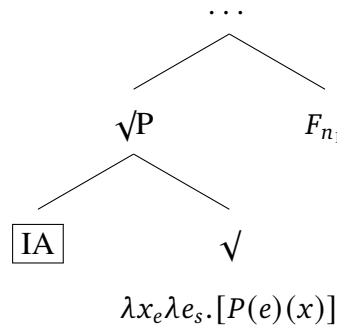
## **§ 2.4 Loanwords: exceptional, or universal?**

Sections §2.2–2.3 constructed argumentation in favor of the  $\sqrt{P}$  Hypothesis: we saw that SKLs can neither have a verbal nor nominal structural source for their internal argument,

and so it must be the case that SKL Roots introduce their own argument directly. The analysis posits a  $\sqrt{P}$  constituent as the base of both AS-Nominals and complex predicates built from SKLs, with the only difference between the two constructions coming from which extended projection—nominal (57) or verbal (58)—is built above.  $F_{n_1}$  in (57) is a placeholder for the first functional projection of the nominal domain, and  $F_{v_1}$  in (58) is a placeholder for the first functional projection of the verbal domain.

(57)  $\sqrt{P}$  for SKL AS-Nominal

(58)  $\sqrt{P}$  for SKL verbal predicate



As established briefly at the outset of Chapter 2, the lexical items I call SKLs, which are analyzed as argument-introducing Roots, are, curiously, all loanwords<sup>13</sup>. Native Korean AS-Nominals, in contrast, show evidence of embedded verbal structure, much

<sup>13</sup>All argument-introducing Roots in Korean have traces of Sino-Korean origin. At first glance, apparent exceptions can be found, but a closer look at their origins confirms Sino-Korean status. Consider the constructions that can be created with *sanyang*, meaning “hunting, to hunt”. It licenses both an AS-Nominal (i), and a complex predicate (ii), therefore patterning like other SKLs previously discussed.

- (i) *ku salam-uy cac-un sasum sanyang*  
that person-GEN frequent-ADJ deer hunting  
“That person’s frequent hunting of deer”
- (ii) *ku salam-i sasum-ul sanyang-ha-yss-eyo*  
that person-NOM deer-ACC hunting-do-PST-DECL  
“That person hunted a deer.”

While *sanyang* is perceived to be native Korean by many speakers and is even recorded as such in some dictionaries, Yi (2008) reports that it is a *nativized Sino-Korean* word— despite having a Sino-Korean etymological origin it is no longer perceived as such, because it has undergone drastic-enough phonetic change such that its pronunciation no longer corresponds to the readings of the source Chinese characters. The root *sanyang* is etymologically linked to 15th century *san.hayng*, meaning “mountain trip” (Yi 2008).

Chapter 2 Loanwords and the  $\sqrt{P}$  Hypothesis

the same as AS-Nominals investigated in Hebrew, Greek and English (Hazout 1995; Alexiadou 2001; Fu et al. 2001). Consider, for example, the native transitive predicates *ciwu-* (“to erase”) and *mek-* (“to eat”) in (59).

- (59) a. *sensayngnim-i chilphan-ul ciwu-ess-eyo*  
teacher-NOM blackboard-ACC erase-PST-DECL  
“The teacher erased the blackboard..”
- b. *ku ai-ka umsik-ul mek-ess-eyo*  
that child-NOM food-ACC eat-PST-DECL  
“That child ate the food.”

When used to form AS-Nominals, native Korean predicates require an obligatorily overt nominalizer, and allow VP adverbials (60).

- (60) a. ?? *sensayngnim-uy chelceha-key chilphan ciwu-ki-nun*  
teacher-GEN thorough-ADV blackboard erase-NMLZ-TOP  
*insangcek-i-ess-eyo*  
impressive-COP-PST-DECL  
“The teacher’s erasing of the blackboard thoroughly was impressive.”
- b. ?? *ku ai-uy nuli-key umsik mek-ki-nun sikan-i manhi*  
that child-GEN slow-ADV food eat-NMLZ-TOP time-NOM much  
*kelli-ess-eyo*  
walk-PST-DECL  
“That child’s eating of the food slowly took a long time.”

Note that the overall frequency of AS-Nominals taking on syntactic subject or topic

## §2.4 Loanwords: exceptional, or universal?

positions is quite rare in Korean, and likely contributes to the marginality of the judgments in (60) above<sup>14</sup>. The acceptability of adverbials in *-ki* nominalizations improves greatly when they are placed in a more frequently utilized syntactic environment, such as when they are used for embedding infinitives (61).

- (61) a. *sensayngnim-i chelceha-key chilphan ciwu-ki-lo*  
 teacher-NOM thorough-ADV blackboard erase-NMLZ-toward  
*kyelceng-ha-yss-eyo*  
 decision-do-PST-DECL  
 “The teacher decided to thoroughly erase the blackboard.”
- b. *ku ai-ka nuli-key umsik mek-ki-lo kyelceng-ha-yss-eyo*  
 that child-NOM slow-ADV food eat-NMLZ-toward decision-do-PST-DECL  
 “That child decided to slowly eat food.”

Within morpho-phonological investigation, borrowed morphemes, which often pattern together along a number of grammatical dimensions, have guided analyses proposing sensitivity of the synchronic grammar to Lexical Strata (e.g., Haspelmath & Sims 2013; Ito & Mester 1995; Laks 2025; among others). Formal accounts of Lexical Strata either 1) grammaticalize loanword status, such as, e.g., with a feature [LOAN] that regulates the application of processes specific to loanwords (Ito & Mester 1995; Jurgec 2010); or 2) derive loanword behavior from the interaction of model components, such that loanwords behave differently because their grammatical representations are different from native lexical items in some way, but no *direct* sensitivity to etymological

<sup>14</sup>The data in (60) were evaluated by two consultants, both of whom noted that the addition of the adverbial phrases felt, in principle, possible, but that these sentences were unnatural/unlikely to be used in everyday language.

## *Chapter 2 Loanwords and the $\sqrt{P}$ Hypothesis*

origin is formally encoded (Inkelas et al. 1997; Newell 2021).

In light of the differences in structural properties of loan vs. native AS-Nominal constructions, a version of the same question arises for syntax: should the AS properties of Sino-Korean loanwords be accounted for as a special property exclusive only to loanwords? Is etymological status a formal feature that Syntax has access to? In service of the broader goal to craft a principled theory of internal argument introduction, it is desirable, from the theoretician's perspective, to push for the universalist position, i.e., for adoption of the  $\sqrt{P}$  more generally as the core of all predicate structures with the capacity to license an IA. And yet, the  $\sqrt{P}$  Hypothesis seems to under-explain the cross-linguistic norm (Fu et al. 2001; Hazout 1995; Alexiadou 2001, 2010a,b), and even the preferences of native predicates vs. loanword predicates just within Korean. All of these paradigms point toward AS-Nominals with embedded verbal structure as a much more typologically common strategy for realizing argument structure within a nominal construction. If all internal arguments are introduced by Roots, then why should the  $\sqrt{P}$  constituent be only diagnostically identifiable in loanword predicates, and why should it cross-linguistically be the case that there is a strong correlation between AS and verbal structural properties? In short, why do AS-Nominals across so many languages exhibit signs of underlying verbal structure, if, per §2.2–2.3, verbal structure is not actually strictly required for the introduction of an internal argument?

There are two possible approaches to this puzzle to consider. The first option would argue for the argument structural properties of loanwords to be exceptional: the  $\sqrt{P}$  is an exceptional structure that is utilized exclusively by Sino-Korean predicates, while native predicates utilize instead a verbal functional projection for internal argument introduction. This option has a number of conceptual and empirical issues. For one, if

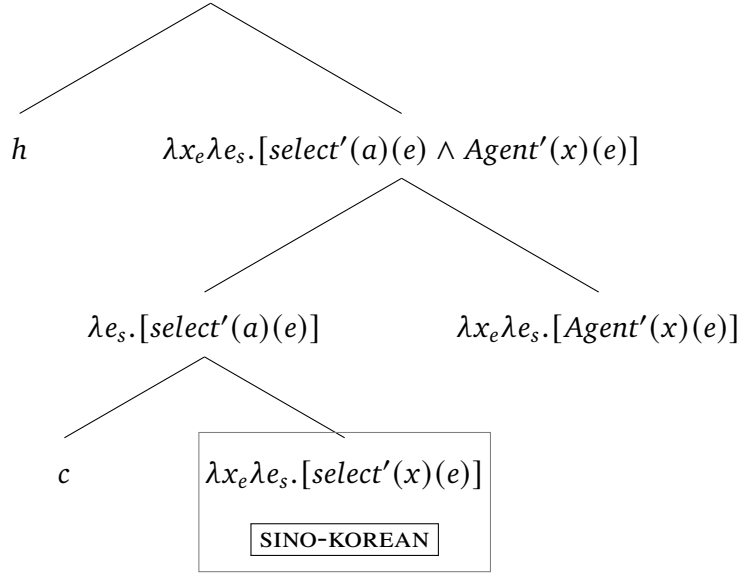
#### §2.4 Loanwords: exceptional, or universal?

mapping our understanding of the representation of Neo- vs. classical Davidsonian event semantics to syntactic structure, we predict that both Neo-Davidsonian and classical Davidsonian ways of relating an internal argument to an event are possible, and that this split is sensitive to etymology. Not only is it unclear how this perspective has any explanatory strength in developing our understanding of event semantics, its mapping to syntax, and the learnability of this mapping, it also only holds empirical traction in so far as we can reliably categorize loan and native predicates not just by their origins, but also by their event structure. This proves difficult, as there are a number of native Korean ~ Sino-Korean synonym pairs that describe the same event. Consider, for example, the minimal pair in (62); sentence (62a) uses the native Korean predicate *kolu-*, while (62b) uses the Sino-Korean predicate *senhayk(ha-)*, both meaning “to choose/to select”. Both are transitive predicates that describe an event of choosing, where someone, the chooser, makes a selection of something else, the chosen.

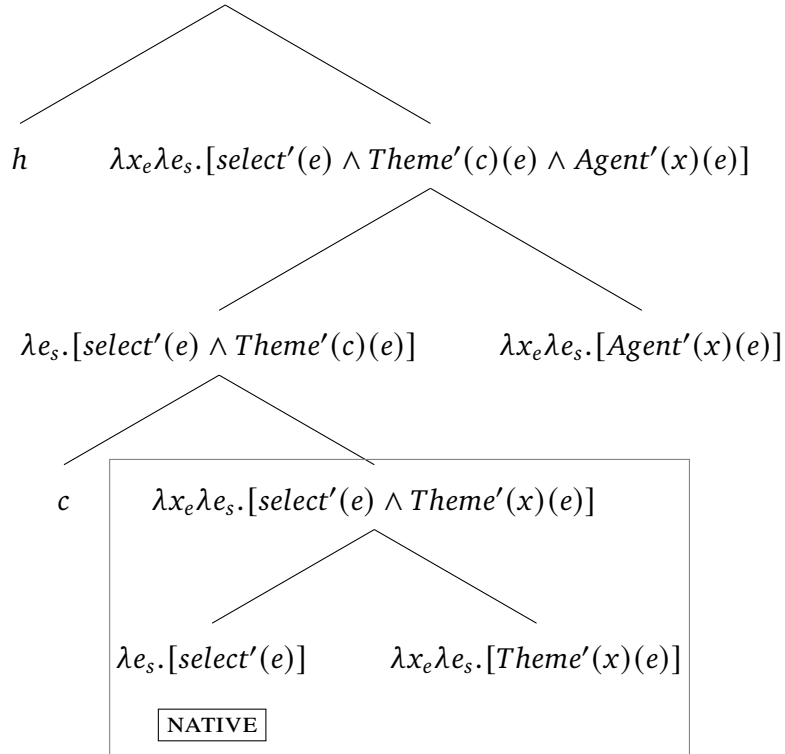
- (62) a. *hoseki-ka khatu-lul kolla-ss-ta*  
Hoseok-NOM card-ACC select-PST-DECL  
“Hoseok chose/selected a card.”
- b. *hoseki-ka khatu-lul senhayk-ha-yss-ta*  
Hoseok-NOM card-ACC select-do-PST-DECL  
“Hoseok chose/selected a card.”

We would predict that a Sino-Korean predicate structure would relate its internal argument variable to its event variable in a classical Davidsonian way (63), while a native Korean predicate structure would relate its internal argument variable to its event variable in a neo-Davidsonian way (64).

(63)  $\lambda e_s.[select'(a)(e) \wedge Agent'(h)(e)]$



(64)  $\lambda e_s.[select'(e) \wedge Theme'(c)(e) \wedge Agent'(h)(e)]$



## §2.4 Loanwords: exceptional, or universal?

While Sino-Korean and native Korean predicates often have differences in frequency, as well as differences in register (with Sino-Korean items often being used in more formal or academic/literary contexts), frequency and register are not dimensions predicted to have any impact on our conception of events. There are many more synonym pairs like (62), such as: *kitay-* ~ *uyci(ha-)*, “to lean on/rely on”; *ssu-* ~ *sayong(ha-)*, “to use”; *ip-* ~ *chakyong(ha-)*, “to wear”; *mit-* ~ *sinloy(ha-)*, “to trust/believe”; and more<sup>15</sup>.

Furthermore, there exist many Sino-Korean vocabulary items that do *not* have argument structure, and instead pattern like non-AS Roots in failing to license AS-Nominals, though they are still able to surface in complex predicates. Recall, for example, the non-AS Roots discussed in §2.3.2, *mal-ha-* (“to say/speak”) and *nolay-ha-* (“to sing”). While *mal* is a native Korean vocabulary item, *nolay* is, in fact, Sino-Korean: it patterns with the native item *mal*, however, rather than with other SKLs, in disallowing an AS-Nominal construction (65a).

- (65) a. \* *kaswu-uy cac-un cayen-uy aluntawum nolay*  
           singer-GEN frequent-ADJ nature-GEN beauty song  
           Intended: “The singer’s frequent singing of nature’s beauty”
- b. *ku kaswu-ka cayen-uy aluntawum-ul cacwu nolay-ha-yss-eyo*  
           that singer-NOM nature-GEN beauty-ACC frequently song-do-PST-DECL  
           “‘That singer often sang of nature’s beauty.”

<sup>15</sup>There are, of course, differences in the specifics of the events that each item of a given synonym pair describes, but there is no pattern of “specificity” that divides the pairs neatly between loan and native items. For example, for *kitay-* ~ *uyci(ha-)*, “to lean on/rely on”, the native predicate *kitay-* can be used to describe both a metaphorical and a physical “leaning on” something (leaning on a wall vs. leaning/relying on a person), while the Sino-Korean predicate *uyci* tends to only have the metaphorical/non-physical use. However, for *ip-* ~ *chakyong(ha-)*, “to wear/put on”, the native predicate has the more context-specific use: *ip-* can only be used to describe the act of putting on fabric clothing, while *chakyong* can be used to describe the act of putting on any wearable item: clothes, shoes, jewelry, socks, etc.

The predicate *nolay-ha-* allows some kind of ACC-marked phrase in the verbal constructions (65b), but this phrase, if it even is an argument, cannot receive an analysis on par with the IAs of eventive SKL predicates (empirically argued for in §2.3.2 on the basis of differential case marking behavior). Therefore, even though *nolay* is a Sino-Korean loanword, it is not an “SKL”; i.e., it is not a pronunciation of an AS-Root. It is possible to identify a number of Sino-Korean loanwords that fit this second class of Roots, which disallow an AS-Nominal construction and license an ACC-phrase only in their complex predicate forms.

There are also many more Korean vocabulary items, both native and Sino-Korean ones, that fail to make AS-Nominals *and* fail to license an ACC-marked phrase when surfacing in complex predicates. Some examples of native Korean vocabulary items that fall under this characterization are given in (66), and some examples of Sino-Korean vocabulary items that fall under this characterization are given in (67).

(66) Example native Korean intransitive-only<sup>16</sup> complex predicates

- a. *il-ha-*      thing-do-    “to work”
- b. *iyaki-ha-*   story-do-    “to talk, chat”
- c. *pap-ha-*     rice-do-      “to make a meal”

(67) Example Sino-Korean intransitive-only complex predicates

- a. *sanchayk-ha-*   stroll-do-    “to take a walk”
- b. *phyenci-ha-*   letter-do-    “to send/write a letter”
- c. *nongtam-ha-*   joke-do-      “to do/tell a joke”

---

<sup>16</sup>“Intransitive-only” here means: “cannot have an accusative-marked satellite phrase”. Some of these do allow optional oblique arguments of various kinds.

## §2.4 Loanwords: exceptional, or universal?

For the predicates in (66–67), the vocabulary items which serve as their bases all have a referential use on their own (68), cannot license an AS-Nominal construction (69), and disallow an ACC-marked phrase in their complex predicate constructions (70).

- (68) *ce-nun nongtam-i cengmal silh-eyo*  
 1P.SG-TOP joke-NOM really be.undesirable-PRS.DECL  
 “I really dislike jokes.”

- (69) \**hanyengi-uy cacun nongtam*  
 Hanyoung-GEN frequent joke  
 Intended: “Hanyoung’s frequent joking (about...)”  
 (can only have referential interpretation, i.e. jokes)

- (70) *hanyengi-ka (\*pulocekthu-lul) nongtam-ha-yss-eyo*  
 Hanyoung-NOM (\*project-ACC) joke-do-PST-DECL  
 “Hanyoung joked/made a joke (\*about the project).”

Finally, recall the mnemonic complex predicates from Section §2.3; in some sense, these could also be construed as “borrowings”, or rather, as novel vocabulary item creations inspired by the sounds/notions they refer to. They too, must utilize *ha-* in their verbal forms, but these verbal predicates are always intransitive.

- (71) *kaykwul(kaykwul)-ha-*  
 √croak-do-  
 “to croak/ribbet”

The point of this short survey of complex predicates is to show that, while Sino-Korean loanwords do have something in common with each other, this commonality is

## *Chapter 2 Loanwords and the $\sqrt{P}$ Hypothesis*

something about their morphotactics, such that *ha-* is used to realize a verbal predicate, rather than anything about their underlying AS-capabilities. Loanwords do not all share the same underlying event semantic properties: not all of them have the necessary Aktionsart semantics to be an argument-introducing predicate.

Returning to the higher level question— why should it cross-linguistically be the case that there is a strong correlation between AS and verbal structural properties, if verbal structure is not strictly required for the introduction of an IA?— it is evident that an explanation which treats the  $\sqrt{P}$  of an SKL as an exceptional structure available only to loanwords is untenable. The more promising alternative argues for a universalist take on the  $\sqrt{P}$ : all argument-introducing lexical predicates have the same underlying AS, but there may be morpho-phonotactic constraints active (which could target loan and native items differently) conspiring to make it impossible for certain structural realizations to be pronounced. This hypothesis would propose that there is nothing syntactically ill-formed about a structure where a nominal extended projection merges directly above the  $\sqrt{P}$  for a native Korean predicate, but that the module of the grammar handling pronunciation has no way to pronounce this structure, and it is therefore ruled out. This route makes a much stronger and more interesting explanatory prediction: that morpho-phonotactic constraints play a role in constraining possible syntactic derivations.

In the coming subsections, I outline how the current tools we have at our disposal in (morpho-)syntactic theory make some headway in successfully deriving the differences between loan/native predicates in their realization of some AS-Nominal structures but not others. However, before discussing the formal tools of morphological analysis available to us, in §2.4.1 I first summarize the necessary morphological facts of native and Sino-Korean vocabulary items that any account must minimally be able to derive.

### 2.4.1 Sino-Korean and native Korean morphological constraints

This section briefly summarizes four critical empirical generalizations about Korean verbal morphology, which any analysis of the syntax-morphology interface must be able to account for. First, as reported in many descriptive Korean grammars, native Korean verb stems are always bound: they cannot occur in isolation, and must have at least one overt suffix in order to be well-formed (72).

- |      |                   |                   |                   |
|------|-------------------|-------------------|-------------------|
| (72) | a. * <i>kolu-</i> | b. <i>kolu-ca</i> | c. <i>kolu-ki</i> |
|      | select-           | select-PROP       | select-NMLZ       |
|      |                   | “(let’s) select”  | “selecting”       |

Not just any suffix suffices, however— suffixes that express information from the extended clausal projection (72b), or an overt nominalizer (72c) are both possible, but case markers, for example, cannot compose directly with verb stem roots (73).

- |      |                     |                      |                     |
|------|---------------------|----------------------|---------------------|
| (73) | a. * <i>kolu-ka</i> | b. * <i>kolu-lul</i> | c. * <i>kolu-uy</i> |
|      | select-NOM          | select-ACC           | select-GEN          |

Second, native verb stems encode Voice (transitivity/valency), in a way that is sometimes decomposable but ultimately must be stored arbitrarily for each predicate: there is no overt “elsewhere” exponent of Voice for native eventive predicates, nor are the allomorphs that exist fully morphologically or phonologically predictable in their distribution. Most commonly, researchers report on “morphological causatives” (Sohn 1999; Song 2015) in Korean, which cluster as a set of “causativizing” affixes (*-i*, *-hi*, *-li*, *-ki*, *-wu*, *-kwu*, *-chwu*) that sometimes compose with intransitive/stative roots to create transitives, or sometimes with transitive roots to create ditransitive causatives. Not every verb has a causative paradigm, and no phonological rules can be formulated

to explain the distribution of the causative allomorphs: though there are some trends based on the final consonant of the stem, there are too many exceptions for a satisfactory rule to be drawn up (Yeon 2003; Ko & Ku 2008).

Further, a subset of the same affixes (-i, -hi, -li, -ki) are also used in “morphological passives”, again with a similar degree of non-productivity. These affixes compose with transitive roots to create inchoative/unaccusative counterparts. There is diachronic evidence that the distribution of the passive allomorphs once had more regular phonological predictability than the causative affixes, but the paradigms are incomplete; the transitive verb *masi-* (“to drink”), for example, has neither a “causative” or “passive” counterpart. There is no synchronic analysis that can capture the full distribution of passive and causative suffix forms with phonology alone (Yeon 1991, 2003). Some exemplary paradigms are provided in (74).

(74) Example native verb paradigms with morphological causative/passives

| valency: 1                     | valency: 2                          | valency: 3                  |
|--------------------------------|-------------------------------------|-----------------------------|
| <i>mac-</i> (“to be correct”)  | <i>mac-chwu-</i> (“to fit/match”) - |                             |
| <i>wus-</i> (“to laugh”)       | <i>wus-ki-</i> (“to make laugh”) -  |                             |
| <i>nuc-</i> (“to be late”)     | <i>nuc-cwu-</i> (“to delay”) -      |                             |
| -                              | <i>al-</i> (“to know”)              | <i>al-li-</i> (“to inform”) |
| -                              | <i>masi-</i> (“to drink”)           | -                           |
| <i>mek-hi-</i> (“to be eaten”) | <i>mek-</i> (“to eat”)              | <i>mek-i-</i> (“to feed”)   |
| <i>tat-hi-</i> (“to close”)    | <i>tat-</i> (“to close”)            | -                           |
| <i>pakkwu-i-</i> (“to change”) | <i>pakkwu-</i> (“to change”) -      |                             |

Third, Sino-Korean eventive stems are free, not bound: unlike native verb stems, they cannot compose with an affix of the verbal functional sequence directly, nor with

## §2.4 Loanwords: exceptional, or universal?

a nominalizer: *ha-* must be added first (75).

- |      |    |                 |    |                      |    |                      |
|------|----|-----------------|----|----------------------|----|----------------------|
| (75) | a. | <i>senhayk</i>  | b. | * <i>senhayk-ca</i>  | d. | * <i>senhayk-ki</i>  |
|      |    | select          |    | select-PROP          |    | select-NMLZ          |
|      |    | “(a) selection” | c. | <i>senhayk-ha-ca</i> | e. | <i>senhayk-ha-ki</i> |
|      |    |                 |    | select-do-PROP       |    | select-do-NMLZ       |
|      |    |                 |    | “(let’s) select”     |    | “selecting”          |

They can, however, compose directly with case markers (76).

- |      |    |                  |    |                   |    |                   |
|------|----|------------------|----|-------------------|----|-------------------|
| (76) | a. | <i>senhayk-i</i> | b. | <i>senhayk-ul</i> | c. | <i>senhayk-uy</i> |
|      |    | select-NOM       |    | select-ACC        |    | select-GEN        |

Fourth, Voice is encoded for Sino-Korean complex predicates via an addition of a light verb, most often *ha-*. The light verb *ha-* (“do”) is found in all Sino-Korean verbal paradigms, but the underlying valency information it encodes depends on the Sino-Korean item used. What can be said across all of the paradigms, is that *ha-* surfaces as the “default”/“basic” form, while *twoy-* (“become”) and *sikhi-* (“make/cause”) are marked alternatives. There are three paradigms. Below, I give an exemplar predicate from each: *chimmol* (“sink”), *phakwoy* (“destroy”), and *kyeysan* (“calculate”).

The SKL *chimmol* is intransitive in its basic complex predicate form with *ha-*, and can be transitivized if *sikhi-* is used instead (77). The form \**chimmol-twoy-* is disallowed.

- |      |    |                              |                |                             |
|------|----|------------------------------|----------------|-----------------------------|
| (77) | a. | <i>pingsan-i</i>             | <i>pay-lul</i> | <i>chimmol-sikhi-ess-ta</i> |
|      |    | iceberg-NOM                  | boat-ACC       | sink-make-PST-DECL          |
|      |    | “The iceberg sank the boat.” |                |                             |

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- b. *pay-ka chimmol-ha-yess-ta*

boat-NOM sink-do-PST-DECL

“The boat sank.”

- c. \* *chimmol-twoy-ess-ta*

sink-become-PST-DECL

The SKLs *phakwoy* and *kyeysan* are transitive in their basic complex predicate forms with *ha-*, and can be “passivized” if *twoy-* is used instead (78–79)<sup>17</sup>.

- (78) a. *kwunin-tul-i tosi-lul phakwoy-ha-yess-ta*

soldier-PL-NOM city-ACC destroy-do-PST-DECL

“The soldiers destroyed the city.”

- b. *tosi-ka phakwoy-twoy-ess-ta*

city-NOM destroy-become-PST-DECL

“The city was/got/became destroyed.”

- (79) a. *cikwen-i yengswucung-ul kyeysan-ha-yess-ta*

worker-NOM receipt-ACC calculate-do-PST-DECL

“The worker calculated the receipt.”

- b. *yengswucung-i kyeysan-twoy-ess-ta*

receipt-NOM calculate-become-PST-DECL

“The receipt was/got/became calculated.”

However, these two SKLs diverge in whether or not they undergo causitivation

---

<sup>17</sup>The *twoy-* form can actually be shown to be syntactically unaccusative, patterning like English middles under diagnostics for implicit agents (Bhatt & Pancheva 2017). The same is true for the native morphological passives discussed earlier, as well.

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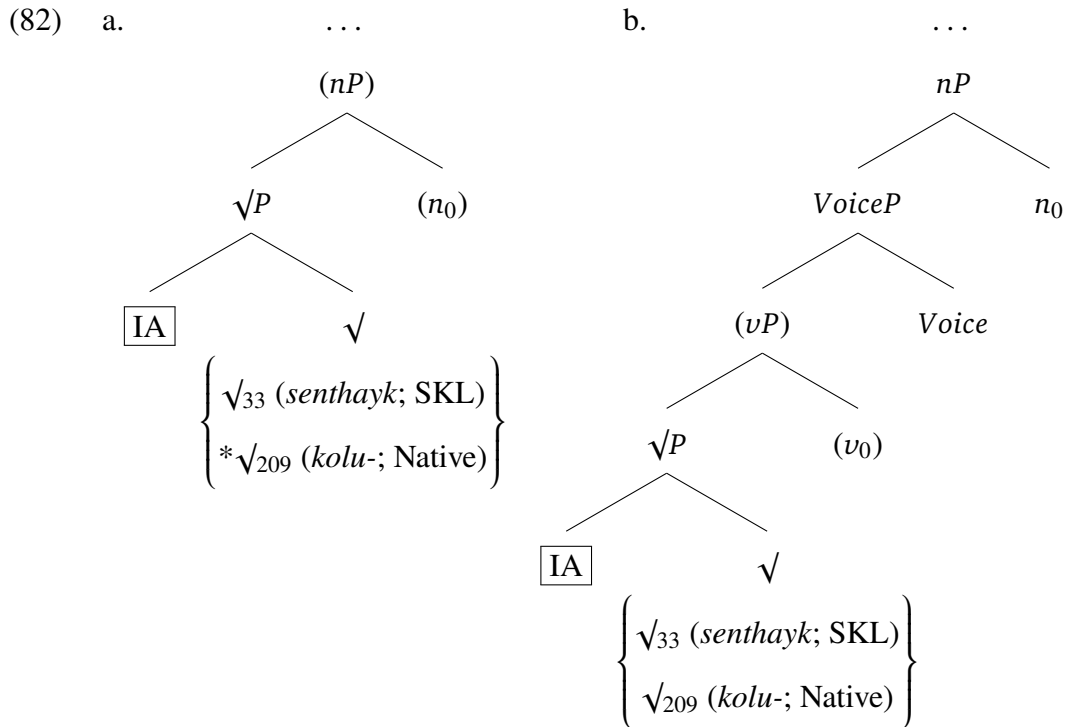
with the addition of *sikhi-*; *phakwoy-sikhi-* is still transitive (80), reported to have an indistinguishable meaning from *phakwoy-ha-* (78a), whereas *kyeysan-sikhi-* adds a causer argument (81).

- (80) *kwunin-tul-i tosi-lul phakwoy-sikhi-ess-ta*  
soldier-PL-NOM city-ACC destroy-make-PST-DECL  
“The soldiers destroyed the city.”
- (81) *sacang-i yengswucung-ul cikwen-eykey kyeysan-sikhi-ess-ta*  
boss-NOM receipt-ACC worker-DAT calculate-make-PST-Decl  
“The boss made the worker calculate the receipt.”

A full account of these paradigm splits will not be finalized in this chapter, but at minimum, the data in (77–81) serve to point out that *ha-*, as a default, is not the exponent of a specific Voice head (e.g., Voice<sub>[AGENT]</sub>), but is rather an unmarked realization. This generalization is further supported by the fact that *ha-* has a broader distribution as a VP anaphor that is used as a repair for VP ellipsis, similar in characterization to English do-support (see, e.g., Park 1974; Jo 2000).

Recall the syntactic restrictions on loan vs. native predicates in Korean: SKLs can form AS-Nominals that are unambiguously non-verbal (adverbs disallowed), as well as deverbal nominalizations (adverbs allowed), but only with the addition of *ha-* and *-ki*. Native predicates however, can only form deverbal nominalizations. To get the syntactic facts correct, we must minimally assert that both structures in (82) are attested AS-Nominal structures in the Korean language. Sino-Korean Roots can participate in both, but native Roots can only participate in (82b). I put the categorizing heads  $n_0$  and  $\nu_0$  in parentheses when relevant, to note where these would fall in the structure under

an approach that commits to their existence above the Root. Since all morphological forms of native predicates and predicates with an overt *ha-* are conditioned by Voice in someway, it seems that the smallest possible deverbal nominalization in Korean is the nominalization of a VoiceP.



The main difference in the morphotactics of native vs. Sino-Korean predicate roots is a difference in their bound vs. free status: native predicative roots are bound morphemes, with a strict requirement for co-occurrence with verbal structure. Sino-Korean predicate roots, on the other hand, are free morphemes, with no boundedness restrictions, and no such strict requirements on the presence or absence of verbal structure. A free morpheme can be realized in either a fully nominal or fully verbal structure, and in the latter one, a light verb morpheme is capable of stepping in as a “default” realization of the functional heads responsible for valency alternations.

## §2.4 *Loanwords: exceptional, or universal?*

In the coming subsections, I briefly discuss how a number of the current tools we have at our disposal in (morpho-)syntactic theory make headway in formalizing a morphological account of loan and native predicates in Korean, to successfully derive the morphological generalization that native predicate roots must be obligatorily realized in the context of verbal functional structure. I first briefly discuss the shortcomings of the framework of allosemy (Wood 2023) in §2.4.2, then turn to a broader discussion of Late Insertion approaches more generally in §2.4.3.

### 2.4.2 **Against allosemy**

A recent analysis of nominalizations comes from Wood (2023)’s allosemy framework (see also Wood 2016, 2017). The framework provides a formal proposal for the structure, form, and interpretation of nominals with argument structure, and as such is relevant to the current discussion. Wood (2023)’s system is particularly aimed at deriving the ambiguity of form among Complex Event Nominals (CENs; what I have been referring to as AS-Nominals), Simple Event Nominals (SENs), and Referential Nominals (RNs), a distinction first described by Grimshaw (1990) and the focus of much further research on nominal syntax (Alexiadou 2001, 2009; Ackema & Neeleman 2004; Lieber 2017; Melloni 2010). This generalization is also sometimes referred to as the result vs. process nominal distinction, and characterizes the empirical observation that the morphological form of an eventive nominal is in fact systematically ambiguous between at least two (often three<sup>18</sup>) possible interpretations, depending on surrounding context. Consider, for example, the Icelandic data point in (83), where the noun *eyðilegg-ing* (“destruction”)

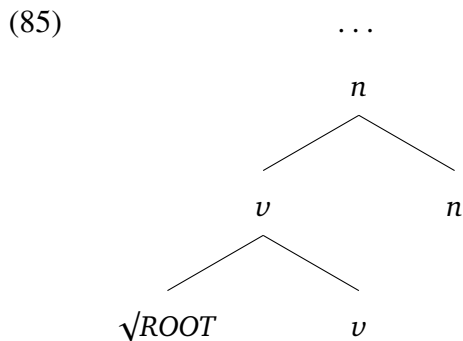
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<sup>18</sup>The SEN (Simple Event Nominal) interpretation is sometimes contested. See discussion in Wood (2023), as well as in Alexiadou (2009) and Borer (2003).

is used to describe an event of destroying a particular city (the process interpretation), in contrast to (84), where the same noun *eyðilegg-ing* instead refers to the result state of said event (the result interpretation), rather than to the actual destroying event itself.

- (83) *Eyðilegg-ing borgarinnar var hræðilegur atburður*  
 destruc-NMLZ.NOM city.the.GEN was horrible event  
 “The destruction of the city was a horrible event.” (Wood 2023: 66)
- (84) *Jón gekk sorgmæddur í gegnum eyðilegg-ing-una*  
 Jón walked aggrieved in through destruc-NMLZ-the.ACC  
 “Jón walked aggrieved through the destruction.” (Wood 2023: 66)

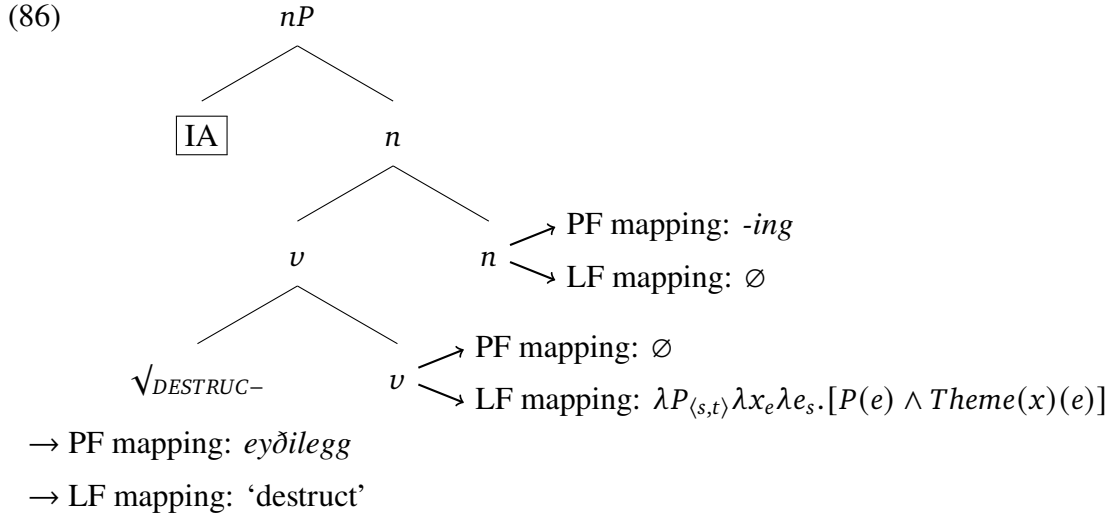
The thesis of allosemy put forth in Wood (2023) argues that all nominalizations are systematically ambiguous in their interpretations, but that all interpretations stem from the same syntactic structure. In other words, all nominalizations have the same core structure in (85), where a Root adjoins to a little  $\nu$  head, which itself adjoins to a little  $n$ . Late Insertion is extended to both the PF and the LF modules: the terminal nodes  $n$  and  $\nu$ , for example, have multiple allosemes stored for their entry in List 3 (the Encyclopedia).



(adapted from Wood 2023: 224)

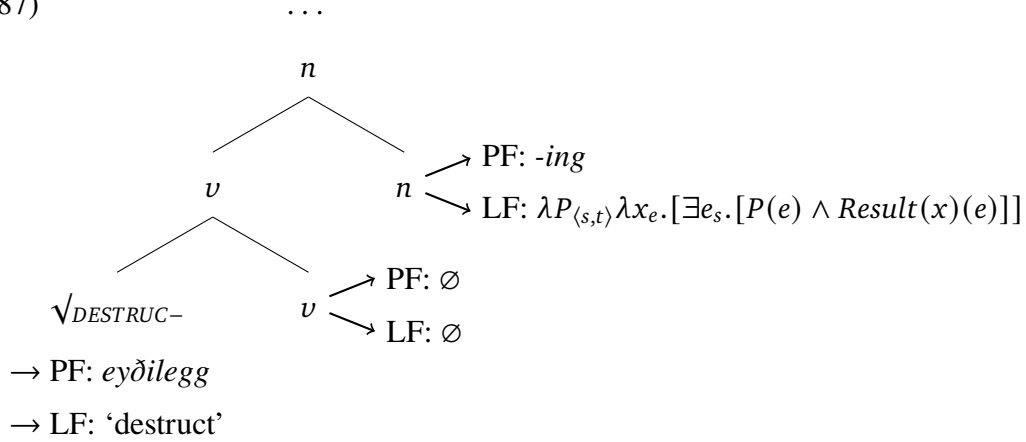
## §2.4 Loanwords: exceptional, or universal?

The main strength of the allosemy framework lies in its ability to derive the different possible interpretations of an Icelandic noun like *eyðilegg-ing* through allosemy of the little  $\nu$  and  $n$  heads: for the process interpretation (the AS-Nominal), a contentful alloseme of  $\nu$  is chosen in LF, while  $n$  receives a null LF exponent (86). Abstracting away from the exact details, the Root is transformed into the relevant variable type “whenever [it] is semantically adjacent to a lambda formula” (Wood 2023: 34). Given the structure in (86), the Root  $\sqrt{DESTRUC-}$  will be semantically adjacent to the lambda predicate denoted by  $\nu$ , and therefore contribute a predicate  $P$  which saturates the  $\lambda$ -bound  $P$  in  $\nu$ ’s denotation.



For the result state interpretation, a contentful alloseme of  $n$  is chosen, while  $\nu$  receives a null LF exponent (87). In this structure, the Root  $\sqrt{DESTRUC-}$  will be semantically adjacent to the lambda predicate denoted by  $n$  (assuming Pruning of the null  $\nu$  alloseme; Embick 2010), and therefore contribute a predicate  $P$  which saturates the  $\lambda$ -bound  $P$  in  $n$ ’s denotation.

(87)



Allosemy is a powerful framework that works best in its ability to account for ambiguity of form in its relationship to possible semantic interpretations. However, though I will not be able to do full justice to the empirical question of how the account proposed in this chapter extends to deriving result vs. process nominal ambiguity<sup>19</sup>, Wood (2023)’s system unfortunately cannot handle the Korean phenomenon at hand. For Wood, verbal structure (here, the little  $v$  head) is required to contribute the eventive meaning that licenses argument structure. SKLs, in their ability to license AS in the absence of verbal structure, pose the same empirical challenge to Wood (2023)’s account that they pose to any other account that relies on verbal structure for AS realization (e.g., Borer 2003, 2013, 2014; Alexiadou & Lohndal 2017a,b). We cannot posit underlying verbal structure for SKLs, and as such, regardless of our stance on allosemes and the role of LF in handling form ambiguity, we cannot adopt Wood (2023)’s proposed structure for AS-Nominals.

<sup>19</sup>I note, anecdotally, that SKLs seem to resist result nominal interpretation, raising the question of whether the ambiguity generalization is as robust as Wood (2023), Alexiadou (2001, 2009), and others claim— however, given the rich literature on the result vs. process nominal distinction and the fuzziness of grammatical judgments for these in particular, further investigation is warranted.

### 2.4.3 Other Late Insertion approaches

In DM, Vocabulary Insertion is the post-syntactic operation that handles the insertion of exponents, and involves competition: each List 1 feature bundle is associated with a set of possible allomorphs, along with information on the conditioning environments determining which allomorph is selected as the exponent for the relevant terminal node. For example, consider the English plural affix *-s* and two of its suppletive forms, *-ren*, which occurs with  $\sqrt{177}$  (“child”), and  $-\emptyset$ , which occurs with a handful of Roots, such as  $\sqrt{202}$  (“moose”),  $\sqrt{44}$  (“fish”), and  $\sqrt{60}$  (“deer”). We would list the following Vocabulary entries (88) for the morpheme [PL]. I assume here, as is common for many DM approaches, that terminals are defined in relation to each other in Syntax only by structural notions (e.g., sisterhood, c-command), whereas the process of Linearization is a post-syntactic operation that converts hierarchical relations into an ordered linear string. If we assume Linearization to occur prior to Vocabulary Insertion, then the contexts listed for each Vocabulary Entry can be understood to encode locality restrictions of *linear adjacency*, not those of structural proximity.

(88) Vocabulary entries for [PL]:

$$\begin{aligned} [\text{PL}] &\Leftrightarrow -ren / \{\sqrt{177}, \dots\} \_\_ \\ &\Leftrightarrow -\emptyset / \{\sqrt{202}, \sqrt{44}, \sqrt{60}, \dots\} \_\_ \\ &\Leftrightarrow -s / \text{elsewhere} \end{aligned}$$

Turning to Korean, we are looking to capture the obligatory realization of the exponents of native Roots in the context of verbal functional structure. Recall the possible AS-Nominals in (82), given again in (89). Though both structures are attested, native Roots can only be realized in (89b), while loanword Roots can be realized in either.

- (89) a.
- b.

Vocabulary Insertion as exemplified by the English plural example in (88) is algorithmic: Syntax gives PF a structure, and it will be Linearized and then pronounced according to the best fit of allomorphs. In order to constrain the realization of a particular exponent to only certain syntactic environments, we must either 1) restrict the possible set of structures that are sent to PF, or 2) constrain the licensing conditions of the relevant Vocabulary entries to only verbal environments. I briefly discuss what modeling the restriction on native predicates in Syntax proper could look like, before turning to possible methods of modeling the restriction via constraints on exponent realization in PF.

One way we might try to capture the data without making changes to post-syntactic components could be through syntactic head movement operations (Matushansky 2006; Vicente 2007, 2009; Harizanov 2019). For example, we could try to encode the “bound-

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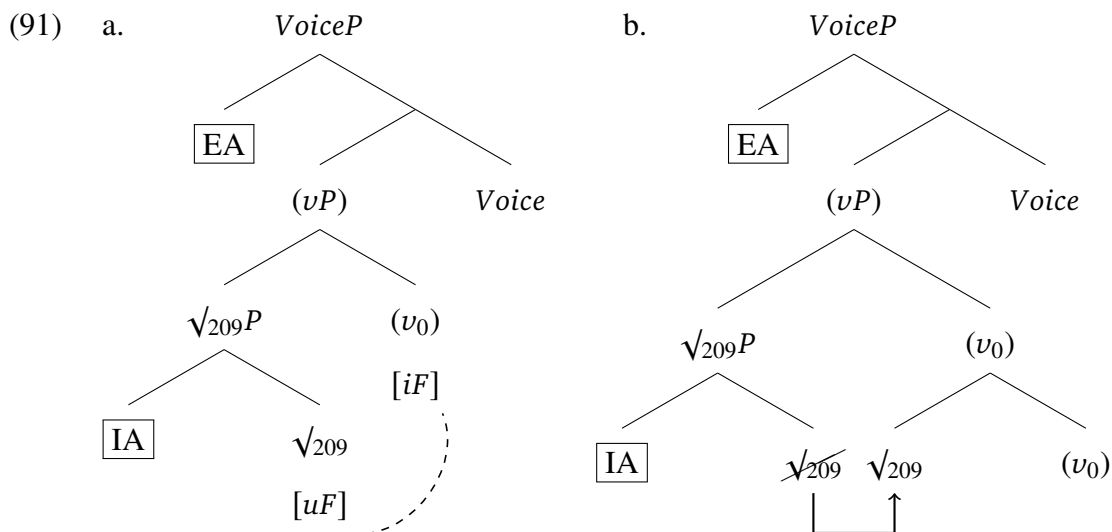
edness” of a native Root as a need to undergo syntactic head movement. A native Root *must* undergo head movement, whereas a Sino-Korean Root has no such requirement. This would need to be coupled with the claim that syntactic head movement is possible for the verbal extended projection but not possible within the extended nominal domain in Korean. This characterization of head movement is the reverse of the traditional characterization of movement operations, where a probe c-commands a goal, and instead fits a characterization of probe-goal relations in line with theories of Upward/Cyclic Agree (Clem 2023; Béjar & Rezac 2009; Zeijlstra 2012; Bjorkman & Zeijlstra 2019). For example, consider the definition of Upward Agree as stated in Bjorkman & Zeijlstra (2019) in (90).

- (90) Upward Agree:  $\alpha$  can Agree with  $\beta$  iff:
- a.  $\alpha$  carries at least one uninterpretable feature and  $\beta$  carries a matching interpretable feature;
  - b.  $\beta$  c-commands  $\alpha$ ;
  - c.  $\beta$  is the closest goal to  $\alpha$  (Bjorkman & Zeijlstra 2019: 527)

Here is how this might be implemented for Korean: we would posit an uninterpretable feature  $uF$  on all native Roots<sup>20</sup>. Minimally, the first projection of the verbal functional domain would have an interpretable feature  $iF$  (I assume this projection to be  $\nu_0$  in the example derivation, for convenience), and all heads of the nominal functional domain would lack this feature. In (91), the native Root  $\sqrt{209}$  has an uninterpretable feature  $uF$ , causing it to search upward for a head that carries a matching interpretable feature. It finds and establishes a dependency with  $\nu_0$ , triggering head movement of  $\sqrt{209}$  to  $\nu_0$ .

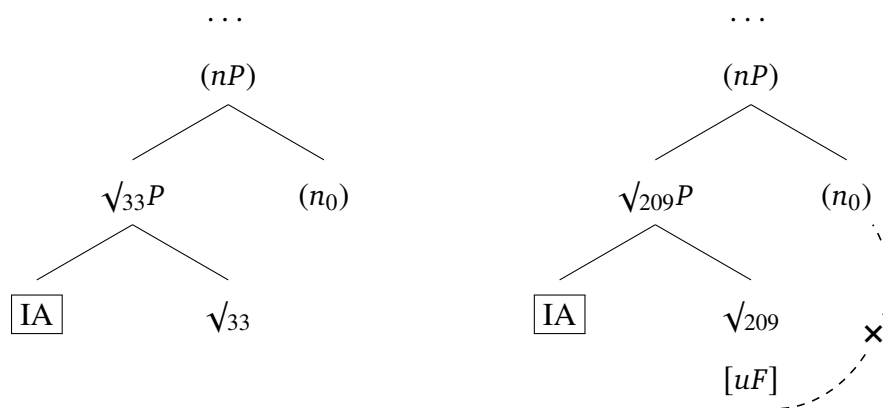
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<sup>20</sup>Although it would have to be more specific, in fact, as a  $uF$  that only native eventive/stative predicates have, and crucially not a feature that native referential Roots have, for example.



We would derive the ungrammaticality of native Roots in a structure like (89a) as a derivational crash that arises from the failure of to eliminate  $uF$  from  $\sqrt{209}$  when it is embedded under a nominal head. If  $n_0$  has no matching feature  $iF$ ,  $\sqrt{209}$  will be unable to establish a satisfactory probe-goal relation (92b). In contrast, because the Sino-Korean Root  $\sqrt{33}$  under this analysis is asserted to lack the  $uF$  feature, there is no issue with it being embedded directly under nominal functional structure (92a).

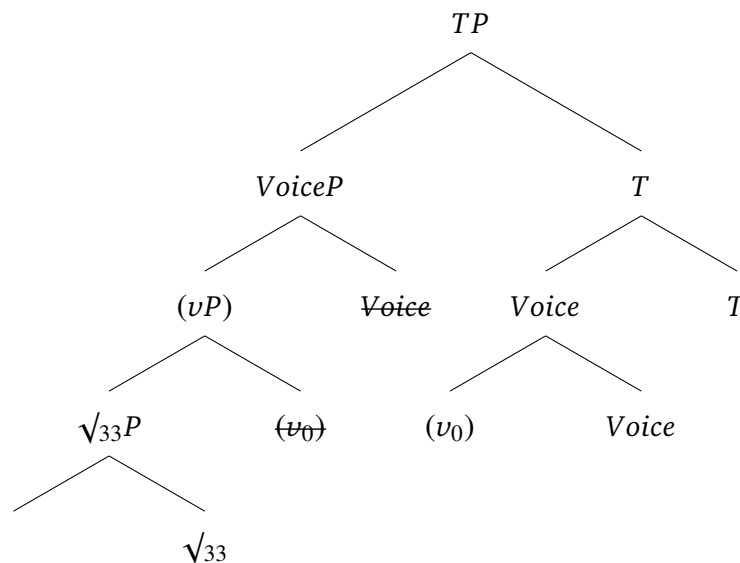
- (92) a. Sino-Korean Root (no issues)      b. \* Native Root (derivational crash)



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One potential issue with this approach is that the word-formation profile of the Korean verbal sequence seems similar to the type of word-formation via head movement that some researchers have argued should be allocated to the post-syntactic component of the grammar (see, e.g., [Harizanov & Gribanova 2019](#)), and so the success of this account is contingent on our independent commitments to the types of head movement operations available, and whether the complex head of the verbal sequence should be modeled syntactically or post-syntactically. Further, even if we take it to be true that the Korean verbal complex is indeed formed via syntactic head movement, we would need to consider further what the hypothesized lack of head movement for the SKL Root means for our assumptions about syntax-prosody mapping. In the analysis sketched above, we've derived the syntactic facts by asserting that native Roots have a *uF* that triggers an upward search for a suitable target head to move up and adjoin to, while SKL Roots have no such feature. We therefore predict that SKLs should not be a part of the final complex head (93), when they are embedded within a verbal functional structure.

(93)



But, if we are committed to the stance that a phonological word  $\omega$  must correspond to a complex head constituent in the Syntax, then our analysis makes the wrong prediction. A Sino-Korean item can also appear morphologically and prosodically as one word with all the other exponents that make up the verbal sequence, suggesting that the Sino-Korean Root *does* undergo head movement after all<sup>21</sup>.

If we don't locate the source of ill-formedness in the Syntax, our other option is to supplement Late Insertion of exponents with the ability to rule out or constrain surface form realizations. This can be accomplished by restricting the environments in which a particular root can be expounded. The most straight forward way to accomplish is to posit that some roots have no “elsewhere” Vocabulary entries; this perspective has been argued for and developed by a number of researchers (see, e.g., Kennedy & Merchant 2000; Arregi & Nevins 2014; Kramer 2015). The central idea is that, if there is no context-free (elsewhere) entry for a given morpheme, then that morpheme will only be interpretable at PF in some, but crucially not all, syntactic contexts. One treatment of morphological realization that utilizes this approach comes from Kramer (2015), in her analysis of Amharic grammatical gender. For example, she observes that some roots, such as the root for “sun” (*s'ähay*) have a licensing condition that require them to be realized in the context of a little *n* that has an interpretable feminine feature (94).

$$(94) \quad \sqrt{S'ÄHAY} \Leftrightarrow [s'ähay] / \text{--- } n_{[+FEM]} \quad (\text{Kramer 2015: 54})$$

Without an elsewhere entry, if  $\sqrt{S'ÄHAY}$  is utilized in a structure that fails to meet this criteria— for example, if this Root is merged with an *n* that is specified as masculine—

---

<sup>21</sup>It is possible to accomplish a similar analysis with post-syntactic head movement, such as Harizanov & Gribanova (2019)'s mechanism of Amalgamation. Note, however, that Amalgamation is still controlled by a  $[\pm M]$  feature allocated to certain heads, and so without further supplementation the post-syntactic head movement operation will run into the same problem as syntactic head movement does in its predictions of prosodic constituency.

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then there will be no exponent that can be assigned, resulting in a PF derivational crash, under the assumption that there is a PF interface constraint that requires all morphemes in a structure to have a realization.

This approach can be extended relatively straightforwardly to account for native Korean roots, which must be realized in the context of verbal functional structure. Consider, for example, the following VI instructions in (95) for the Sino-Korean Root  $\sqrt{33}$  (*senhayk*, “to select”), the native Korean Root  $\sqrt{209}$  (*kolu-*, “to select”). If we take  $v_0$  to be the first head of the verbal functional sequence, we can specify a licensing condition for all native eventive Roots in Korean, such as  $\sqrt{209}$ , requiring them to be realized in the context of  $v_0$ . The loanword Roots, in contrast, have default entries, allowing them to be realized in both verbal and non-verbal contexts.

(95) Vocabulary entries for the relevant Roots:

$\sqrt{33} \Leftrightarrow \textit{senhayk} / \text{elsewhere}$

$\sqrt{209} \Leftrightarrow \textit{kolu-} / \text{--- } v_0$

One nice upshot of this proposal is it gives us a nice way of defining “boundedness” formally; to be a bound form is to be an exponent that lacks an elsewhere realization. One residual issue comes from the empirical observation that the morphological realizations of native eventive Roots in Korean always encode information about valency, suggesting that they are conditioned by Voice in some way. If we were to assume that Voice is instead the lowest head of the verbal extended projection, we could more directly capture this intuition, as in (96).

(96)  $\sqrt{209} \Leftrightarrow \textit{kolu-} / \text{--- Voice}$

This gets us closer to full empirical coverage, but there is one more concern that

arises for irregular verbs in Korean, of which  $\sqrt{209}$  (*kolu-*, “to select”) happens to be. Irregular verb forms in Korean are conditioned by T:  $\sqrt{209}$  has an irregular form *kolla-*, which appears in the context of past or present tense (97). But, we have already asserted that native root exponents need to be conditioned by Voice, and so we have a situation where the conditioning environment seems to require non-local information, such that both Voice and T can play a role in conditioning the form of the root exponent.

- (97)    *hoseki-ka*    *khatu-lul* ***kolla-ss-ta***  
Hoseok-NOM card-ACC select-PST-DECL  
“Hoseok chose/selected a card.”

One way to resolve this concern would be to supplement the analysis with the mechanism of Spanning (Svenonius 2012, 2016; Bye & Svenonius 2012; Merchant 2015), a Late Insertion framework which is designed to capture exactly these kinds of apparent instances of non-adjacent suppletive conditioning.

The spanning hypothesis (Svenonius 2012, 2016; Bye & Svenonius 2012; Merchant 2015) asserts that “spans”, rather than terminal nodes, are the loci for Vocabulary Insertion. Svenonius (2012) defines a span as a contiguous sequence of heads in a head-complement relation—Merchant (2015) provides a formalization of this (98) that allows spans to be defined in an ordered  $n$ -tuple of terminal nodes post-Linearization, such that we can consider contextual allomorphy in terms of the linear adjacency of spans. Spans compete with each other for insertion, and the same general rule for competition between exponents applies: the most specific one wins. Merchant (2015) also puts forth the *Span Adjacency Hypothesis*, which suggests that allomorphy is conditioned by linearly adjacent *spans*.

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- (98) Let  $T$  be an ordered  $n$ -tuple of terminal nodes  $\langle t_1, \dots, t_n \rangle$  such that for all  $t \in T$ ,  $t = t_1$  or  $t$  is an element of the extended projection of  $t_1$ .
- a. For all  $k = 1 \dots n$ ,  $t_k$  is a span. (Every node is a trivial span.)
  - b. For any  $n > 0$ , if  $t_k$  is a span, then  $\langle t_k, \dots, t_{k+n} \rangle$  is a span.

(Merchant 2015: 288)

With spans, we can capture the intuition that native Korean Roots have forms which necessarily coincide with verbal structure, while Sino-Korean Roots do not, by specifying that native Root exponents correspond to spans that include Voice, while loanword Root exponents simply correspond to the trivial singleton span of just the Root. For demonstration, consider the following Vocabulary Entries, for native predicate *kolu-* and Sino-Korean predicate *senhayk* (99).

- (99) Vocabulary entries for spans that include Roots:

$$\begin{aligned}
 \langle \sqrt{33} \rangle &\Leftrightarrow \textit{senhayk} / \text{elsewhere} \\
 \langle \sqrt{209}, (v_0), \textit{Voice} \rangle &\Leftrightarrow \textit{kolla-} / \text{---} \{ \langle T_{\text{PAST}} \rangle, \langle T_{\text{PRES}} \rangle \} \\
 &\Leftrightarrow \textit{kolu-} / \text{---} \langle T \rangle
 \end{aligned}$$

The boundedness of a native root is accounted for given the absence of an elsewhere entry, and its suppletive form is correctly triggered in the context of a  $T$  specified as either past or present. The empirical observation that all native verbs in Korean idiosyncratically encode information about Voice is accounted for as well, since all native exponents correspond to spans which necessarily contain Voice.

To model the complete paradigm, we also need the following spans for  $\langle (v_0), \textit{Voice} \rangle$  and  $\langle n_0 \rangle$ , given in (100). Note that the conditions for *-ki* differ depending on whether we are assuming if a categorizer like  $n_0$  can be in the immediate context of a Root or

not; if yes, then we need to add a context specification to ensure that *-ki* is only selected as the exponent of a VoiceP nominalizer.

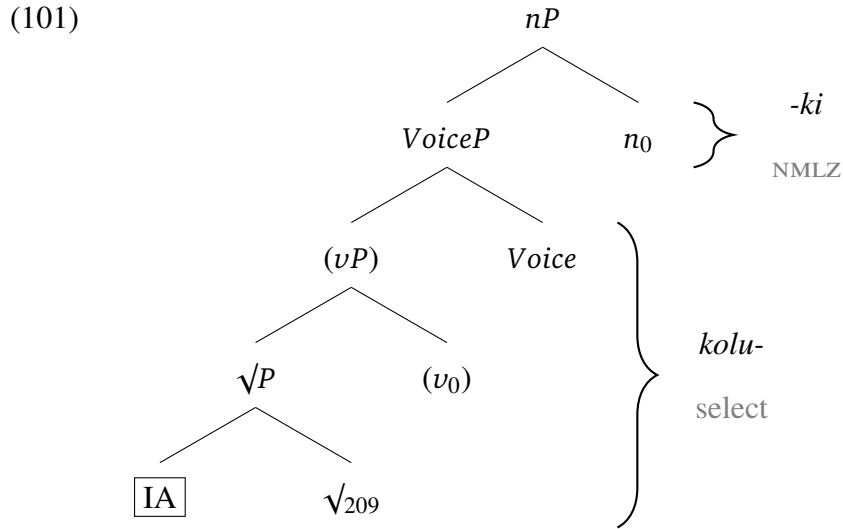
(100) Vocabulary entries for relevant spans of functional morphemes

$\langle (v_0), \text{Voice} \rangle \Leftrightarrow \text{-ha-} / \text{ elsewhere}$

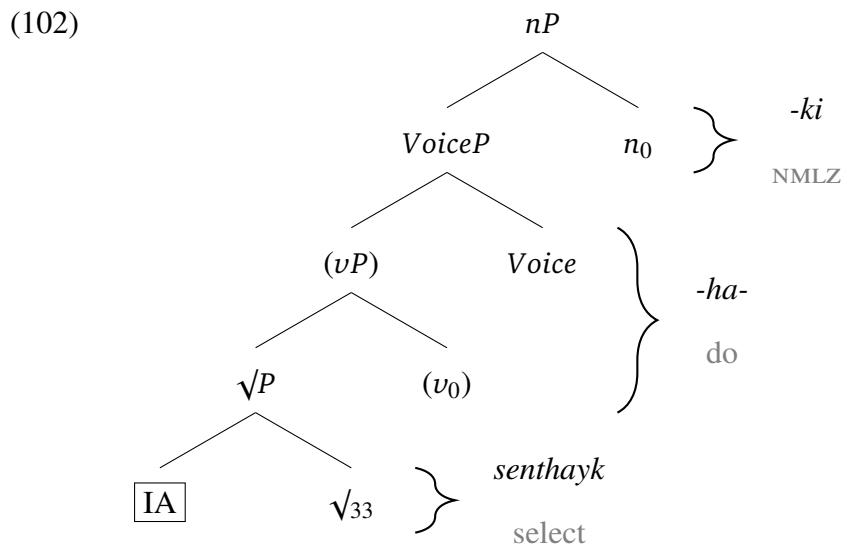
$\langle n_0 \rangle \Leftrightarrow \text{-ki} / \text{ elsewhere OR } \{ \langle (v_0), \text{Voice} \rangle, \dots \} \text{ ---}$

Though spanning still assumes competition among exponents, something a bit opaque about this approach is the exact loci of competition. Some Late Insertion accounts assume an “inside out” approach to insertion, such that Vocabulary Items are inserted into the left-most node of the linearized string, and then the next immediately adjacent one, and so on and so forth (Bobaljik 2012; Embick 2010; Arregi & Nevins 2012). It is unclear whether it would be possible to model competition as serial in this way under spanning, because in order for spans to compete with each other, the entire string has to be available for the insertion process, so that there can be some calculus for fitting the exponents like puzzle pieces in a way that optimizes based on the specifications of each Vocabulary Item.

For example, consider the predicate structure in (101) which utilizes the native Root  $\sqrt{209}$ . This is a deverbal nominalization, which is expected to be capable of licensing a VP adverb. Per the options in (99), we insert the exponent *kolu-*, as the allomorph *kolla-* has a conditioning context that is not satisfied in (101). The entry for  $\langle (v_0), \text{Voice} \rangle$  in (100) is presumably another potential competitor for insertion at Voice, and is also an elsewhere form, so we need some global condition on insertion that gives higher priority to larger spans over smaller spans, so that we ensure that *kolu-* is inserted over *ha-*. Per (100), the nominalizer exponent *-ki* is inserted for the trivial span of  $\langle n_0 \rangle$ .

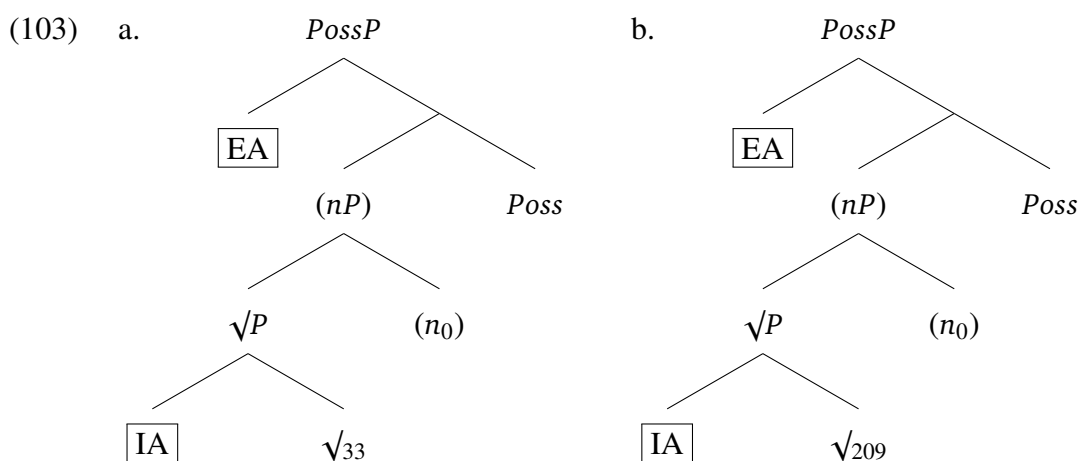


Next, consider the predicate structure in (102), which utilizes the SKL Root  $\sqrt{33}$ . As a deverbal nominalization, this structure is also predicted to be capable of licensing a VP adverb. Here, the span for  $\langle \sqrt{33} \rangle$  in (99) is chosen, and the entries in (100) for  $\langle (v_0), Voice \rangle$ , and  $\langle n_0 \rangle$  expone the functional structure above the Root.



Next we turn to the non-verbal AS-Nominals, as in the structures in (103). These

two structures are predicted to disallow VP adverbs. Recall, too, that we want to rule out (103b), which is a non-verbal AS-Nominal formed with the native Root  $\sqrt{209}$ . Just to make things more concrete, I add the Poss head (as the introducer of the external argument), which does not have an overt exponent in Korean, to give us another functional morpheme above the Root.



Deriving the ungrammaticality of (103b) is straightforward: under the perspective that the absence of an elsewhere entry for a particular span will result in a PF derivational crash, (103b) is ungrammatical because there is no exponent stored that can satisfactorily pronounce the trivial span of native Root  $\langle \sqrt{209} \rangle$ . The only exponents with coordinates mapping  $\sqrt{209}$  to a pronounceable sequence correspond to the larger span  $\langle \sqrt{209}, (v_0), Voice \rangle$ , listed earlier in (99). In contrast, (103a) is grammatical because the loanword Root  $\sqrt{33}$  *does* have an exponent stored for the singleton span  $\langle \sqrt{33} \rangle$ .

There is one more residual issue that arises, however. Another tenet of the spanning framework is that null exponents do not exist, which complicates this analysis a bit—according to the logic here, (103b) is no good because there is no set of exponents that

## §2.4 Loanwords: exceptional, or universal?

can satisfactorily work together to pronounce it. However, according to this same logic, we haven't quite successfully created a set of Vocabulary Entries that can pronounce the grammatical structure in (103a), either. We have an entry that can expone the Root itself, but Korean has no exponents that correspond to *Poss* (there is never an overt morphological indication on the stem that a nominal has a possessor, only GEN marking on the possessee), and if  $n_0$  is indeed the next head above the Root, it, too, never has an overt exponent in the context of any Sino-Korean vocabulary items.

We could attempt to resolve this by altering the Vocabulary entry options for  $\sqrt{33}$  to include a number of spans that all have the same exponent, as in (104). Note that we need to keep the trivial span  $\langle \sqrt{33} \rangle$ , in order to have a means to pronounce the verbal structure (102) discussed earlier.

- (104) Alternative entries for the SKL Root  $\sqrt{33}$
- |                                          |                                               |
|------------------------------------------|-----------------------------------------------|
| $\langle \sqrt{33} \rangle$              | $\Leftrightarrow$ <i>senthayk</i> / elsewhere |
| $\langle \sqrt{33}, (n_0) \rangle$       | $\Leftrightarrow$ <i>senthayk</i> / elsewhere |
| $\langle \sqrt{33}, (n_0), Poss \rangle$ | $\Leftrightarrow$ <i>senthayk</i> / elsewhere |

These additional entries for all the various possible nominal functional spans will resolve the technical issues with implementing Spanning, but adding these reduces the explanatory adequacy of the account— not only do we have redundant entries listed for each Sino-Korean Root, we also no longer have a clear motivation as to why, if Sino-Korean Roots can have their same form listed for multiple spans, the native Roots only have exponents that correspond to  $\langle \sqrt{\phantom{x}}, (v_0), Voice \rangle$  spans. To resolve these issues, we require a much more in depth exploration of the extended nominal domain of Korean, to see if there is any way to make sense of the lack of overt material for the

nominal functional structure, without losing the gains made from applying spanning to the Korean verbal functional spine and its morphological realization.

In short, the perspective outlined in [Kramer \(2015\)](#) and related works provides us a clear method for restricting certain Vocabulary Items to specific syntactic contexts, and if this approach is supplemented with Spanning, we can fully model the morphotactics of native vs. loanword predicate forms in Korean. The proposed analysis gives us a way to post-syntactically encode information about the structures that a given morphological form is allowed to be associated with, without storing actual syntactic structures in List 3— and, we are able to capture the fact that the forms of native Korean predicates always encode something about Voice and always create deverbal nominalizations, by restricting the shape of the span their exponents target. It is appealing, too, to consider the idea that loanwords and native exponents could differ consistently in the size of the span they expone, which makes interesting predictions about the morphological paradigms we expect to see loanwords and native vocabulary items participating in (with room to theorize about cross-linguistic variation). There are, however, remaining challenges with the implementation when it comes to the surface forms of non-verbal SKL AS-Nominals. Further consideration of the Korean nominal functional spine is needed in order to adequately resolve these complications.

## **§ 2.5 Concluding remarks**

In this chapter, I argued that Roots are the introducers of internal arguments, and leveraged data from Sino-Korean AS-Nominals and complex predicates to defend the claim that internal arguments are *not* syntactically or semantically severed from the

lexical predicate. The empirical evidence in favor of this perspective comes from cross-constructional comparison; the same Sino-Korean Roots found in complex predicates are also found in AS-Nominals, and these respective verbal and nominal environments fail diagnostics for functional structure that would implicate a mixed category or embedded functional structure analysis. AS-Nominals created from SKL Roots disallow adverbs, indicating an absence of verbal functional structure, and verbal predicates created from SKL Roots disallow adjectives, indicating an absence of nominal functional structure. Yet both constructions allow the IA, indicating that it must be the Root, the only commonality these two constructions share, which licenses the internal argument.

In formalizing the analysis, I adopted the [Harley \(2014\)](#) approach to Roots, allowing Roots to be syntactic heads (formally individuated with arbitrary indices) that project phrases, and if they have an IA, this IA can be realized as the Root's sister. In LF, Roots have corresponding LF denotations as predicates: argument-introducing Roots denote two place predicates, represented with classical Davidsonian semantics (for example,  $\lambda x_e \lambda e_s. [P(x)(e)]$ ).

Despite the cross-linguistic tendency for AS-Nominals to embed verbal structure, I argued that it is not the case that the  $\sqrt{P}$  is simply an exceptional structure available only to loanwords. I take the stance that the  $\sqrt{P}$  is indeed a more general truth about the organization of syntactic argument structure— if this is correct, then it must be the case that the morpho-phonotactic constraints of a given language, which loan and native vocabulary items often have different sensitivity to, conspire to make it possible or impossible for certain syntactic structures to be realized. In fleshing out how this hypothesis could be formalized under a post-syntactic approach to morphology, I developed a DM-compatible analysis that incorporated insights on using licensing conditions

## *Chapter 2 Loanwords and the $\sqrt{P}$ Hypothesis*

to restrict the realization of Vocabulary Items to specific syntactic contexts (Kramer 2015; Arregi & Nevins 2014; Kennedy & Merchant 2000), supplemented with Spanning (Svenonius 2012, 2016; Merchant 2015) to give a fuller account of the morphology of Korean verbal predicates. Regardless of the exact formal analysis ultimately adopted to explain the Korean native vs. loan paradigms, any account that maintains the strict ordering of PF after Syntax must implement some means by which the PF module can filter out deviant syntactic structures.

In the service of the broader goals of the dissertation, this chapter can be thought of as laying the foundation of a number of commitments that will shape the analyses of Chapters 3 and 4. The first and most important one is the commitment to Roots as argument-introducing predicates. The second commitment is less of a claim, and more of an important generalization that serves as a valuable diagnostic for investigating questions on the nature of argument structure: while the exact formalization of the morphological forms of loan vs. native predicates in Korean remains open-ended, what we can be certain of is that the Sino-Korean exponents are, themselves, exponents of Roots directly. We know this to be true given the same cross-categorical arguments that motivated the  $\sqrt{P}$  Hypothesis—the exponent of the Sino-Korean morpheme is always analytically divorced from the functional structure it finds itself embedded in.

In the coming chapters, I make two choices that have been discussed and motivated to some extent in this chapter, though they leave some questions unresolved. My choice in adopting these is implementational; they provide me a consistent and systematic way to represent the syntactic structures of complex predicates. First, I chose to adopt and implement the Spanning analysis for complex predicates in Korean; despite the imperfections of extending the framework to capture the full distribution of surface

## §2.5 *Concluding remarks*

forms (for the extended nominal domain, in particular), the Spanning analysis is very successful in modeling the surface forms of the complex predicates in Korean, and as such I choose to adopt this formalization when notating associated morphological forms. The analyses of Chapters 3 and 4, which largely prioritize syntax-semantics interface considerations, do not hinge on or require Spanning.

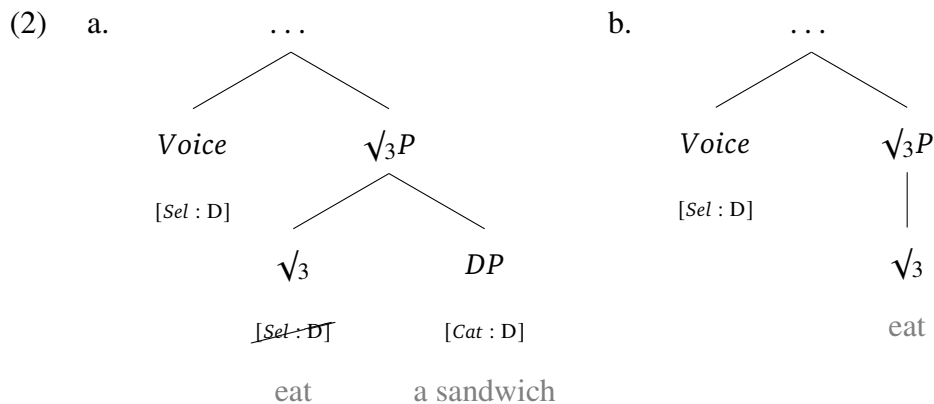
Second, I adopt the assumption that there is no categorizing head above the Root in Korean. Though properly motivating this as a cross-linguistic claim warrants further discussion, we will see empirically that there are some instances in Korean where a  $\sqrt{P}$  does not have a categorizing head above it, again providing additional support that these categorizing heads are unnecessary to posit, and, at least in some cases, *cannot* be posited.

## Chapter 3

### Beyond sisterhood, part 1: non-realization

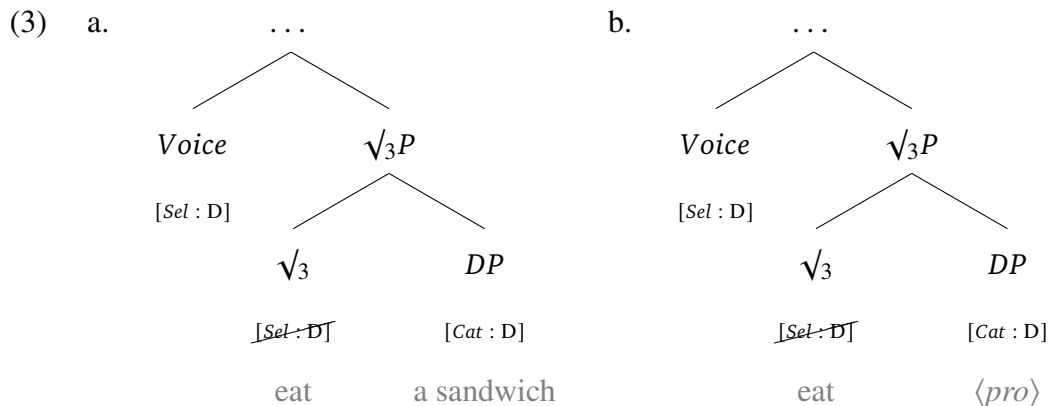
This chapter puts under close scrutiny the obligatory nature of syntactic argument projection— does syntactic argument projection always occur? Under a selectional approach to argument introduction, the presence or absence of a syntactic argument must be regulated by the presence or absence of selecting features. The syntactic difference between (1a) and (1b), under this view, would be simply that the Root  $\sqrt{3}$  (“eat”) sometimes has a  $[Sel : D]$  feature, and sometimes it doesn’t (2).

- (1) a. The woman ate a sandwich.  
b. The woman ate.



Of course, this hypothesis runs into the problem of collapsing the distinction between a predicate structure of (2b) with the predicate structure of unergative verbs, which is not what we want. But how do we represent the optionality of the internal argument of “eat”, while still differentiating “eat” from predicates that obligatorily disallow internal arguments, such as “laugh”, or “sleep”? Further, this implementation relies on the positing of two different grammatical feature bundles for “eat”, one that has an internal argument and one that does not. Yet this does not entirely align with our intuitions about the meaning of (1b); despite no overt internal argument, this sentence still entails that *something* was eaten—we just don’t know what.

Given these concerns, we might alternatively hypothesize, within the selectional approach, that Roots with arguments always have corresponding selectional features. However, the internal argument itself, though syntactically present, might be phonologically elided or “pro-dropped”, i.e., not overtly expressed, given sufficient context. This alternative allows us to hold constant our assumptions about the syntactification of two-place predicates as syntactic heads that have a particular selectional feature specification, while also managing to differentiate transitive verbs with “non-expressed” arguments from unergative verbs that truly have no internal argument at all.



This alternative hypothesis makes an empirical prediction that all syntactic signatures associated with the syntactic presence of an internal argument should hold for any structure that an argument-introducing Root partakes in, because syntactic argument introduction, under this perspective, is obligatory. While the internal argument (IA) itself might be able to be elided, its non-pronunciation should be a consequence of PF operations, and as such its presence in the syntax should have all the usual syntactic consequences associated with internal arguments (case assignment, object shift, agreement, etc.). Through a close investigation of classificatory incorporation in Korean, I will argue that this empirical prediction made by the selectional feature account of argument introduction is not borne out. Instead, we are lead to the alternative hypothesis that syntactic argument introduction is, in fact, always optional, as one of two possible ways that the semantic argument of an argument-introducing predicate can be represented/realized syntactically.

Part of Chapter 2's argumentation for the  $\sqrt{P}$  Hypothesis involved the comparison of AS Roots (4) with non-AS Roots (5). I showed that the host of a Korean complex predicate can be either an AS or a non-AS Root, and that both types of predicates license a transitive construction, where an apparent object surfaces with accusative case.

- (4)    *yenkwuwen-i    tongkwul-ul **thamkwu**-ha-yss-eyo*  
researcher-NOM cave-ACC    explore-do-PST-DECL  
“The researcher explored the cave.”

- (5)    a.    *namcwuni-ka    mwuncang-ul khu-key **mal**-ha-yss-eyo*  
Namjoon-NOM sentence-ACC big-ADV word-do-PST-DECL  
“Namjoon said (a/the) sentence loudly.”

- b. *ku kaswu-ka cayen-uy alumtawum-ul cacwu nolay-ha-yss-eyo*  
 that singer-NOM nature-GEN beauty-ACC frequently song-do-PST-DECL  
 “That singer often sang of nature’s beauty.”

Throughout this chapter, I will refer to complex predicates involving an AS Root, like (4), as “SKL predicates”, and complex predicates involving a non-AS Root, like those in (5), as “denominal” predicates. This terminology is not intended as a claim about the actual syntactic category of lexical items like *mal* and *nolay* when they are used in complex predicates— in fact, per Chapter 2, they are  $\sqrt{(P)}$ s, *not* of the category N. However, the term “denominal predicate” is less of a mouthful than “non-AS Root complex predicate”, and is a bit more intuitive, in the broader context of linguistic paradigms where a purely referential lexical item that often heads a nominal phrase is transformed into a predicate through the addition of verbal affixes of some kind.

Unlike SKLs, the Roots utilized in denominal predicates cannot create AS-Nominals (6). When used to build nominals, these Roots are exclusively referential (7).

- (6) a. \* *namcwuni-uy cac-un mwuncang(-uy) mal*  
 Namjoon-GEN frequent-ADJ sentence(-GEN) word  
 Intended: “Namjoon’s frequent saying of sentence(s)”
- b. \* *kaswu-uy cac-un cayen-uy alumtawum(-uy) nolay*  
 singer-GEN frequent-ADJ nature-GEN beauty(-GEN) song  
 Intended: “The singer’s frequent singing of nature’s beauty”
- (7) a. *i mwuncang-un mal-i manh-ayo*  
 this sentence-TOP word-NOM be.many-PRS.DECL  
 “This sentence has a lot of words.”

Chapter 3 *Beyond sisterhood, part 1: non-realization*

- b. *hanyengi-ka cohaha-nun nolay-ka latio-eyse hullenao-ass-eyo*  
 Hanyoung-NOM like-ADJ song-NOM radio-on flow.OUT-PST-DECL  
 “The song (that) Hanyoung likes played on the radio.”

Importantly, the apparent internal argument that is licensed in the denominal predicate construction, is *not* licensed in a nominal construction (7). Therefore, despite accusative case surfacing on both the IA of an SKL in (4) and on something that looks IA-like in the denominal constructions (5), we cannot treat these accusative-marked phrases (henceforth ACC-phrase) as being equivalent in their argument status— while the ACC-phrase of an SKL predicate is an internal argument of the SKL, we cannot make the same claim about the ACC-phrase of a denominal predicate, since the Roots of these predicates do not have argument structure (6).

Further disentangling ACC-marking from internal argument status, Chapter 2 additionally showed that the two breeds of transitive constructions in (4–5) do not exhibit the same differential object marking behavior. Optional case marking is available only for objects that surface adjacent to an SKL predicate (8); apparent objects of denominal predicates need accusative case, regardless of position (9).

- (8) a. *cikwen-i kongkum\*(-ul) cacwu hoynglyeng-ha-yss-eyo*  
 worker-NOM fund\*(-ACC) frequent.ADV embezzle-do-PST-DECL  
 “The worker frequently embezzled the funds.”
- b. *cikwen-i cacwu kongkum(-ul) hoynglyeng-ha-yss-eyo*  
 worker-NOM frequent.ADV fund(-ACC) embezzle-do-PST-DECL  
 “The worker frequently embezzled (the) funds.”

- (9) a. *namcwuni-ka mwuncang\*(-ul) khu-key mal-ha-yss-eyo*  
 Namjoon-NOM sentence\*(-ACC) big-ADV word-do-PST-DECL  
 “Namjoon said (the/a) sentence loudly.”
- b. *namcwuni-ka khu-key mwuncang\*(-ul) mal-ha-yss-eyo*  
 Namjoon-NOM big-ADV sentence\*(-ACC) word-do-PST-DECL  
 “Namjoon said (the/a) sentence loudly.”

In Chapter 2, I suggested that optional accusative case is an empirical signature which indicates the availability of the sister position to the Root: it follows straightforwardly that a sister position would be unavailable for Roots that lack argument structure, explaining why optional case-marking is not possible for an apparent object of a non-AS Root complex predicate. This generalization provided evidence in favor of Roots driving the presence of argument structure for Chapter 2, since it revealed that the choice of Root mattered for whether or not certain IAs were licensed. This data also, however, adds an additional puzzle to the picture: though anything that originates as a complement to a Root is able to receive accusative case, not everything that gets accusative case in Korean originated as a complement to a Root. If the ACC-phrases of denominal predicates are *not* internal arguments, then what are they?

In navigating this puzzle, one must make a choice about where to add heterogeneity into the grammar: heterogeneity of internal arguments, such that internal arguments can be introduced in different structural configurations, or heterogeneity of accusative case assignment, allowing case to target things that are not true arguments of a predicate. If we want to maintain a one-to-one correspondence such that all things marked with accusative case are internal arguments of transitive predicates, we must diversify our

### *Chapter 3 Beyond sisterhood, part 1: non-realization*

understanding of the mapping of arguments to structure, and allow for the possibility that internal arguments could have distinct structural sources. Or, we can maintain a one-to-one correspondence such that all true IAs are reliably projected into the same position (sister to the predicate), in which case we consequently expand our understanding of accusative case, allowing for it to mark more than just internal arguments.

In this chapter, I will argue in favor of this latter perspective. Given that it has been independently shown and argued by Jou (2024) that both nominative and accusative case in Korean can mark phrases that are unambiguously adjuncts, I suggest that the ACC-phrases of Korean denominal predicates are also adjuncts which receive accusative case, and are *not* arguments. In particular, I suggest that these ACC-phrases are instances of “object doubling”, a phenomenon that has been identified and explored in literature on incorporation, where a higher phrase that looks object-like can be added to a structure that already has an incorporated internal argument; this higher “object” necessarily adds additional description to the incorporated argument itself (Borik & Gehrke 2015). I argue that *mal* in (5a) is itself the true internal argument of *ha-* (here a main verb “do”, *not* a light verb morpheme), and has an incorporated status. I propose an analysis of object doubling that builds on the accounts of both van Geenhoven (1998) and Chung & Ladusaw (2004): specifically, I argue that nominal adjuncts are possible in Korean so long as they appropriately denote predicates of some variable  $x$  contained in the denotation of the derivation’s root node, and so long as they meaningfully shrink the set of individuals corresponding to  $x$ .

The chapter is laid out as follows: Section §3.1 argues for an adjunct treatment of ACC-phrases in denominal predicates, first by providing background on attested case-marking on Korean adverbials (Jou 2024), and then arguing that the ACC-phrases under

### §3.1 Case-marking on adjuncts

evaluation have a very specific relationship to the host of the predicate that is crucially *not* one of thematic argumenthood, but rather one of predication. Section §3.2 next connects the paradigm to incorporation, highlighting in particular the phenomenon of “object doubling” and its similar characterization (Mithun 1984; van Geenhoven 1998; Borik & Gehrke 2015; Chung & Ladusaw 2004). In advance of my own proposal, I outline the syntax-semantic accounts of incorporation put forth in both van Geenhoven (1998) and Chung & Ladusaw (2004), discussing the key upshots and outstanding issues. Section §3.3, building on these two previous analyses, maps out my own analysis of object doubling, which shares many of van Geenhoven (1998) and Chung & Ladusaw (2004)’s guiding intuitions, but departs in a few crucial ways. I demonstrate how the proposal fares in predicting case assignment for nominal arguments and adjuncts under Jou (2024)’s theory of case in Korean. In Section §3.4, I discuss how the account extends to bare plurals and pseudo-incorporees. Finally, Section §3.5 concludes.

## § 3.1 Case-marking on adjuncts

Jou (2024) develops an analysis of case assignment in Korean utilizing Dependent Case Theory (Marantz 1991) and Cyclic Linearization (Fox & Pesetsky 2005). I will discuss the formal pieces of her case assignment algorithm in more detail in Section §3.3; here, I focus on describing the empirical paradigm of interest in her dissertation: durative (10a) and multiplicative (10b) adjuncts in Korean, which are marked for case.

- (10) a. *mina-ka han sikan-ul chayk-ul ilk-ess-ta*  
Mina-NOM one hour-ACC book-ACC read-PST-DECL  
“Mina read a book for one hour.”

- b. *mina-ka sey pen-ul kyengchal-ul pwull-ess-ta*  
 Mina-NOM three times-ACC police-ACC call-PST-DECL

“Mina called the police three times.”

(Jou 2024: 9)

Durative and multiplicative adjuncts are also attested as case recipients in Russian, Finnish, and German, and are characterized as “quantifying the event” (Fowler & Yadroff 1993; Maling 1993; Wechsler & Lee 1996; Pereltsvaig 2000; Jou 2024). Jou (2024) locates these adverbs as adjuncts that target the same position as manner adverbials (Cinque 1999): for her, these sit below the base position of the external argument, but above the base position of an internal argument.

Jou (2024) provides clear evidence confirming that, despite receiving accusative case, these phrases *must* be adjuncts. For one, she provides minimal pairs between these phrases when they are true arguments of a verb, e.g., (11), vs. when they are not (12). In (11), “three hours” is the object of the predicate “waste”, which, as a transitive verb, must occur with an object (unless that object is *pro*-dropped).

- (11) a. *mina-ka sey sikan-ul nangphi-ha-yss-ta*  
 Mina-NOM three hour-ACC waste-do-PST-DECL

“Mina wasted three hours.”

- b. *mina-ka welkup-ul nangphi-ha-yss-ta*  
 Mina-NOM salary-ACC waste-do-PST-DECL

“Mina wasted the salary.”

- c. \* *Mina-ka nangphi-ha-yss-ta*  
 Mina-NOM waste-do-PST-DECL

Not possible: “Mina wasted.”

(Jou 2024: 30–31)

### §3.1 Case-marking on adjuncts

In (12), “three hours” is a modifier, expressing the duration of the sleeping event—as such, it is completely grammatical to utter a sentence that lacks this ACC-phrase.

- (12) a. *mina-ka sey sikan-ul ca-ss-ta*  
 Mina-NOM three hour-ACC sleep-PST-DECL  
 “Mina slept three hours.”
- b. *mina-ka ca-ss-ta*  
 Mina-NOM sleep-PST-DECL  
 “Mina slept.” (Jou 2024: 31)

Jou (2024) also provides data points showing that these ACC-marked adjuncts can conjoin with other low adverbials, e.g. (13).

- (13) a. *mina-ka kip-hi kuliko manh-un sikan-ul ca-ss-ta*  
 Mina-NOM be.deep-ADV and many-ADN hour-ACC sleep-PST-DECL  
 “Mina slept soundly and (for) many hours.”
- b. *mina-ka yele pen-ul kuliko sikkulep-key solichi-ess-ta*  
 Mina-NOM several time-ACC and be.loud-ADV shout-PST-DECL  
 “Mina shouted several times and loudly.” (Jou 2024: 32)

She argues that these data are evidence that these ACC-phrases are *not* nominal, but must be AdvPs. However, given that both multiplicatives/duratives and adverbs can also co-occur with prepositional phrases, too (14), unless we want to assume that PP adjuncts are *also* AdvPs, then while these conjunction data provide evidence that durative and multiplicative ACC-phrases are certainly adjuncts, coordination is not enough to definitively prove what the containing category of these elements must be.

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- (14) a. *mina-ka manh-un sikan-ul kuliko phyenan.ha-n peykay-wa*  
 Mina-NOM many-ADN hour-ACC and comfortable-ADJ pillow-with  
*hamkkey ca-ss-ta*  
 together sleep-PST-DECL  
 “Mina slept (for) many hours and with a comfortable pillow.”
- b. *mina-ka kip-hi kuliko phyenan.ha-n peykay-wa hamkkey*  
 Mina-NOM be.deep-ADV and comfortable-ADV pillow-with together  
*ca-ss-ta*  
 sleep-PST-DECL  
 “Mina slept deeply and with a comfortable pillow.”

Having established that ACC case is attested on Korean adjuncts, I propose that the ACC-phrases in denominal predicate constructions are adjuncts as well. The reason is simple: these phrases have a semantic relationship with the Root at the center of the predicate, that is crucially not one of argumenthood but one of predication. Consider, for example, the possible satellite phrases that can co-occur with *mal-ha-*, “word-do”, meaning “to say” or “to speak”. The allowed ACC-phrases are extremely restricted: only things that directly restrict the set of possible words/uttered content are possible (15).

- (15) a. *namcwuni-ka mwuncang-ul mal-ha-yss-eyo*  
 Namjoon-NOM sentence-ACC word-do-PST-DECL  
 “Namjoon said (the/a) sentence.”
- b. *sasil-ul mal-hay-cwu-sey-yo*  
 truth-ACC word-do-APPL-HONORIFIC-IMP  
 “(Please) tell (me) the truth.”

### §3.1 Case-marking on adjuncts

An ACC-phrase providing information about the topic of discussion, or the language one is communicating in, are also considered ungrammatical (16)— these instead must be expressed as oblique arguments (17).

- (16) a. \* *ywunki-ka ecey-uy saken-lul mal-ha-yss-eyo*  
 Yoongi-NOM yesterday-GEN incident-ACC word-do-PST-DECL  
 Intended: “Yoongi spoke about/discussed yesterday’s incident.”

- b. \* *na-nun hankwuke-lul cacwu mal-hay-yo*  
 1P.SG-TOP Korean-ACC frequent.ADV word-do.PRS-DECL  
 Intended: “I often speak Korean.”

- (17) a. *ywunki-ka ecey-uy saken-ey tayhay mal-ha-yss-eyo*  
 Yoongi-NOM yesterday-GEN incident-OBL about word-do-PST-DECL  
 “Yoongi spoke about yesterday’s incident.”

- b. *na-nun hankwuke-lo cacwu mal-hay-yo*  
 1P.SG-TOP Korean-INST frequent.ADV word-do.PRS-DECL  
 “I often speak (in) Korean.”

Both of the oblique arguments (17), “about yesterday’s event” and “in Korean” can be reasonably construed as satellite event participants of the speaking event that the full predicate *mal-ha-* denotes, or at least modifiers that provide additional constraints on the event of “speaking”. The grammatical ACC-phrases in (15), however, do not refer to event participants of the speaking events, nor do they even provide constraints on the event of “speaking” at all. They must directly describe the *content* of the actual words expressed.

We find the same distribution for possible ACC-marked phrases available for the

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predicate *cilmwun-ha-*, too; “question-do”, meaning “to ask” or “to question”. While the overall acceptability of an ACC-phrase for this denominal predicate is less consistent than those for *mal-ha-*, some native Korean speakers accept (18), where the ACC-phrase names the actual question asked or addressed, in a test-taking context.

- (18) *chayuni-ka kwacay il pen-ul cilmwun-ha-yss-eyo*  
Chaeun-NOM task one CL-ACC question-do-PST-DECL  
“Chaeun asked question number 1.”

Again, the grammatical use of an ACC-phrase involves a nominal phrase that describes the entity denoted by the non-AS Root. To describe an asking event where something is “asked about” or “asked for”, ACC case is strictly ungrammatical (19–20).

- (19) a. \**ywunki-ka ecey-uy saken-ul cilmwun-ha-yss-eyo*  
Yoongi-NOM yesterday-GEN incident-ACC question-do-PST-DECL  
Intended: “Yoongi asked about yesterday’s incident.”  
b. *ywunki-ka ecey-uy saken-ey tayhay cilmwun-ha-yss-eyo*  
Yoongi-NOM yesterday-GEN incident-OBL about question-do-PST-DECL  
“Yoongi asked about yesterday’s incident.”
- (20) a. \**kil-ul cilmwun-hay-ya tway-yo*  
path-ACC question-do-OBLIG AUX.PRS-DECL  
Intended: “(I) need to ask directions.”  
b. *kil-ey tayhay cilmwun-hay-ya tway-yo*  
path-OBL about question-do-OBLIG AUX.PRS-DECL  
“(I) need to ask for directions.”

### §3.1 Case-marking on adjuncts

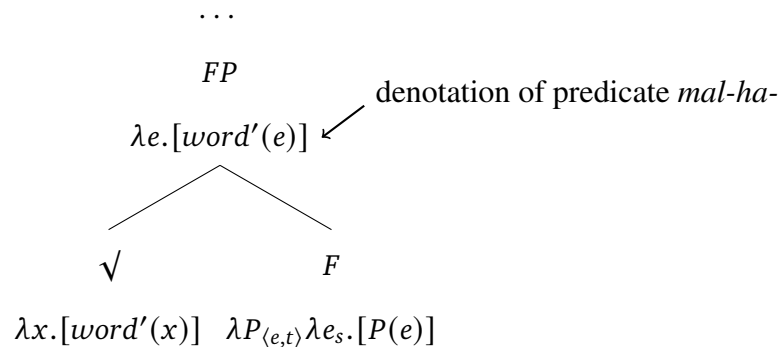
There is a nice minimal pair between the denominal predicate *cilmwun-ha-* and the non-denominal native predicate *mwulepo-* (“to ask/inquire”). For this predicate, you can easily use accusative case for the topic of inquiry:

- (21) *kil-ul mwulepwa-ya tway-yo*  
 path-ACC inquire-OBLIG AUX.PRS-DECL  
 “(I) need to ask (for) directions.”

The only grammatically licensed ACC-phrases for denominal predicates are those that *modify* the Root. In other words, the relationship that these phrases have to the Root of the denominal predicate is *not* one of thematic argumenthood, but one of predication. A “sentence” reasonably restricts the possible set of words/phrases produced in a speaking context, and “number 2” picks a specific question of the set of possible questions addressed in a test-taking context.

It is for this reason that I here rule out and set aside a “conversion” account of denominal predicates, one where a referential Root of type  $\langle e, t \rangle$  is converted to a predicate of type  $\langle s, t \rangle$ , as in (22), assuming *ha-* here to be a PF repair assisting in the pronunciation of some verbal functional structure accomplishing said-conversion.

- (22) \* Type-shifting “conversion” account:



The “conversion” account in (22) is untenable, because the resulting denotation of *mal-ha-* is an unergative predicate. It lacks the variable  $x$  that is part of the denotation of *mal* (“word”), which the ACC-phrase *mwuncang-ul* (“sentence-ACC”) must modify. It is therefore necessary that *mal* denotes a property of type  $\langle e, t \rangle$ , such that this variable is present in the denotation of the denominal predicate. Without yet making any explicit commitments to the syntactic identity of these pieces, we can represent the semantic denotation of *mal* as (23), and the semantic denotation of *mal-ha-* as (24). Here, the contribution of *ha-* is represented as a main predicate “do”.

$$(23) \quad \llbracket mal \rrbracket = \lambda x_e. [word'(x)]$$

$$(24) \quad \llbracket mal-ha- \rrbracket = \lambda x_e \lambda e_s. [do'(e)(x) \wedge word'(x)]$$

The ACC-phrase *mwuncang-ul* (“sentence-ACC”) is then an adjunct, which provides modification that, when composing with the complex predicate in (24) restricts the  $\lambda$ -bound  $x$  variable. The characterization draws a close parallelism between ACC-phrases in these constructions to the adjuncts described in Jou (2024), except that instead of describing the event argument, these adjuncts describe the Root at the core of the denominal predicate. The Root must, *minimally*, be contributing a non-saturated  $x$  variable slot such that  $x$  is a word (23), so that there is an appropriate variable that an adjunct can restrict.

In additional support of this characterization, it is noteworthy that, in Korean, the use of *mal-ha-* is disallowed when the intended “saying” event is one where no literal speech is involved. For example, in a “legend says” context (25), or in a context where one is reporting about the text on a sign (26), one can only use *ha-*; adding *mal* is disallowed.

### §3.1 Case-marking on adjuncts

- (25) *censel-ey ttalu-myen ku san-ey ywulyeng-i iss-ta-ko*  
 legend-OBL follow-COND that mountain-LOC ghost-NOM exist.PRS-DECL-QUOT  
 (\*mal)-ha-yss-ta  
 (\*word)-do-PST-DECL  
 “Legend says a ghost lives on that mountain.”
- (26) *phyociphan-i memchwu-la-ko (\*mal)-hay-yo*  
 sign-NOM stop.PRS-IMP-QUOT (\*word)-do.PRS-DECL  
 “The sign says ‘Stop’.”

These data points suggest, consistent with the analysis of *mal* as contributing an individual variable *x* such that *x* is a word, that the predicate *mal-ha-* makes obligatory reference to “words”—in a context where no actual words were stated, *mal* is disallowed.

What should the denotation of the nominal adjunct, the ACC-phrase, be? It must be a property of *x*, so that it can compose via predicate modification. Drawing from prior analyses that treat “noun-complement” clauses as modifiers (Stowell 1981; Grimshaw 1990; Jenks 2014), I suggest a parallel treatment of apparent objects like *mwuncang-ul* in (15a). For one, it is useful to note that the referential Roots that allow this type of adjunct to occur are the same ones that allow noun-complement clauses, e.g. (27).

- (27) *san-ey ywulyeng-i iss-ta-nun mal*  
 mountain-LOC ghost-NOM exist.PRS-DECL-ADN word  
 “the word/claim/statement that there is a ghost on the mountain”

In particular, I draw on the syntax-semantics account of noun-complement clauses in Thai as modifiers from Jenks (2014). In accounting for the distribution of a particular complementizer morpheme in Thai that is obligatory for both relative clauses (RCs) and

noun-complement clauses, Jenks (2014) argues that the presence of this complementizer is an empirical signature of being “predicativized” (cf. Predicate Abstraction; Heim & Kratzer 1998: 96), and that, despite the lack of a gap, “noun-complement” (NC) clauses should also, just like RCs, be analyzed as clausal predicates and modifiers. Jenks (2014) argues that for NC clausal modifiers, the predicativizing operation that occurs is IDENT, which derives predicates from arguments (Potts 2002; Partee 1987)<sup>1</sup>, defined in (28).

$$(28) \quad \text{IDENT}(x) \equiv \lambda y. [y = x] \quad (\text{Jenks 2014: 322})$$

For the relevant NC clausal modifiers, the argument that is turned into a predicate with IDENT is a propositional individual  $p$ . I extend this straightforwardly to suggest that the same operation can also turn a type  $e$  individual into a predicate as well. The Korean adjunct *mwuncang-ul*, for example, would be transformed as in (29).

$$(29) \quad \text{IDENT}([\iota y. \text{sentence}'(y)]) \equiv \lambda x. [x = \iota y. \text{sentence}'(y)]$$

This modifier composes with the denominal predicate *mal-ha-* via Predicate Modification (Heim & Kratzer 1998), shown in (30).

$$(30) \quad \lambda x_e \lambda e_s. [\text{do}'(e)(x) \wedge \text{word}'(x) \wedge x = \iota y. \text{sentence}'(y)]$$

<sup>1</sup>Not to be confused with the similarly named, but distinct compositional operation Event/Theta Identification (Higginbotham 1985; Kratzer 1996).

### §3.1 *Case-marking on adjuncts*

Interestingly, though earlier I discussed the incompleteness of Jou (2024)’s empirical argumentation for the syntactic structure of Korean nominal adjuncts as AdvPs, this semantic analysis plausibly predicts some amount of structural complexity for nominal adjuncts, in the form of a covert IDENT operator. I am not sure what to label the containing category of this adjunct, but it does suggest that these nominal adjuncts are not simply DP-shaped. We will return to this in §3.3.

In sum, this section has argued that the ACC-phrases which appear in Korean denominal constructions are adjuncts, on the basis of their semantic contribution, which is NOT one of an event participant, but a restriction on the set of  $x$  denoted by the Root of the denominal predicate itself. I proposed a semantics for these nominal adjuncts that draws on the treatment of NC clauses as modifiers in Jenks (2014). I additionally discussed prior work that reports that case marking on Korean nominal adjuncts is attested (Jou 2024)— we will return to her full account of Korean case marking in §3.3. Adopting Jou (2024)’s account of case requires a loosening of the most classical understanding of Case Filter, in that nominal licensing in Korean is not restricted to only to argument DPs. Given that the semantic contribution of non-argumental ACC-phrases in Korean is one of predication (the durative/multiplicative adjuncts modify an event argument, and the “content” adjuncts modify an individual argument within the denotation of the predicate), I believe loosening our connection between ACC case and internal argument status, at the expense of our theory of nominal case licensing, is an empirically more promising move than loosening our connection between the internal argument and its syntactic relationship to the verb.

We turn next to solidifying an analysis of the correct decomposition of both the syntax and the semantics of a Korean denominal predicate. The suggested denotation

for *mal-ha-* in this section asserted that the semantic contribution of *mal*, when part of a denominal predicate, is a property, of type  $\langle e, t \rangle$ . This characterization is remarkably similar to the characterization of the semantic contribution of incorporated nouns (van Geenhoven 1998, 2002; Chung & Ladusaw 2004) and some indefinites (Heim 1982, 1984; Kamp 1981; Kamp & Reyle 1993; Diesing 1992; Carlson 1977, 1989; Abusch 1994). In the coming section, I will sharpen this comparison, arguing that the non-AS Root used in a Korean denominal predicate is itself an incorporated entity.

## § 3.2 Building a bridge to incorporation

Incorporation as a phenomenon first began receiving attention in theoretical linguistics in the early '80s (Sadock 1980; Mithun 1984, 1986; Baker 1988)—proto-typical incorporation refers to a construction like (31) in contrast to a non-incorporated counterpart (32), where a noun morpho-syntactically forms a compound predicate with a verbal stem (Borik & Gehrke 2015). The incorporee is almost always an internal argument of a verb, and usually (though, not always; see discussions of pseudo-incorporation, e.g. Massam 2001; Dayal 2011) reported to be bare, lacking the typical nominal markers of number, case, and definiteness available in the language under consideration.

- (31) *apo maaso-peu-te-n*  
3SG deer-butcher-INTR-PST  
“He was deer butchering.”

- (32) *aapo maaso-ta peu-ta-k*  
3SG deer-ACC butcher-TRANS-PERF  
“He butchered a deer.” (Borik & Gehrke 2015: 2; from Haugen 2008)

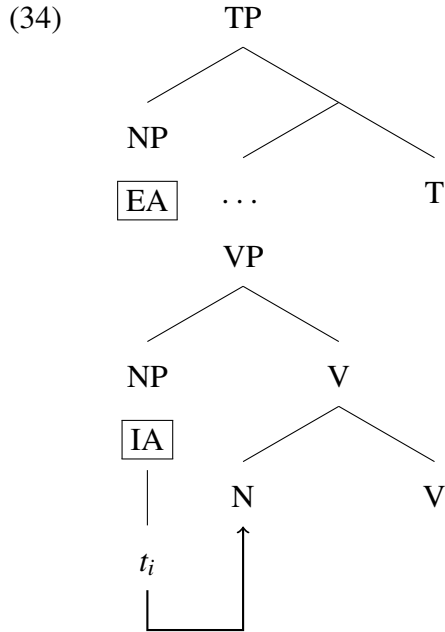
### §3.2 *Building a bridge to incorporation*

As can be seen in example in (31) from Hiaki, incorporation very often coincides with changes in verb marking or case alternations that suggest that the incorporated structure is syntactically intransitive, while the non-incorporated structure is syntactically transitive. For example, in West Greenlandic (henceforth W. G.), the external argument of a non-incorporating transitive verb receives ergative case (33a), but absolutive case when it is the external argument of a non-incorporating intransitive verb (33b). When using an incorporating verb<sup>2</sup>, the external argument receives absolutive case (33c).

- (33) a. *Angunguu-p aalisagaq neri-v-a-a*  
 Angunguaq-**ERG** fish.ABS eat-IND-[+tr]-3SG.3SG  
 “Angunguaq ate the/a particular fish.”
- b. *Angunguaq neri-v-u-q*  
 Angunguaq.**ABS** eat-IND-[-tr]-3SG  
 “Angunguaq ate/was eating (something).”
- c. *Angunguaq aalisagar-si-v-u-q*  
 Angunguaq.**ABS** fish-buy-IND-[-tr]-3SG  
 “Angunguaq bought fish.” (van Geenhoven 1998: 13–15)

Baker (1988), an early and very influential syntactic analysis of incorporation, argues for a head-movement account of canonical cases of incorporation like those exemplified in (31) and (33c), where the N head of the complement moves to adjoin to the V head (34) (a head-final tree is used simply to align with the surface order of W. G.).

<sup>2</sup>van Geenhoven (1998) analyzes a set of W. G. verbal affixes that are obligatorily incorporating—her account does not predict incorporation to be a freely optional phenomenon.



This approach treats an “incorporated” structure as derivative of a “non-incorporated” structure. The upshots of the Baker (1988) head movement account is that it allows us to maintain the Theta Criterion (Chomsky 1993), such that a verb still discharges its internal argument Theta Role regardless of whether incorporation occurs, and derives the generalization that only direct objects seem able to grammatically incorporate, since head movement must be strictly local.

Of particular relevance to this chapter, Mithun (1984, 1986) identifies a sub-type of incorporation that she terms “classificatory” incorporation, exemplified by the data point from Gunwinggu, an Aboriginal language, in (35).

- (35) *bene-dulg-nan mangaralaljmayn*  
 they.two-**tree**-saw cashew.nut

“They saw a cashew tree.” (Borik & Gehrke 2015: 4; from Mithun 1984)

Borik & Gehrke (2015) characterize “classificatory incorporation” as a paradigm in

### §3.2 *Building a bridge to incorporation*

which a noun is incorporated in order to narrow the scope of the verb, while an independent object appears in the structure that “semantically corresponds to the incorporated noun but has a more specific lexical meaning than the incorporated object” (Borik & Gehrke 2015: 3–4). Here in (35), “tree” is the incorporee, while “cashew nut” appears as an independent constituent, reported to have the morphological trappings and syntactic position of an apparent direct object. Classificatory incorporation, also referred to as “object doubling”, is particularly problematic for a head-movement account of incorporation, since doubling is only possible with an incorporated construction (Rosen 1989; Borik & Gehrke 2015): a head-movement account that assumes the incorporated N is the head of the direct object of the verb cannot explain why a second apparent object is licensed *after* head movement has occurred, but not before.

The description of object doubling closely resembles the descriptive generalization provided in §3.1 for Korean sentences with ACC-phrases licensed by denominal predicates, such as the representative example given again in (36): here, to use Borik & Gehrke (2015)’s terminology, *mwuncang-ul* (“sentence-ACC”) semantically corresponds to the incorporated item *mal* (“word”).

- (36) *namcwuni-ka mwuncang-ul mal-ha-yss-eyo*  
Namjoon-NOM sentence-ACC word-do-PST-DECL  
“Namjoon said (a/the) sentence.”

The item *mal* fits the semantic profile of incorporees, since it must be predicative, as per discussion in §3.1. It also fits the canonical morpho-syntactic profile of incorporated elements: it appears morphologically and prosodically “affixed” to the main predicate, and it has a restricted/deficient nominal domain. Similar to the SKL complex predicates

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discussed in Chapter 2, when surfacing in a denominal predicate, *mal* cannot be targeted by adnominal modifiers (37a); this contrasts with a non-incorporated configuration, as in (37b). Per conclusions about syntactic category in Chapter 2, we can again reaffirm that *mal*, when part of a denominal predicate, is a Root.

- (37) a. \* *namcwuni-ka hungmilo-wun mal-ha-yss-eyo*  
Namjoon-NOM interesting-ADJ word-do-PST-DECL  
Intended: “Namjoon said something interesting.”
- b. *namcwuni-ka hungmilo-wun mal-ul ha-yss-eyo*  
Namjoon-NOM interesting-ADJ word-ACC do-PST-DECL  
“Namjoon said something interesting.”

As such, in the coming sections I will analyze Korean constructions like (36) as instances of classificatory incorporation. However, unlike the characterization given by Borik & Gehrke (2015), I will argue, building on the syntax-semantic accounts of incorporation from van Geenhoven (1998) and Chung & Ladusaw (2004), that classificatory incorporation should be thought of as instances where the apparent “object” is a modifier that narrows the denotation of the incorporated argument, rather than the other way around (which would treat the incorporee as the modifier, and the apparent “object” as the true internal argument). Both van Geenhoven (1998) and Chung & Ladusaw (2004), in their respective accounts of incorporation, deal with sentences that fit the typology of classificatory incorporation: Chapter 3 of Chung & Ladusaw (2004) is particularly interested in developing an analysis that derives object doubling in Chamorro (38), and van Geenhoven (1998), in her analysis of W. G. incorporation, provides an account not only for simple cases of incorporation (39a), but also for sentences where

### §3.2 Building a bridge to incorporation

an incorporated internal argument is targeted by external modification (39b–d).

- (38) a. *Man-gäi-ga' häm*  
 AGR-have-pet 1P.PL.  
 “We have pets.” (Chung & Ladusaw 2004: 76)
- b. *Gäi-ga' yu' kätu*  
 AGR.have-pet 1P.SG. cat  
 “I have a pet cat.” (Chung & Ladusaw 2004: 76)
- (39) a. *Esta aalisagar-si-v-u-q*  
 E.ABS fish-buy-IND-[-tr]-3SG  
 “Ester bought fish.” (van Geenhoven 1998: 146)
- b. *Esta nutaa-mik aalisagar-si-v-u-q*  
 E.ABS fresh-INST.SG fish-buy-IND-[-tr]-3SG  
 “Ester bought fresh fish.” (van Geenhoven 1998: 146)
- c. *Juuna Kalli-mit marlun-nik allagar-si-v-u-q*  
 J.ABS K.-ABL two-INST letter-get-IND-[-tr]-3SG  
 “Juuna got two letters from Kaali.” (van Geenhoven 1998: 151)
- d. *Juuna [kalaalli-sut oqalussinnasu]-mik ilinniartitsisu-siur-p-u-q*  
 J.ABS [Greenlander-like speak.can]-INST.SG teacher-seek-IND-[-tr]-3SG  
 “Juuna seeks a teacher who speaks W.G.” (van Geenhoven 1998: 157)

Unique to W. G. (within the small typology of languages discussed in this chapter), the examples (39b–d) suggest that other types of adjuncts, such as adjectives and relative clauses, can also surface as external modifiers to the incorporee.

In the remainder of this chapter, I develop an analysis of Korean denominal predicates which builds on the syntax-semantics account of indefinites and incorporation from [van Geenhoven \(1998\)](#), with inspiration and influence from [Chung & Ladusaw \(2004\)](#) and [Kratzer \(1996\)](#). Ultimately, I propose an account of incorporation that shares many characteristics of [Chung & Ladusaw \(2004\)](#)'s system, with a few important departures. Since both [van Geenhoven \(1998\)](#) and [Chung & Ladusaw \(2004\)](#) play prominent roles in the analysis, I next provide brief summaries of each respective text, outlining each of their systems and their commitments to the mapping between the syntax and semantics interfaces.

### 3.2.1 Semantic incorporation: van Geenhoven (1998)

[van Geenhoven \(1998\)](#) semantically juxtaposes noun incorporation in W. G. with bare plurals in West Germanic (English, Dutch, German). Building on observations of the scope behavior of W. G. from [Bittner \(1994\)](#), van Geenhoven notes that incorporation in W. G. shares the same semantics and discourse restrictions reported for Germanic bare plurals, such as obligatory narrow scope under negation and distributive operators, and discourse transparency (the ability to antecede a definite pronoun, when located in a “semantically nonsubordinating” position; [van Geenhoven 1998: 36](#)).

(40) *Arnajaraq aalisaga-si-nngi-l-a-q*

A.ABS      fish-buy-NEG-IND-[-tr]-3SG

i. “it is not the case that A. bought (a/more than one) fish.”       $\neg > \exists$

ii. # “There is/are (a) fish that A. didn’t buy.”       $*\exists > \neg$

([van Geenhoven 1998: 31](#))

### §3.2 Building a bridge to incorporation

I report here briefly the narrow scope facts: as seen above in (40), a W. G. incorporee is obligatorily interpreted within the scope of negation. van Geenhoven (1998) juxtaposes (40) with the same observation made by Carlson (1977) for the English bare plural (41).

- (41) John didn't see spots on the floor.
- i. "It is not the case that John saw spots on the floor."  $\neg > \exists$
- ii. # "There were spots on the floor that John didn't see."  $*\exists > \neg$
- (van Geenhoven 1998: 32; from Carlson 1977)

She also further shows that the availability of the German split topic construction requires a direct object that takes obligatory narrow scope. Comparing (42) and (43), only (42), "black spiders", which takes narrow scope with respect to the negative polarity item *keine* ("no") can grammatically split (44). In contrast, (43), where the object "some black spiders" has the existential operator taking wide scope with respect to negation, split topicalization is ungrammatical (45).

- (42) *Lisa hat im Keller keine schwarzen Spinnen gesehen*  
 L. has in.the cellar no black spiders seen  
 "It is not the case that L. saw black spiders in the cellar."  $\neg > \exists$
- (43) *Lisa hat im Keller einige schwarze Spinnen nicht gesehen*  
 L. has in.the cellar some black spiders not seen  
 "There are some black spiders that L. didn't see in the cellar."  $\exists > \neg$
- (44) *Schwarze Spinnen hat Lisa im Keller keine gesehen*  
 black spiders has L. in.the cellar no seen  
 "As for black spiders, it is not the case that L. saw some in the cellar."  $\neg > \exists$

(45) \* *Schwarze Spinnen hat Lisa im Keller einige nicht gesehen*

black spiders has L. in.the cellar some not seen

Intended: “As for black spiders, it is the case that there are some that L. did

not see in the cellar.”

\* $\exists > \neg$

(van Geenhoven 1998: 32–33)

The split topic paradigm is important for van Geenhoven (1998)’s account of West Germanic bare plurals, as a syntactic and semantic correlate to external modification of a W. G. incorporated noun (e.g., 39b–d). She ultimately argues that all obligatorily narrow scope-taking indefinites (including incorporees) are 1) predicative indefinites of type  $\langle e, t \rangle$ , inline with Heim (1982, 1984)’s semantic theory of indefinites, and 2) receive their existential force from the verb (Carlson 1977). Her commitment to this second claim, in particular, requires her to provide a formal account of external modification which allows adjuncts to compose with the root node of the tree and modify an already existentially quantified variable. She provides the following semantic entries for incorporating (46) and non-incorporating verbs (47), where  $x$  is the internal argument variable,  $y$  is the external argument variable, and  $e$  is the event argument variable<sup>3</sup>.

(46)  $\llbracket \text{incorporating verb} \rrbracket = \lambda P_{\langle e, t \rangle} . \lambda y_e . \lambda e_s . [\exists x_e . [Verb'(e)(y)(x) \wedge P(x)]]$

(47)  $\llbracket \text{non-incorporating verb} \rrbracket = \lambda x_e . \lambda y_e . \lambda e_s . [Verb'(e)(y)(x)]$

<sup>3</sup>van Geenhoven (1998)’s actual formal denotations utilize the variable  $w$  for the event argument,  $y$  for the internal argument, and  $x$  for the external argument, as in (iii). She intentionally does not label the semantic type of the internal argument  $y$  in (iii)a, as a way to indicate that the value of  $y$  can be either an atomic or non-atomic object.

(iii) a.  $\llbracket \text{incorporating verb} \rrbracket = \lambda P_{\langle s, \langle e, t \rangle \rangle} \lambda w_s \lambda x_e \exists y [Verb_w(x, y) \wedge P(y)]$

b.  $\llbracket \text{non-incorporating verb} \rrbracket = \lambda w_s \lambda y_e \lambda x_e [Verb_w(x, y)]$

In the main text, I use  $e$  for the event argument, simply to be notationally consistent with my use of  $e$  elsewhere in this dissertation for  $s$ -type entities. I use  $x$  for the internal argument for the same reason.

### §3.2 Building a bridge to incorporation

What (46) accomplishes, in departure from the approaches to indefinite semantics at the time, is that, rather than requiring an indefinite itself to be type-shifted so that it can compose as the internal argument via Function Application, (46) alters the denotation of an incorporating verb, so that the predicative indefinite can compose with the verbal head directly. See the example semantic composition in (48), for the incorporating verbal affix *-si-* (“buy”, “get”) from W. G.

(48)

$$\begin{array}{c}
 \text{FISH-BUY} \\
 \lambda y_e \lambda e_s. [\exists x_e. \text{buy}'(e)(y)(x) \wedge \text{fish}'(x)] \\
 \swarrow \quad \searrow \\
 \text{aalisaga} \quad \quad \quad \text{-si-} \\
 \text{FISH} \quad \quad \quad \text{BUY} \\
 \lambda x_e. [\text{fish}'(x)] \quad \quad \lambda P_{\langle e,t \rangle} \lambda y_e \lambda e_s. [\exists x_e. \text{buy}'(e)(y)(x) \wedge P(x)]
 \end{array}$$

(van Geenhoven 1998: 132)

When it comes to the syntactic structure that the LF composition in (48) corresponds to, van Geenhoven (1998) argues against both the Lexicalist and Syntactic accounts of noun incorporation that were popular in the ‘90s, focusing on Di Sciullo & Williams (1987) and Baker (1988), respectively. She presents two empirical arguments against Baker (1988)’s head movement account: for one, W. G. incorporation allows the incorporation of a numeral (49). If the deep structure of (49) is simply one where the object is “two ringed seals”, it is unexplained why the N “ringed seals” is not the entity that undergoes incorporation.

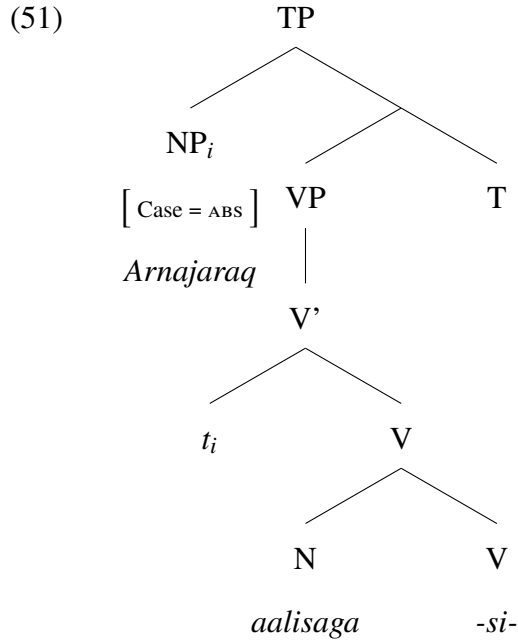
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- (49) *Kaali natser-nik marlu-raar-p-u-q*  
Kalli.ABS ringed.seal-INST.PL two-catch-IND-[-tr]-3SG  
“Kaali caught two ringed seals.” (van Geenhoven 1998: 106)

Secondly, she notes that W. G. noun incorporation configurations cannot receive partitive interpretations (50). Under the Baker (1988) assumption that the incorporated N and a numeral initially form a nominal phrase in the direct object position prior to head movement, we lose an explanation for why such a phrase should lack a partitive reading, since a non-incorporated counterpart certainly can, and head movement is not predicted to affect possibilities for interpretation.

- (50) *Nuka marlun-nik iipili-tur-p-u-q*  
NukaABS two-INST.PL apple-eat-IND-[-tr]-3SG  
i. “Nuka ate two apples.”  
ii. # “Nuka ate two of the apples.” (van Geenhoven 1998: 107)

Ultimately, van Geenhoven (1998) argues for the view that incorporation should be thought of as a case of syntactic word formation that is not derived via head movement, but rather is base generated. She proposes the following structure (51) for an incorporating construction. In additional support of this proposal, she notes that it nicely predicts that incorporees should be exempt from Case assignment, something we return to in §3.3.



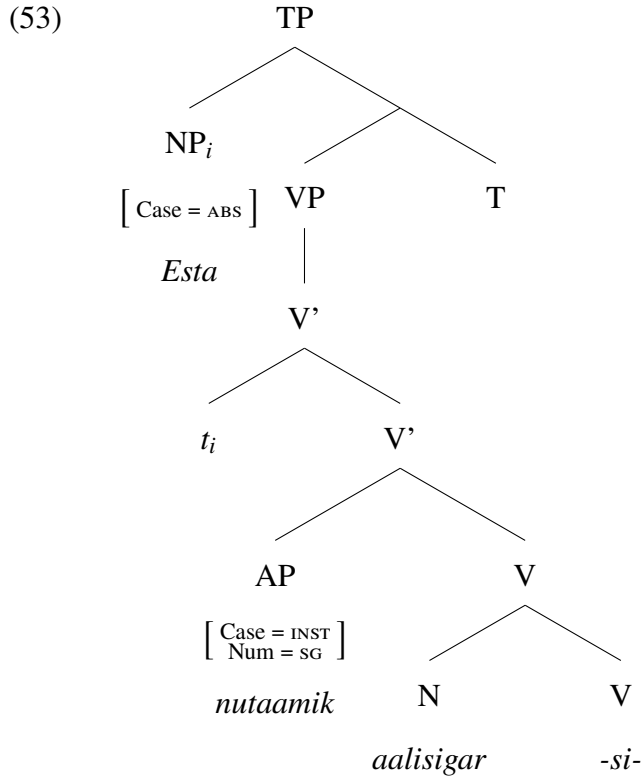
(adapted from van Geenhoven 1998: 142)

For an incorporating structure involving external modification, such as the example with the adjective “fresh” from (39b), given again in (52), she proposes the syntactic structure in (53).

- (52) *Esta nutaa-mik aalisagar-si-v-u-q*  
 E.ABS fresh-INST.SG fish-buy-IND-[-tr]-3SG

“Ester bought fresh fish.”

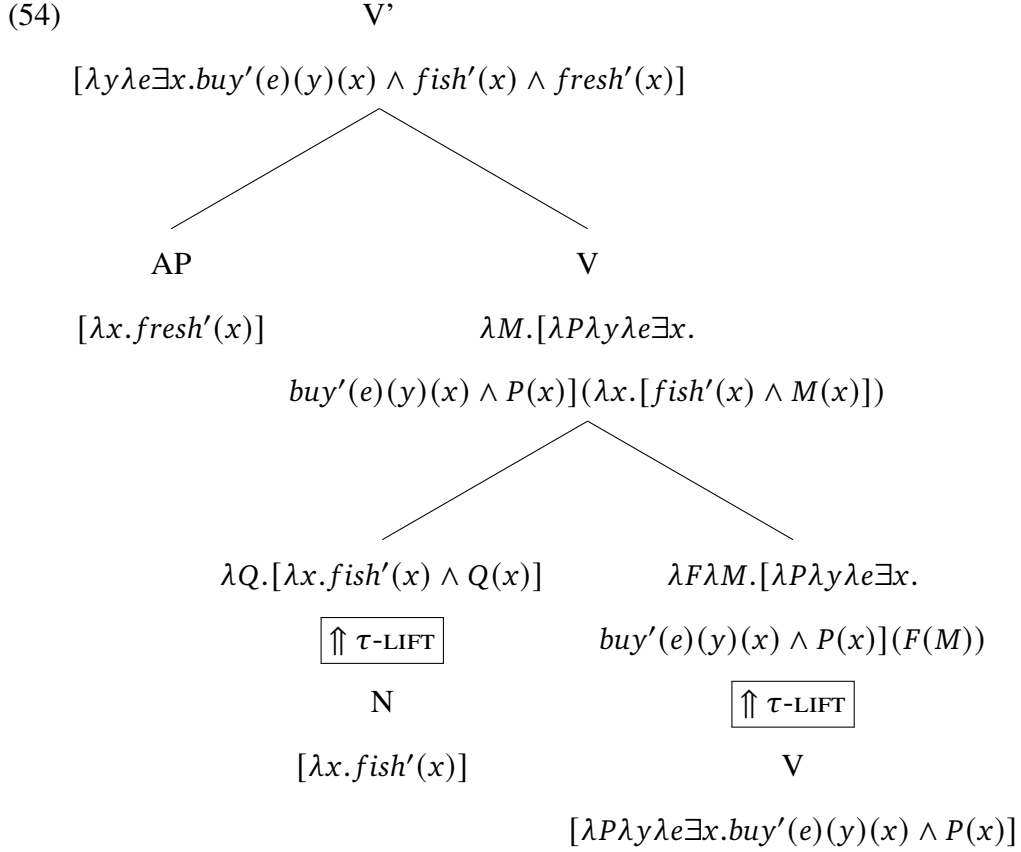
(van Geenhoven 1998: 146)



(adapted from van Geenhoven 1998: 147)

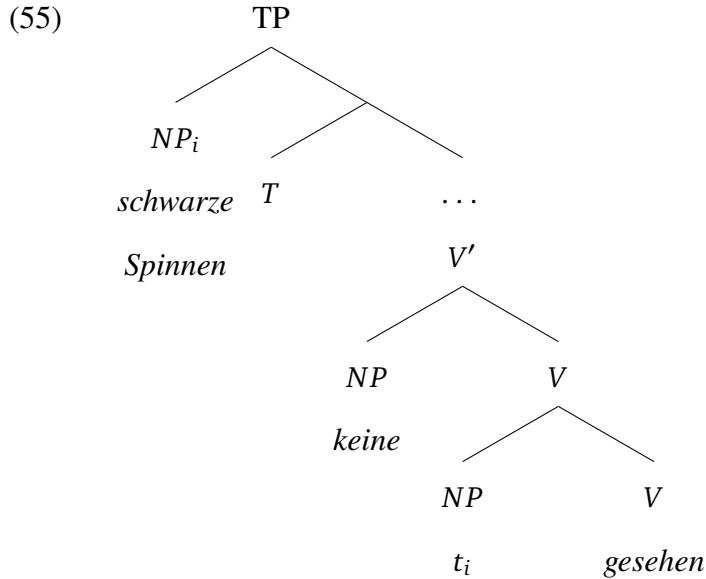
Finally, for the corresponding LF of (53), van Geenhoven (1998), acknowledging that there is no way to compose the denotation of the complex verbal head with the denotation of the AP “fresh” such that the modifier is correctly identified as a predicate of the already existentially quantified argument, argues for a LF re-composition strategy to deal with the problem. In her words, the recomposition strategy is triggered by the presence of an external *INST*-marked modifier, and will essentially “undo” the first step of composition, to before the noun was semantically incorporated, and adjust the type of the noun from a predicate  $\langle e, t \rangle$  to a restrictive modifier. The incorporating verb must also be type-lifted so that it can compose with the updated denotation of the noun. While I gloss over the details of her proposed type-shifting operations, the resulting

composition is demonstrated in the LF structure below in (54).



(adapted from van Geenhoven 1998: 149)

The extension of the account to bare plurals in Germanic is straightforward: van Geenhoven (1998) assumes that bare plurals are semantically equivalent to incorporated Ns, but assumes that Germanic incorporees are simply always NPs, not Ns, and stipulates this as a potential parametric difference between languages. She must additionally stipulate that all Germanic verbs have an incorporating and non-incorporating denotation, and the incorporation denotation will be used whenever the V needs to compose with a predicative NP. See (55) as an example of the assumed syntax for (44).



(adapted from [van Geenhoven 1998](#): 175)

She argues that a hanging topic in Germanic is a predicative indefinite, base-generated as an NP sister to the V. She assumes the NP *keine* (“no”) to be a negative pronominal NP that functions as an external modifier, in the same way as was argued for W. G., using type-lifting to permit its composition as a modifier to an already existentially quantified variable.

The complicated type-shifting required for composing an external modifier with an incorporating predicate dampens the success of the account— [van Geenhoven \(1998\)](#) herself acknowledges that, to some, her semantics for external modification might taste like “bad  $\lambda$ -soup”. However, she arrives here because she needs to ensure that incorporated items and bare plurals take obligatory low scope, she has evidence in support of a base-generated structural account of incorporation, and she is committed to existential quantification of the internal argument variable being supplied by the verb. In §3.3, I align with [van Geenhoven \(1998\)](#) in arguing for incorporees to have the semantic

contribution of predicative indefinites, as well as with her base-generated structural account, taking all higher adjuncts that are predicates of the internal argument variable to be syntactically external modifiers. However, drawing insights from [Chung & Ladusaw \(2004\)](#), I offer a different perspective on the location of existential quantification, which ultimately allows for a much simpler semantics that does not require type-lifting operations.

Type-shifting issues with external modification aside, [van Geenhoven \(1998\)](#)’s account is novel in its semantic mechanics in allowing a predicative nominal item (“N” or “NP”) to combine directly with the main predicate—prior to her account, other accounts of predicative indefinites involved type-shifting operations for the nominal phrase so that it could compose correctly with the verbal predicate. Though, because she encodes semantic incorporation directly into the lexical entries of verbs, the predicative nominal still composes with the verb via Function Application. While it may be the case that obligatorily incorporating verbal affixes do indeed have a  $\lambda P$  argument slot encoded in their entries, the system is stipulative/redundant in its account of Germanic bare plurals, in needing to encode two denotations for every verb, such that one version is used when it combines with a bare plural, and another one is used in all other cases. In the next section, I introduce [Chung & Ladusaw \(2004\)](#), who are interested in deriving the semantics of incorporation as a by-product of a more general theory of semantic composition modalities.

### **3.2.2 Restriction and saturation: Chung & Ladusaw (2004)**

[Chung & Ladusaw \(2004\)](#) make explicit an idea that is implicated by the [van Geenhoven \(1998\)](#) account: the mode of semantic composition between a predicate and a nominal

phrase need not *always* be one of Function Application. The major theoretical move of their work is to suggest that Function Application is NOT the only possible mode of composition that an “argument phrase” can have with its predicate, but one of a number of possible modes of composition.

Chung & Ladusaw (2004) propose that there are both saturating and non-saturating modes of composition that are possible between a predicate and a nominal argument phrase. Either can occur so long as the input criteria of the relevant semantic composition mode is met. For saturating modes of composition, there is: 1) direct saturation by Function Application (56), where an entity of type  $e$  directly composes with a predicate, resolving and removing a  $\lambda$ -bound variable of the same type; and 2) indirect saturation by variable quantification, where existential closure (57) or some other means of binding an open variable is used, again resolving and removing the  $\lambda$ -binding of said variable.

(56) **Function Application (F. A.):**

Given a function  $f$  of type  $\langle e, \langle s, t \rangle \rangle$  and an individual  $a$  of type  $e$ , where:

a.  $\llbracket f \rrbracket = \lambda x_e \lambda e_s. [P(x)(e)]$

Application of  $a$  to  $f$  yields:

$$F.A.(f, a) \equiv \lambda x_e \lambda e_s. [P(x)(e)](a) \equiv \lambda e_s. [P(a)(e)]$$

(57) **Existential Closure (E. C.):**

Given a function  $f$  of type  $\langle e, \langle s, t \rangle \rangle$ , where:

a.  $\llbracket f \rrbracket = \lambda x_e \lambda e_s. [P(x)(e)]$

E. C. of an open  $e$  type variable of  $f$  yields:

$$E.C.(\lambda x_e \lambda e_s. [P(x)(e)]) \equiv \lambda e_s. [\exists x. [P(x)(e)]]$$

In addition to (56) and (57), Chung & Ladusaw (2004) introduce the non-saturating

mode of composition *Restrict*, given in (58). Here, I use a function  $g$  of type  $\langle e, \langle e, \langle s, t \rangle \rangle \rangle$ , because Chung & Ladusaw (2004) assume the external argument of a transitive predicate to be part of the core predicate’s denotation (contra Kratzer 1996), and this is ultimately critical for their application of *Restrict*.

(58) **Restrict:**

Given a function  $g$  and a function  $f$ , where:

$$\text{a. } \llbracket g \rrbracket = \lambda x_e \lambda y_e \lambda e_s. [P(x)(y)(e)]$$

$$\text{b. } \llbracket f \rrbracket = \lambda x_e. [Q(x)]$$

Restricting  $g$  with  $f$  yields:

$$\text{Restrict}(g, f) \equiv \lambda y_e \lambda \underline{x_e} \lambda e_s. [P(x)(y)(e) \wedge Q(x)]$$

*Restrict* is similar to Predicate Modification (59) (Heim & Kratzer 1998), in the sense that it is a conjoining operation where no  $\lambda$ -bound variables are removed, and instead composes functions that are not of the same type, but share their outermost  $\lambda$ -bound variable in common.

(59) **Predicate Modification (P. M.):**

Given a function  $f$  of type  $\langle e, t \rangle$  and a function  $g$  of type  $\langle e, t \rangle$ , where:

$$\text{a. } \llbracket g \rrbracket = \lambda x_e. [P(x)]$$

$$\text{b. } \llbracket f \rrbracket = \lambda x_e. [Q(x)]$$

Modifying  $f$  with  $g$  yields:

$$P.M.(f, g) \equiv \lambda x_e. [P(x) \wedge Q(x)]$$

However, *Restrict* is not collapsible to Predicate Modification because of a crucial difference: in *Restrict*, the variable of  $g$  that becomes restricted is notationally “demoted” to just before the  $\lambda$ -bound event variable— as shown by the underline in (58). They

suggest that “the lambda prefix of [the main predicate] is doing two jobs . . . semantically, it is tracking the degree of unsaturation of the predicate, [and] syntactically, it determines the order under which arguments are targeted for composition” (Chung & Ladusaw 2004: 10). They propose the adoption of the notational assumption that, when an argument is targeted by any (non-saturating) compositional operation, “it is possible to demote [the relevant  $\lambda$ -bound argument] from the top of the lambda prefix to a position just above the event argument” (Chung & Ladusaw 2004: 10).

Despite their assertion that lambda demotion is no more than a notational assumption, Chung & Ladusaw (2004) are not internally consistent with requiring argument demotion throughout their text, and in fact their analysis of Chamorro incorporation requires that sometimes, the internal argument variable is *not* demoted, so that it can be targeted twice. To demonstrate the mechanics of their system, I will walk through example derivations of their analysis for Chamorro incorporation. First, for the simple (no object doubling) case of incorporation, (60), the incorporee first composes with the predicate via Restrict.

(60) *Man-gäi-ga' häm*

AGR-have-pet 1P.PL.

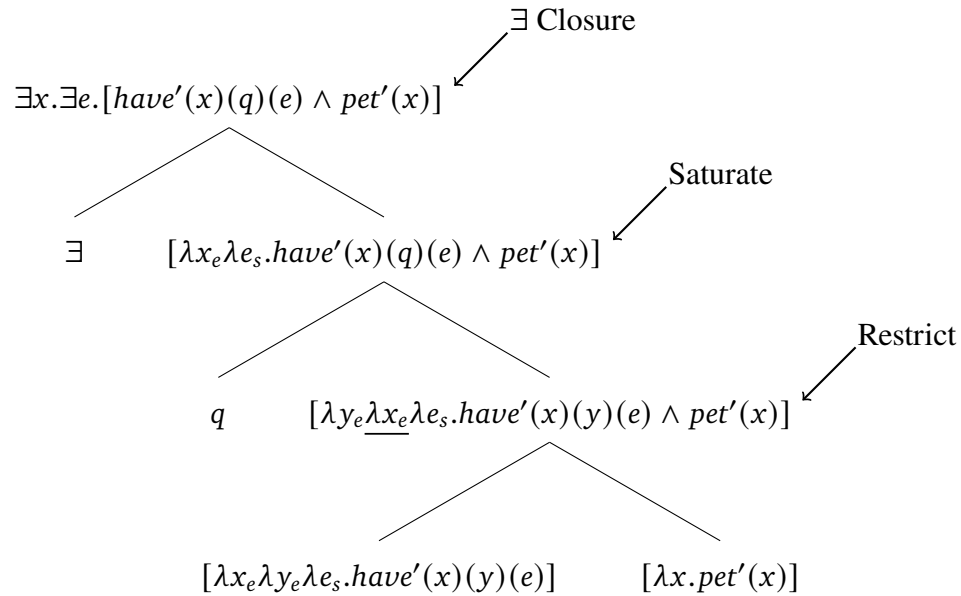
“We have pets.”

(Chung & Ladusaw 2004: 76)

In the example composition in (61), take  $x$  to be the internal argument variable and  $y$  to be the external argument variable, for the Chamorro obligatorily incorporating predicate *gäi* (“to have”). After the first operation of Restrict, it is essential that  $\lambda x$  is demoted, so that even though  $x$  has not yet been saturated, the next step of composition with the constant  $q$  will saturate the *external argument* variable slot. Chung & Ladusaw (2004)

assert that “all predicates must have their event participants semantically saturated at the event level” (Chung & Ladusaw 2004: 11). As such,  $x$  is eventually existentially quantified alongside the event variable, at the top of the VP.

(61) Example LF composition of basic incorporating construction (no doubling):



(adapted from Chung & Ladusaw 2004: 108)

Their derivation of “object doubling” (classificatory incorporation), as in (62), begins with the same step, where the incorporee first composes with the predicate via Restrict.

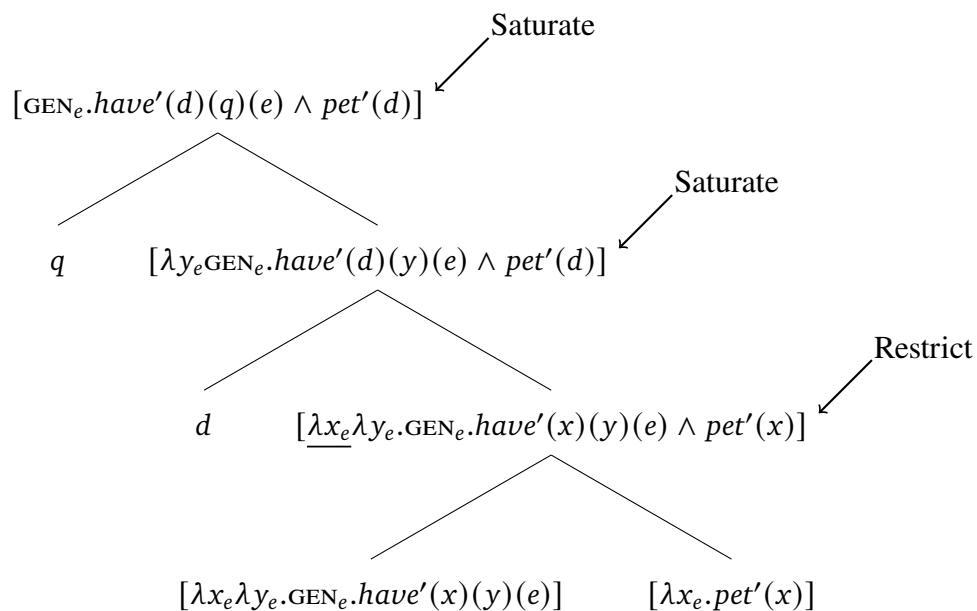
(62) *Gäi-ga'      yu'      kätu*  
 AGR.have-pet 1P.SG. cat

“I have a pet cat.” (Chung & Ladusaw 2004: 76)

In the example composition (63), again take  $x$  to be the internal argument variable and  $y$  to be the external argument variable. Here, *unlike* the derivation of the simple incorporation case (61), the  $\lambda x$  is not demoted, therefore creating the possibility for

a constant  $d$  to directly saturate the internal argument variable slot. Saturation of the external variable proceeds by Function Application after the internal argument has been sufficiently saturated. Chung & Ladusaw (2004) also assume that the event variable in the object doubling example of (63) is bound by a Generic operator (GEN). Their account does not predict that a predicate with a GEN-bound event variable vs. a  $\lambda$ -bound event variable in its denotation should behave any differently with respect to its possibilities for undergoing Restrict and/or Saturate.

(63) Example LF composition of classificatory incorporation (object doubling):



(adapted from Chung & Ladusaw 2004: 110)

On the surface, the Chung & Ladusaw (2004) account is relatively straightforward, and by endeavoring to generalize semantic incorporation to a more general theory of semantic composition, they are able to present an alternative analysis to van Geenhoven (1998) that does not require type-shifting or the lexicalization of an existential quantifier,

### §3.2 *Building a bridge to incorporation*

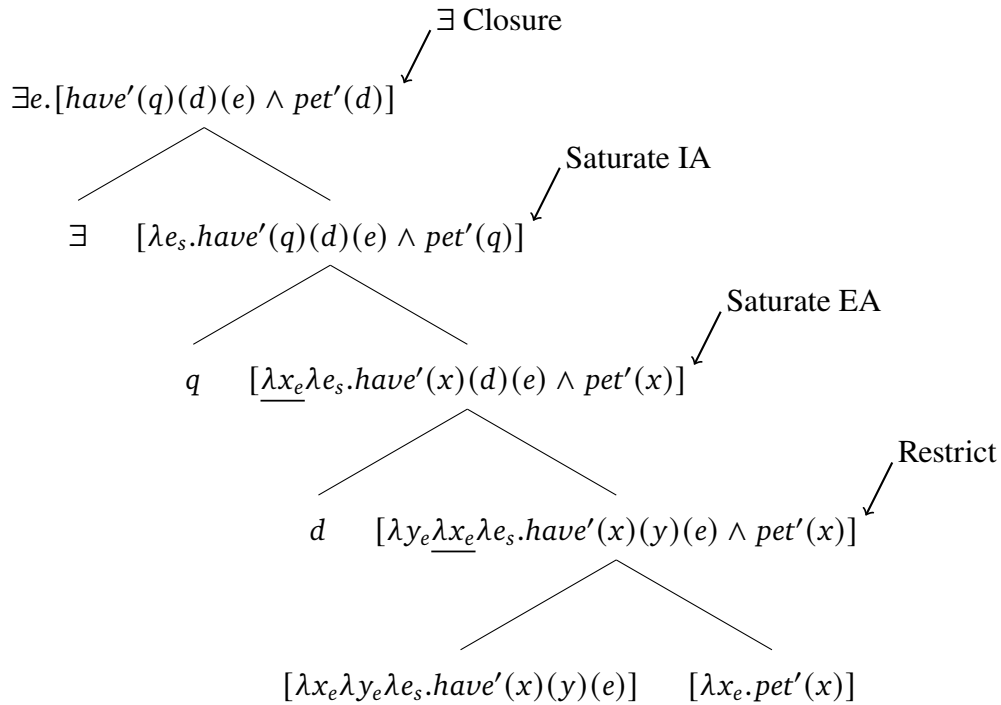
while still deriving the narrow scope facts of van Geenhoven (1998), so long as we assume negation always applies after existential closure of the event variable. However, their system has a number of technical issues that result in over-generation. For one, although the goal is to design a general account of semantic modes of composition, they fail to explain why only two predicates in Chamorro (“have” and its negative counterpart “not have”) have object doubling, and further, why these two predicates are obligatorily incorporating. Their account predicts quite generally that object doubling should be optional and, in principle, possible for any predicate that has a  $\lambda$ -bound argument slot. There are also two issues with the operability of the model: for one, their notational lambda ordering swap is not constrained, and makes unattested “object doubling” predictions. Secondly, their system loosens the relationship between syntax and semantics in a way that is both empirically and conceptually too costly for our theory of the relationship between structure and meaning.

First, the notational difference by which the internal argument variable is demoted after Restrict for the non-doubling constructions, but not for the doubling constructions, is not as benign as Chung & Ladusaw (2004) imply. The intuition behind the “ $\lambda$ -demotion” notation is to capture the empirical observation that, regardless of object doubling occurring or not, the external argument variable is never targeted for saturation until after the internal argument has been targeted. But, since they are committed to Restrict being a non-saturating operation, as well as to the assertion that all arguments are *eventually* saturated, they need some way to move onto the external argument without actually saturating the internal argument, for a non-doubling composition. But there is no explanation for when  $\lambda$ -demotion should or should not apply— if it is an automatic and benign notational practice, as they say in the introduction chapter, then object

doubling would never be possible, which means this notation needs to be intentionally switched on or off to correctly generate any object doubling at all (hence why Chung & Ladusaw do not demote  $\lambda x$  after all, in their composition of a doubling construction).

Furthermore, their commitment to  $\lambda$ -demotion placing the IA's lambda just before the lambda of the event variable, actually predicts that the internal argument can be directly saturated by Function Application *after* the saturation of the external argument. Consider the derivation in (64), which is fully possible within their system.

(64) Possible derivation, internal argument is saturated after external argument:

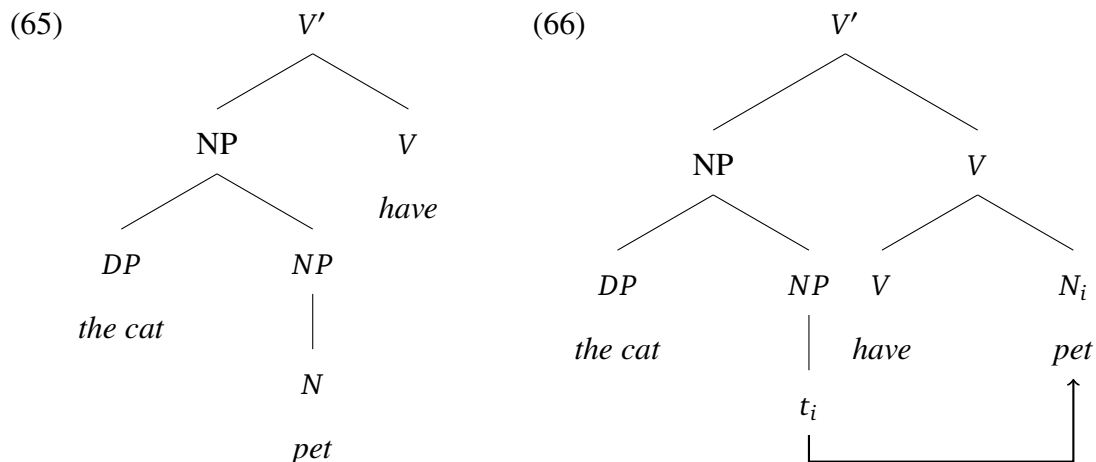


The final denotation at the top of the LF structure has  $d$  saturating the external argument variable  $y$ , and  $q$  saturating the internal argument variable  $x$ , generating a hierarchical structure where the syntactic position of the DP that saturates the internal argument is structurally higher than the syntactic position of the DP that saturates the

### §3.2 Building a bridge to incorporation

external argument. Chung & Ladusaw (2004) do not directly report on the Chamorro facts for whether this is attested, but this is certainly not attested in the cross-linguistic reports on classificatory incorporation.

The second implementation issue of their account has to do with their theory of the syntax-semantics interface. They report that the “extra object” of a classificatory incorporation construction, despite being semantically an entity of type *e* that composes as the internal argument of the predicate, is *syntactically* an adjunct. Just like in W. G., the verb of a Chamorro incorporation construction is inflected with agreement from the intransitive paradigm, and this holds true even with the addition of this extra “object”. They are therefore committed to a mismatch between syntactic argumenthood and semantic argumenthood: the incorporee is a syntactic argument, but a semantic adjunct, and the “doubled object” is a syntactic adjunct but a semantic argument. In mapping this proposal to syntactic structure, they adopt a Baker (1988) head movement account of incorporation, and suggest that the deep structure, prior to head movement, is (65), with the surface structure, post-head movement, shown in (66).



(adapted from Chung & Ladusaw 2004: 147–148)

Chung & Ladusaw (2004) do not make clear their assumptions about how the derivation in (65–66) is shipped to LF such that the semantic module interprets the incorporee in its surface position (we must stipulate that reconstruction does not occur), and interprets the DP *the cat*, here structurally an adjunct not to the verb, but to the direct object, somehow semantically saturates the internal argument variable of the verbal predicate. Given that this DP adjunct never directly composes with the V in the syntax, it is unclear what compositional relationship the LF module is interpreting such that it can correctly generate the LF proposals laid out in their account.

There is another immediate Chamorro-specific problem with a head movement proposal that is not addressed, which has to do with a theory of nominal licensing: in (65–66), there are two nominal phrases, but neither of them are clearly licensed by the existing mechanisms of case/agreement in Chamorro. Chamorro has an ergative/absolutive agreement system, and Chung & Ladusaw (2004) report that in both simple and doubled cases of incorporation, the agreement marking on the verb is absolutive, i.e. the marking of an intransitive. This is a bigger issue for the head movement account more generally to explain: why should an NP which undergoes head movement no longer be accessible to case/agreement licensing mechanisms<sup>4</sup>? Further, what is our predictions for a DP that is syntactically an adjunct, but semantically an argument? Does this DP need to be licensed, and if so, how?

Chung & Ladusaw (2004) call for a relaxation of the “isomorphism between syntax and semantics” such that the syntax-semantics interface will not require semantic saturation to parallel syntactic saturation (Chung & Ladusaw 2004: 113). Beyond the lack of clarity in exactly how this non-isomorphism is constrained and accomplished,

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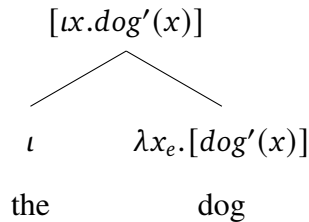
<sup>4</sup>Though, see Levin (2015)’s dissertation for one way of addressing this perspective, where it is argued that incorporation *is* a form of nominal licensing.

the further problem is that this is simply not true: it is not the case that adjuncts in the syntax can be freely interpreted as arguments in the semantics, nor is it the case that arguments in the syntax are freely interpreted as adjuncts in the semantics. If we take a closer look at the possible *syntactic* places that DPs can be generated, they are not freely available as adjuncts whenever there is some unsaturated predicate. As a toy example, consider a simple DP, “the dog”. The noun “dog” contributes a predicate of type  $\langle e, t \rangle$ .

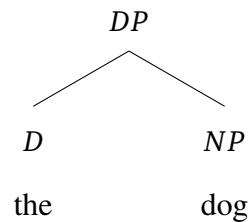
$$(67) \quad \llbracket \text{dog} \rrbracket = \lambda x_e. [\text{dog}'(x)]$$

It has one  $\lambda$ -bound variable slot, of type  $e$ . Adopting a simplistic theory of definite determiners for the purposes of this demonstration, we can assume that the definite determiner “the” is a pronunciation of the iota operator, which, in the construction of the nominal phrase “the dog”, will bind the  $e$  type variable of  $\text{dog}'$ . This straightforwardly corresponds to our assumed syntactic structure of the DP as well.

(68) a. LF composition



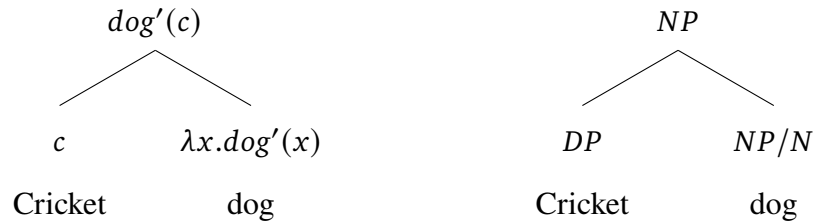
b. Syntactic composition



Intuitively, when it comes to DPs, they are of type  $e$ , not of type  $t$ : DPs do not denote truth values, they denote individuals. Purely computationally, however, it would be possible to compose the predicate  $\text{dog}'$  with an entity of type  $e$ , to yield a truth value (“Cricket is a dog”). But if we consider the natural language syntactic possibilities of a nominal phrase headed by “dog”, we can quickly see that this is ungrammatical: it is, in fact, *not* possible to directly saturate the  $\lambda x$  contributed by the denotation of N,

*dog'* (69). In other words, syntactically speaking, the noun “dog” does not count as an argument-introducing predicate in natural language.

- (69)    a.    LF composition                      b.    \* Syntactic composition



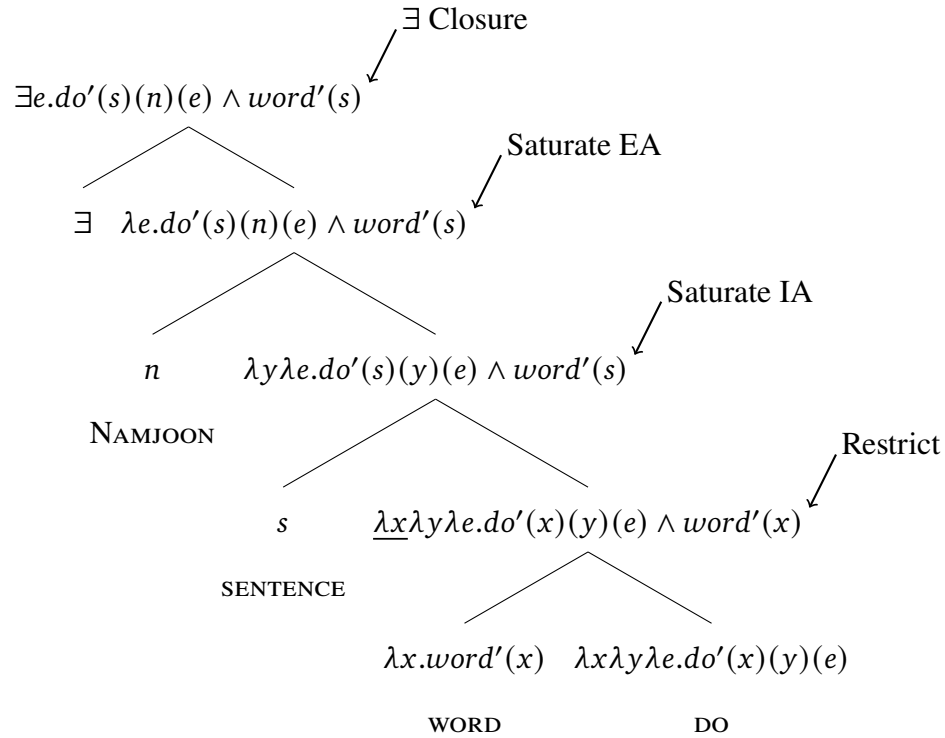
What this toy example shows us, is that a one-place predicate of type  $\langle e, t \rangle$  in fact *cannot* be a syntactic argument introducer. We can extend this generalization beyond just predicates of individuals: take the event variable of any eventive predicate, for example. An event variable is *never* syntactically saturated— this follows from the simple observation that, because it is the innermost lambda-bound variable of a predicate, the denotation of the predicate at the top of the VP will be a one-place predicate  $\langle s, t \rangle$ . In short, it is simply not the case that indirect saturation (variable binding) and direct saturation (function application with an  $e$  or  $s$  type entity) occur freely in natural language. In order for direct saturation to occur in the syntax, a two-place predicate (minimally), is required.

Lastly, while it is indeed much more challenging to determine a doubled object's semantic relationship to a predicate as an argument or an adjunct with a stative verb like “have”, as in the Chamorro cases, in the Korean constructions introduced earlier in §3.1, the semantic contribution of the ACC-phrase is very obviously one of predication, *not* one of an event participant. Consider again the example (70).

- (70) *namcwuni-ka mwuncang-ul mal-ha-yss-eyo*  
 Namjoon-NOM sentence-ACC word-do-PST-DECL  
 “Namjoon said (a/the) sentence.”

Chung & Ladusaw (2004)’s system would propose the following LF composition for this sentence, given in (71).

- (71) Chung & Ladusaw (2004) treatment of (70):



The final denotation (71), after all operations have applied, asserts that “the sentence” is the internal argument, i.e. a thematic event participant, of the verb “do”. But it is not the case that the event in (70) is paraphrasable as an event of Namjoon doing/producing a sentence, where said sentence had the property of being words. This is not correct; (70) is only paraphrasable as an event of Namjoon doing/producing words, and within

the set of possible words/utterances, what was produced was a (particular) sentence. Again, the ACC-phrase predicates over the  $\lambda$ -bound  $x$  of *word'*.

One of the major upshots of Chung & Ladusaw (2004)'s account is that, like van Geenhoven (1998), they are able to have a property-denoting item of type  $\langle e, t \rangle$  compose directly with the main predicate, and by suggesting a mode of composition that is *not* Function Application, they are able to accomplish this composition without changing anything about the semantic representation of the verb. Additionally, with the assumption that existential closure of all variables occurs by the time we reach the event variable, we can also capture the obligatory narrow scope of incorporees, without the need for type-shifting. In the upcoming section, I will propose my own account of classificatory incorporation that maintains these two major advantages coming out of the Chung & Ladusaw (2004) proposal, but with modifications to the compositional approach and assumed mapping between syntax and semantics that resolves the many issues expressed above.

### **§ 3.3 Analysis of Korean classificatory incorporation**

My proposal for Korean classificatory incorporation requires the following ingredients. First, I adopt the Kratzer (1996) viewpoint that an external argument is introduced by a separate functional projection Voice, resolving the mechanical issues with lambda-reordering. Then, I propose that composition between an incorporee and a main predicate is one of Predicate Modification (Heim & Kratzer 1998), rather than Chung & Ladusaw (2004)'s Restrict. Finally, I assert a trade-off between choosing to modify, vs. directly saturate, the internal argument of the main predicate: a restricted variable must

be bound by an operator, and cannot be directly saturated by any semantic entity via Function Application, even if the entity is of a compatible type. In principle, a variable can be modified more than once, so long as the modification is pragmatically plausible, but after modification, a restricted variable must be existentially bound. I will walk through each of these pieces step by step.

### 3.3.1 The semantic proposal

The first update to the Chung & Ladusaw (2004) system is to adopt a Kratzerian (1996) view that an EA is introduced by a separate functional projection, Voice. This resolves the notational issue with  $\lambda$ -demotion: if the external argument is severed from the main predicate, there is no need to play with the ordering of the internal argument with respect to the external argument within the lambda-prefix of the main predicate, because the external argument is no longer part of the main predicate's denotation. Without the stipulation of lambda-reordering, Chung & Ladusaw (2004)'s operation is reduceable to Predicate Modification: I propose, to keep our number of composition modes to minimum, that we can assert that incorporees are predicates which compose with the main predicate simply via Predicate Modification (72), as a sub-instance of where an  $\langle e, t \rangle$  predicate modifies an  $\langle e, st \rangle$  predicate.

(72) **Predicate Modification (P. M.), (updated):**

Given a function  $f$  of type  $\langle e, \langle s, t \rangle \rangle$  and a function  $g$  of type  $\langle e, t \rangle$ , where:

a.  $\llbracket f \rrbracket = \lambda x_e \lambda e_s. [P(x)(e)]$

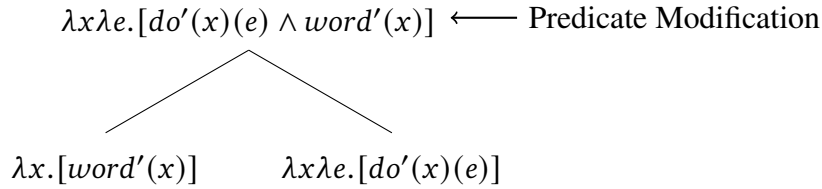
b.  $\llbracket g \rrbracket = \lambda x_e. [Q(x)]$

Modifying  $f$  with  $g$  yields:  $P.M.(f, g) \equiv \lambda x_e \lambda e_s. [P(x)(e) \wedge Q(x)]$

For the simple case of non-classificatory incorporation, as in the sentence in (73), adopting (72) as the mode of composition between an incorporee and a main predicate and removing the external argument from the main predicate’s denotation, will get us the first step of composition represented in (74).

- (73) *namcwuni-ka mal-ha-yss-eyo*  
 Namjoon-NOM word-do-PST-DECL  
 “Namjoon spoke.”

- (74) First step of LF composition for (73):



Even though we don’t need to worry about ordering with respect to the external argument anymore, we still have an ordering issue with the lambda prefix of (74). The internal argument is still available for additional modification (which we want, for the classificatory instances), but, at some point, we will need to be able to move on, to target the event variable, since Voice composes with a predicate structure through Event Identification (Kratzer 1996), restated in (75).

- (75) **Event Identification:**

Given a function  $f$  of type  $\langle s, t \rangle$  and a function  $g$  of type  $\langle e, \langle s, t \rangle \rangle$ , where:

- a.  $\llbracket f \rrbracket = \lambda e_s. [P(e)]$
- b.  $\llbracket g \rrbracket = \lambda x_e \lambda e_s. [Q(x)(e)]$

Identifying  $f$  with  $g$  yields:

$$\text{IDENT}_{\text{EVENT}}(f, g) \equiv \lambda x_e \lambda e_s. [P(e) \wedge Q(x)(e)]$$

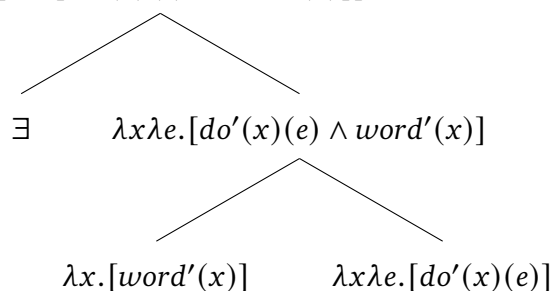
### §3.3 Analysis of Korean classificatory incorporation

We could re-introduce Chung & Ladusaw (2004)’s notational suggestion, only this time allowing  $\lambda x$  to be demoted *past* the event variable, but this would produce the exact same problem as the original system, where, in theory, nothing would stop us from being able to re-target  $\lambda x$  after the external argument was introduced. We know this is not possible— empirically, the internal argument variable has one shot at being targeted for modification, and once we move onto introducing the external argument, we can never go back to modify the internal argument again.

To capture this in our system in a way that is constrained, I propose that we scaffold existential closure, as something that applies to any variable of the main predicate that has been modified, once all modification is complete (76). This will take the relevant variable out of the lambda prefix, preventing any more composition operations from targeting it, and nothing goes wrong with our scope predictions, because existential closure of the internal argument variable after modification will ensure obligatory narrow scope with respect to any higher operators, like negation.

(76) Second step of LF composition for (73):

$\lambda e. [\exists x. [do'(x)(e) \wedge word'(x)]] \leftarrow \exists$  Closure of IA variable



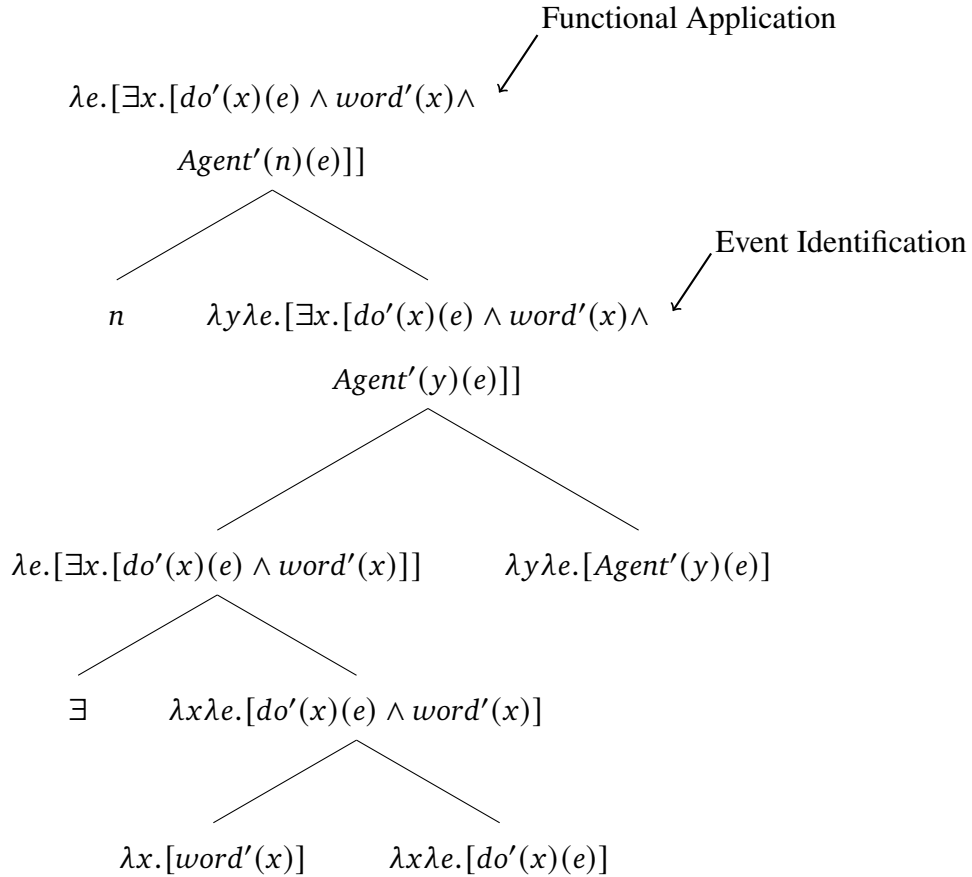
The event variable is now available to be targeted by Event Identification<sup>5</sup>; Voice

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<sup>5</sup>This system also allows, in principle, for the possibility that the external argument could be modified and then existentially closed as well.

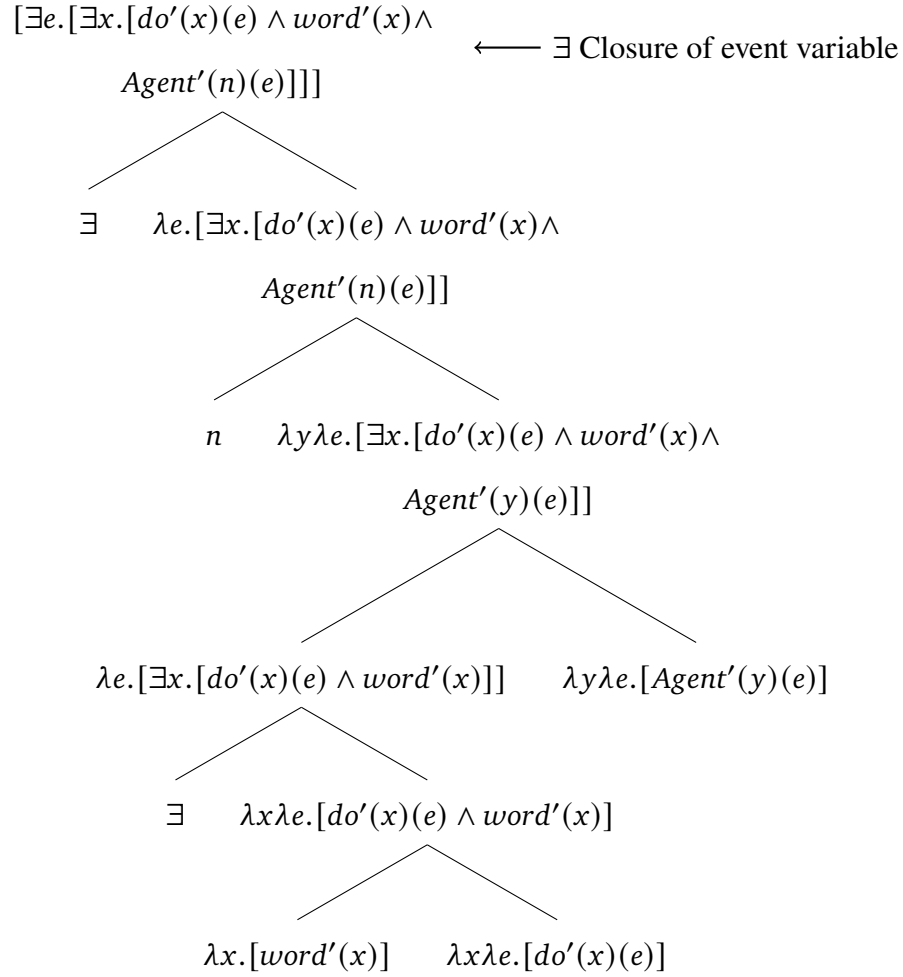
composes with the structure, and then the external argument composes via Function Application (77).

(77) Third step of LF composition for (73):



At this point, any additional modifications of the event variable could occur (such as manner adverbs). After all modifiers of the event are added, we would existentially close the event variable, just as we did for the IA. This final step will give us the completed LF for the argument structure of a simple incorporation construction (78).

(78) Fourth step of LF composition for (73):

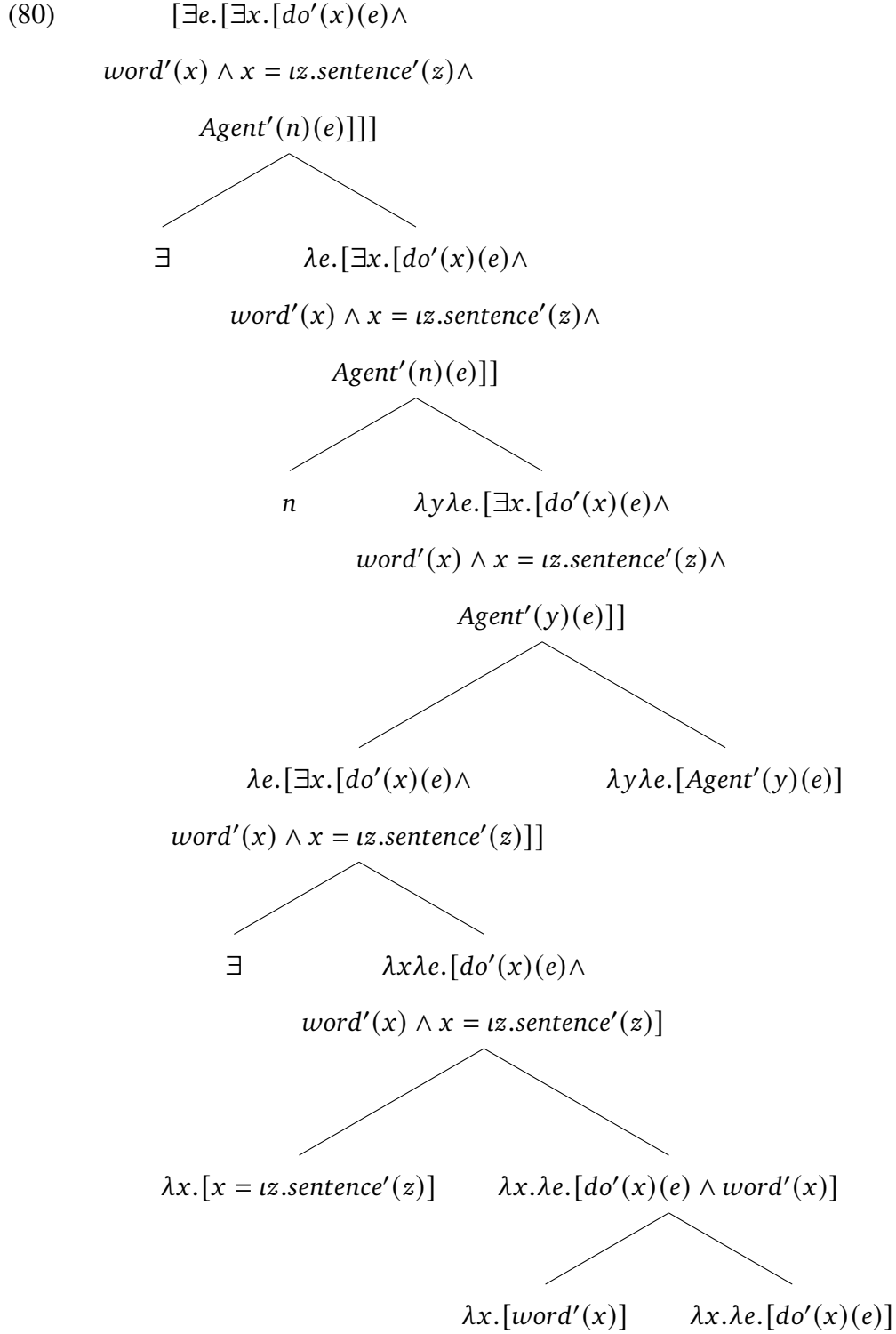


The LF composition of a classificatory incorporation construction, as in (79), would be almost identical, with the exception of a modifier that targets the IA variable, just before it is existentially quantified. A full derivation is given in (80).

(79) *namcwuni-ka mwuncang-ul mal-ha-yss-eyo*

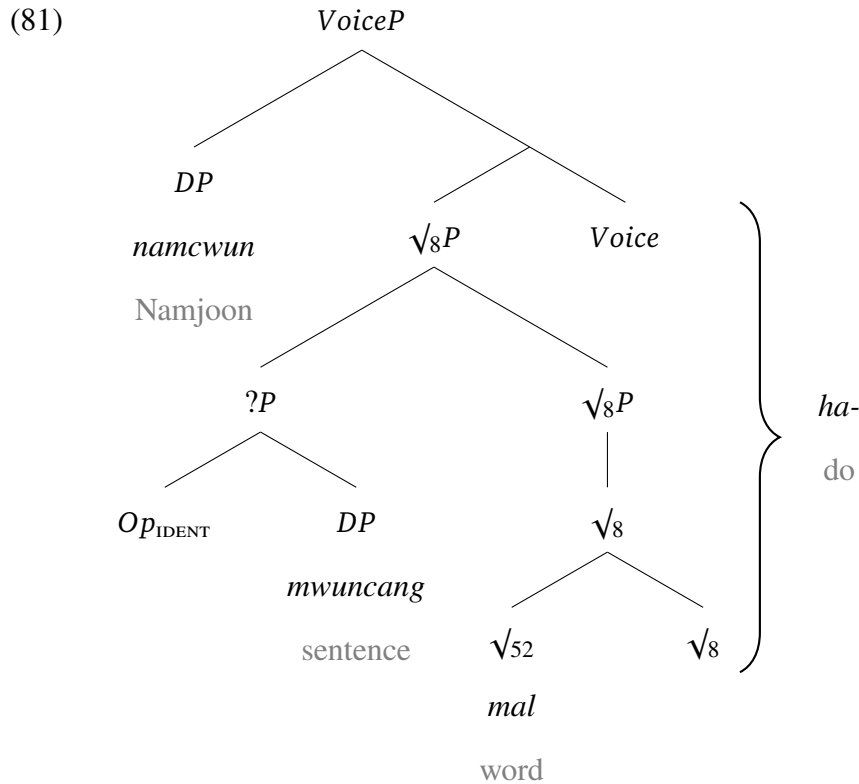
Namjoon-NOM sentence-ACC **word**-do-PST-DECL

“Namjoon said (the) sentence.”



### 3.3.2 The syntactic proposal

The proposed corresponding base syntactic structure to this LF composition is given in (81). Like van Geenhoven (1998), I treat “sentence” here to be an external modifier (with the semantics argued for in §3.1), which merges with the main predicate structure, like any VP modifier would, but semantically targets the  $x$  variable denoted by the incorporee. We maintain isomorphism between Syntax and LF.



The adjunct *mwuncang*, is represented as an adjunct to the  $\sqrt{P}$  of the main predicate<sup>6</sup>. Per §3.1, there is some assumed structural complexity, involving the covert IDENT operator (Potts 2002; Jenks 2014), but I am uncertain of the correct label of the containing

<sup>6</sup>Here, I assume that  $\sqrt{8}$  corresponds to the main predicate “do”, which, under the Spanning analysis of §2.4.3 is part of a span  $\langle \sqrt{8}, \text{Voice} \rangle$  expounded by *ha-*.

category, which I notate in (81) simply as ?P, to remain agnostic. Beyond the issues raised by van Geenhoven (1998) against a head-movement account of incorporation, and the issues I raised in §3.2.2 against Chung & Ladusaw (2004)’s structural assumptions, it is empirically evident for Korean classificatory incorporation constructions that the ACC-phrase adjunct *mwuncang-ul* cannot have been generated as an adjunct within a nominal phrase. It has the wrong case marking: all non-clausal modifiers within a Korean nominal must be marked genitive case, as in (82) (An 2014).

- (82) a. *ywulep-ulo\*(-uy)*      *yehayng*  
Europe-toward\*(-GEN) trip  
“a trip to Europe” (An 2014: 364)
- b. *hayngpok\*(-uy)*      *swunkan*  
happiness\*(-GEN) moment  
“a happy moment” (An 2014: 364)
- c. *mikwuk-ulo.pwuthe\*(-uy)*      *phyenci*  
United.States-from\*(-GEN) letter  
“a letter from the United States” (An 2014: 364)
- d. *taypwupwun\*(-uy)*      *salam*  
majority\*(-GEN) people  
“Most people”

Not only does the adjunct in the classificatory incorporation construction have ACC, which only shows up on satellite phrases (adjunct or argument) in the verbal domain (Jou 2024), the adjunct also does not have the semantic interpretation that it would if it were grammatically licensed as a modifier inside of the nominal: it is ungrammatical for

### §3.3 Analysis of Korean classificatory incorporation

it to be a bare DP modifier to *mal*, and with genitive marking, it can only be interpreted as a possessive of some kind (83). The copulaic semantics argued for in §3.1 are not possible for any attempt of *mwuncang* as a modifier within the nominal domain.

- (83) a. \* *mwuncang mal*  
           sentence word  
           Intended “a word (which was) a sentence”  
           (Can only be interpreted as a noun-noun compound, i.e., “sentence word”)
- b. \* *mwuncang-uy mal*  
           sentence-GEN word  
           Intended “a word (which was) a sentence”  
           (Can only be interpreted as a possessive of some kind, i.e., “the sentence’s word/the word of the sentence”)

While *mwuncang* cannot be a modifier to a noun, it is curious that the same constraint does not apply for clausal modifiers (84), e.g., NC clauses, which are possible for *mal* regardless of its status as an incorporee.

- (84) a. *san-ey ywulyeng-i iss-ta-nun mal*  
           mountain-LOC ghost-NOM exist.PRS-DECL-ADN word  
           “the word/claim/statement that there is a ghost on the mountain”
- b. *hoseki-ka san-ey ywulyeng-i iss-ta-ko*  
           Hoseok-NOM mountain-LOC ghost-NOM exist.PRS-DECL-QUOT  
           *mal-ha-yss-ta*  
           word-do-PST-DECL  
           “Hoseok said that there is a ghost on the mountain”

### Chapter 3 *Beyond sisterhood, part 1: non-realization*

Under the analysis I adopt here, where I extend the semantics of NC clausal modifiers from Jenks (2014) to modifiers like *mwuncang*, this asymmetry remains unexplained. This asymmetry, between the licensing of a DP vs. a CP in nominal vs. verbal domains is true beyond Korean, for “noun-complement” constructions more broadly (see discussion in, for example, Grimshaw 1990; Moulton 2009). I set this aside for future work.

The incorporee, *mal*, is represented in (81) as simply a Root, adjoined to the Root of the main predicate, akin to Root compounding. There are two reasons for this: for one, the Root *mal* is NOT a syntactic argument of the main predicate “do”—per observations from van Geenhoven (1998) and Chung & Ladusaw (2004), an incorporating structure is syntactically intransitive. Though Korean makes it difficult to confirm transitivity for this particular sentence, since it is a nominative-accusative aligned language with little to no morphological agreement inflection surfacing on the verb, this choice makes the account empirically inline with the data from W. G. and Chamorro. Secondly, under the present proposal, we hypothesize that there are two main modes of composition, Predicate Modification (P.M.) and Function Application (F.A.), and that they correspond to adjuncts and arguments in the syntax, respectively. As such, since *mal* composes via P.M., then it should be syntactically represented as an adjunct.

With the structural proposal in place, we now turn to making sense of the case marking facts. Since Jou (2024) builds a Dependent Case Theory analysis around adjuncts in Korean, it makes sense to start with her account, and see how far it gets us in deriving the case marking behavior of Korean classificatory incorporation. As just a Root, serving as a modifier to another Root, we predict that the incorporee *mal* should not receive case, under Jou (2024)’s model for Korean. In her system, she refines the successive-cyclic Dependent Case model proposed by Levin (2017), which asserts a locality domain for

### §3.3 Analysis of Korean classificatory incorporation

dependent case assignment (85).

(85) Evaluate a nominal for case in every phase it occupies. (Levin 2017: 456)

Jou (2024) proposes an updated (85) such that it makes explicit reference to *pairs* of nominals present in a given phase. She defines a *case target* as an NP that bears an unvalued case feature ([Case : \_\_\_]), and a *case target pair* as a pair of two distinct case targets. A pair of DPs are associated with a phase if at least one member of the pair is located in the phase<sup>7</sup>. With these definitions in hand, dependent case valuation proceeds as laid out in (86), following downward dependent case for Korean as a nominative-accusative aligned language.

(86) Dependent case valuation: Evaluate every **case target pair** that is *associated with the current phase* for dependent case per the Dependent case algorithm.

- a. **Downward dependent case** (Baker 2015): if there are two distinct NPs in the same phase such that NP1 c-commands NP2, then value the case feature of NP2 as accusative, unless NP1 has already been marked for case.

Her derivations for the durative/multiplicative adjuncts in Korean for transitive and unergative constructions proceed as follows. In both transitive (87) and unergative (88) predicate structures, the adjunct is *always* accusative case marked, and can never receive nominative marking.

(87) *yolisa-ka naympi-lul/\*-ka ney pen-ul talkwu-ess-ta*  
 cook-NOM skillet-ACC/\*-NOM four time-ACC heat-PST-DECL

“The cook heated the skillet twice” (Jou 2024: 133–134)

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<sup>7</sup>The particulars of this definition, which allows a pair of NPs to be a potential case target pair even if they are in different phases, is relevant for her account of case assignment to Dur/Multi NPs in non-active constructions— I do not cover those here.

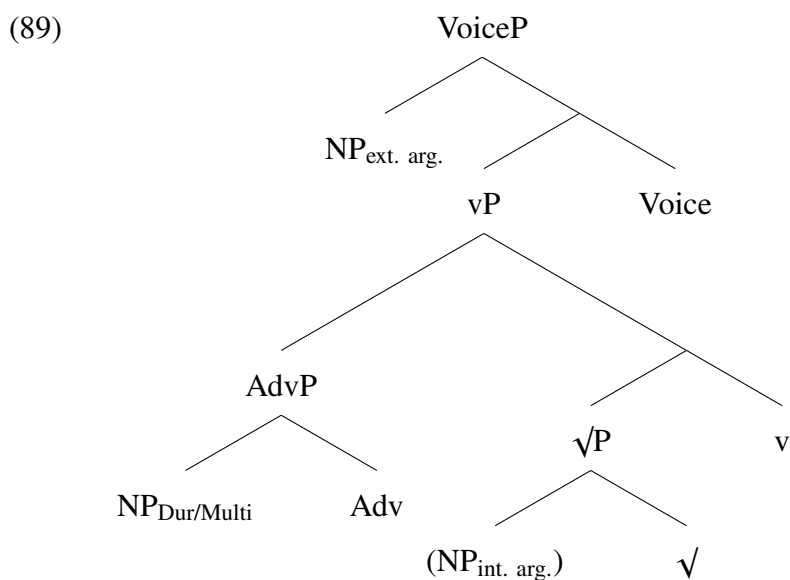
(88) *mina-ka tases pen-ul/\*-i haphwumha-yss-ta*

Mina-NOM five time-ACC/\*-NOM yawn-PST-DECL

“Mina yawned five times.”

(Jou 2024: 134)

The assumed structure in Jou (2024) for a transitive/unergative construction with a durative or multiplicative adverbial, at case evaluation of VoiceP (the first assumed phase), is given in (89). The IA is noted as optional—it would be present for a transitive, and absent for an unergative.



(adapted from Jou 2024:134)

With the merge of the phase head Voice, the structure is evaluated for case: dependent case evaluation will list all possible case target pairs in the VoiceP, and check each for their c-command relations. The EA and the durative/multiplicative NP will be a case target pair, and, if the construction is transitive, the EA and the IA will be another case target pair. The relevant pairings, then, are  $\langle NP_{EA}, NP_{Dur/Multi} \rangle$  and  $\langle NP_{EA}, NP_{IA} \rangle$ . Per (86), the Dur/Multi NP will be assigned downward dependent case (ACC), and the IA, if

### §3.3 Analysis of Korean classificatory incorporation

present in the structure, will be assigned downward dependent case (ACC) as well. Jou (2024) asserts that, since there is no unmarked case defined for VoiceP, the EA remains caseless at this point in the derivation, and will undergo case evaluation again in the next phase (the CP phase), where it will be assigned unmarked case (NOM).

The establishment of case target pairs is where Jou (2024)'s claim that the containing category of durative/multiplicative adjuncts is AdvP becomes crucial: if the adjunct was just an NP, it would c-command the internal argument NP, and we would expect the adjunct NP to form a case target pair with the internal argument. By assuming that the durative/multiplicative NP is embedded within an AdvP, Jou (2024) is able to prevent this c-command relationship; the potential pair of the durative/multiplicative NP and the IA will *not* be a relevant pairing for dependent case evaluation, since neither NP c-commands the other<sup>8</sup>. Something that is left unexplained by this account is exactly how and why an NP embedded under a null Adv head should need case to begin with. This analysis does not line up neatly with other independently established observations about Korean case marking, either. Korean is known for having a very liberal case system, where case recipients can receive more than one case (often referred to as “case stacking”; see Gerds & Youn 1988, 1990; Maling 2009; Yoon 2005; Jo 2001; Levin 2017; among others). One fascinating piece of this puzzle, though often left out of the discussion in recent work, is that PP adjuncts in Korean can sometimes themselves receive ACC case. Consider, for example, the data point in (90), where ACC marking appears on a locative phrase<sup>9</sup>.

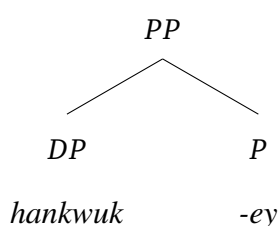
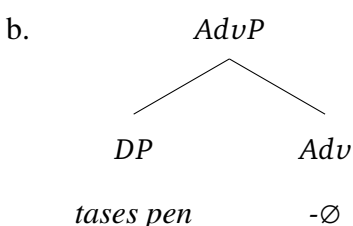
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<sup>8</sup>A very similar analytical move to Baker (2014)'s positing of a null P heading the specifier of an Applicative head in Shipibo, to avoid triggering dependent case assignment on the IA.

<sup>9</sup>The focus marker *-man* (“only”) is optionally included, as many Korean speakers note that case stacking judgments greatly improve if a focus marker intervenes between two stacked cases.

- (90) *hanyengi-ka hankwuk-ey(-man)-ul ka-nta*  
 Hanyoung-NOM Korea-to(-only)-ACC go-PRS.DECL  
 ‘‘Hanyoung goes/is going to Korea (only).’’

If we take the structure of the PP adjunct in (90) to be (91a), and the structure of a durative/multiplicative adjunct to be (91b), alongside the observation that both types of adjuncts are possible case recipients in Korean, Jou (2024)’s account makes the wrong prediction about the location of the accusative case marker. Since her account requires that the DP embedded within the adjunct is the thing that receives case, she would predict that it is the DP within the PP modifier that is a case recipient as well: this predicts a linear order of affixes such that the accusative case marker appears directly after the head of the embedded nominal, with the post-position following the case marker (\**hankwuk-ul-ey*). The ordering of affixes in (90), however, is reversed: the ACC case marker *-lul* appears *outside* of the postposition *-ey* (*hankwuk-ey-lul*), suggesting instead that it is the entire PP which is assigned accusative case, not the DP inside of it.

- (91) a.  b. 

Accusative case marking on the outside of PPs suggests that adjuncts, more generally, are possible case recipients in Korean. Even if we take as given the assumption that the durative/multiplicative adjuncts are internally complex, there is no reason to assert that the embedded DP is the case recipient, when it is just as possible— and given the behavior of PP adjuncts, more plausible— that the entire adjunct itself is the

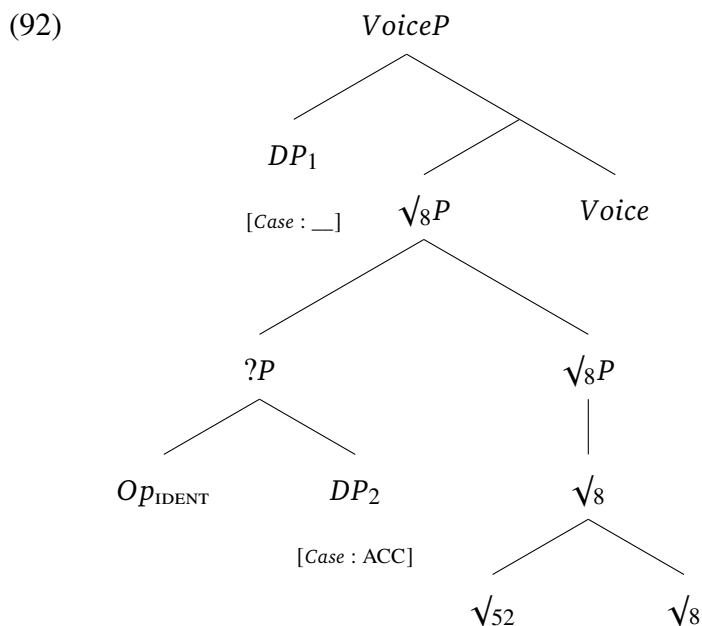
### §3.3 Analysis of Korean classificatory incorporation

case recipient, in which case it *is* a case competitor that c-commands the IA in (89). With this in mind, the stipulation that case assignment targets the DP inside of the durative/multiplicative adjunct rather than the adjunct as a whole<sup>10</sup> is simply a bandaid serving to fix a bigger c-command problem that arises from attempting to derive Korean accusative case marking facts with a Dependent Case calculus. Further critique will be given in Chapter 4, where, in §4.5, I will argue that the Korean case system *cannot* be derived by the current tools of Dependent Case Theory.

For now, returning to the Korean classificatory incorporation constructions, I note that, as a happy by-product of the fact that there is some hypothesized structural complexity for classificatory adjuncts such that a DP composes with a predicativizing operator (per §3.1), Jou (2024)’s system correctly predicts obligatory accusative case on the classificatory adjunct. Consider the proposed structure again (92). The semantically encoded internal argument of the main predicate is indirectly saturated, and not syntactically projected, meaning that, for the purposes of case evaluation, this structure is unergative.

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<sup>10</sup>And one would need to appeal to some consequential difference between null vs. overt heads such that the complement of a null head is a target for case assignment, but the complement of an overt head is not— plus, a further stipulation that all PPs are nonetheless still case competitors in Korean,



Under Jou (2024)’s account, the only possible case target pair evaluated at the VoiceP phase is that of the external argument ( $DP_1$ ), and the DP within the adjunct phrase ( $DP_2$ ), forming the case target pair  $\langle DP_1, DP_2 \rangle$ . Per (86),  $DP_2$  will be assigned downward dependent case (ACC).  $DP_1$  will remain caseless at this time, and will eventually be assigned unmarked case (NOM), when evaluated again in the CP phase.

The discussed shortcomings of Jou (2024) are not issues specific to the classificatory incorporation structural proposal put forth in this chapter. Her account makes the same prediction for durative/multiplicative adjuncts and classificatory adjuncts, which, given that both of these types of adjuncts always receive accusative case in syntactically unergative structures, is desirable. Even if we ultimately decide that Jou (2024)’s account is insufficient in capturing the full Korean case system, whatever case analysis we do ultimately adopt should ensure that durative/multiplicative adjuncts and classificatory adjuncts pattern in the same way.

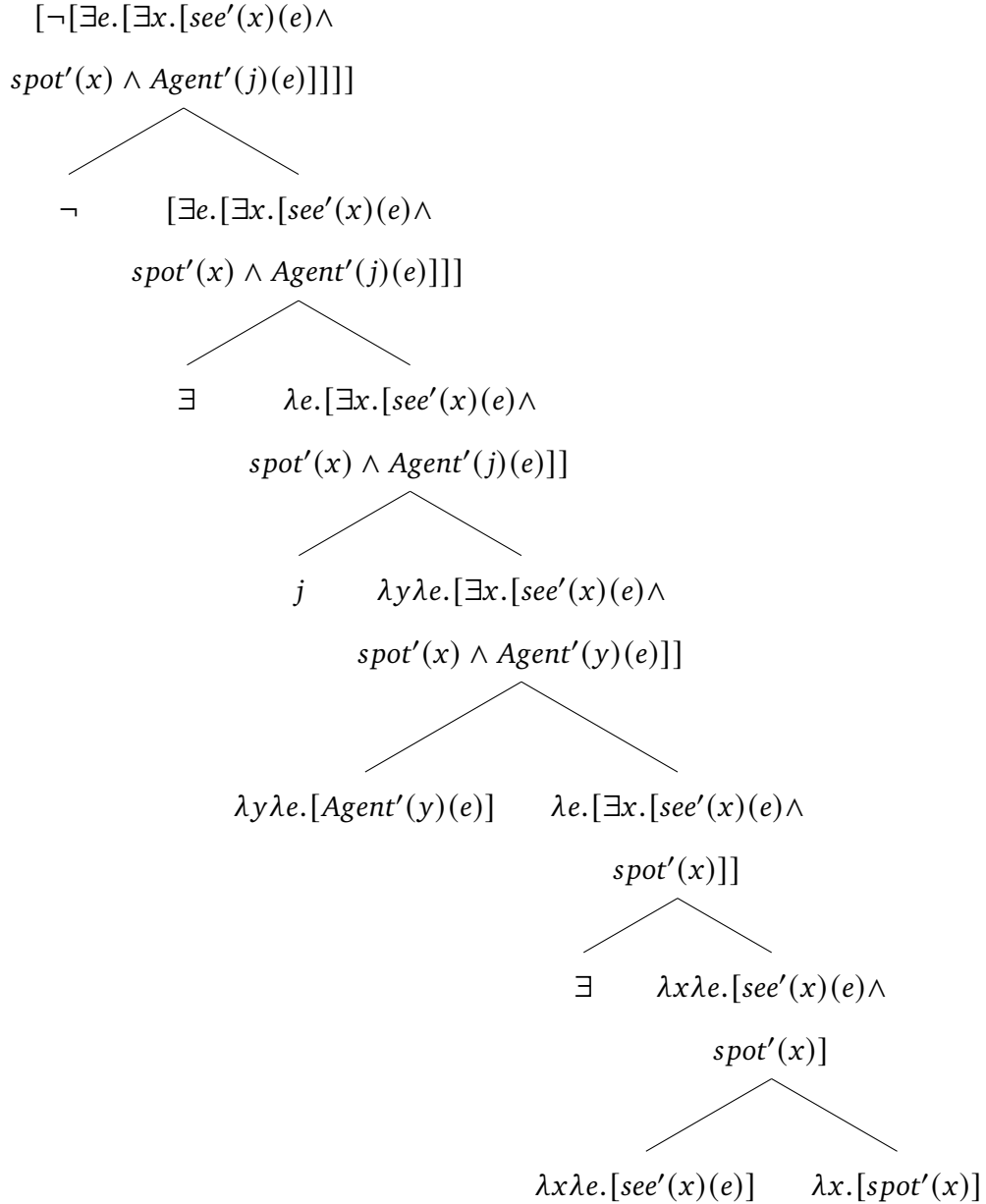
## § 3.4 Extension to bare plurals

The van Geenhoven (1998) account juxtaposed the semantics of incorporees in W. G. with Germanic bare plurals: given the overlap in their semantic profiles, it is desirable to be able to extend the above account of Korean classificatory incorporation to Germanic bare plurals. Recall, for example, the English data point in (93): the bare plural “spots”, can only take narrow scope with respect to negation.

- (93) John didn’t see spots on the floor.
- i. “It is not the case that John saw spots on the floor.”  $\neg > \exists$
  - ii. # “There were spots on the floor that John didn’t see.”  $*\exists > \neg$
- (van Geenhoven 1998: 32; from Carlson 1977)

Under the proposed analysis in §3.3, assuming “spots” to semantically contribute a property of type  $\langle e, t \rangle$ , we construct the following LF for (93), given in (94). The predicate  $\lambda x.[spot'(x)]$  composes with the main predicate  $\lambda x \lambda e.[see'(x)(e)]$ , restricting the internal argument variable  $x$ . This variable is then existentially closed. Voice composes with the structure via Event Identification, followed by direct saturation of the EA. after existentially closing the event variable, negation would compose with the VoiceP, negating the entire event and guaranteeing obligatorily narrow scope of the existential operator binding  $x$  with respect to the negation operator.

(94) Argument structure LF composition for (93):



For the corresponding syntactic structure, I adopt a similar perspective to **van Geenhoven (1998)**— she suggests that the only difference between Germanic and W. Greenlandic is that a semantic incorporee is syntactically an N head in W. Greenlandic, but

syntactically an NP in Germanic. In support of this perspective we can note that empirically, there seems to be a ban on head adjunction in some syntactic environments in Germanic languages, for example, for matrix predicates.

- (95) a. \* I berry-picked yesterday  
 b. I went berry-picking yesterday.

Additionally, bare plurals can have attributive modifiers, suggesting that they are, themselves, capable of being internally complex (96).

- (96) a. John didn't see black spots on the floor.  
 b. John didn't see colorful spots on the floor.

I suggest, similarly, that bare plurals are indeed phrasal, and only different from the incorporees analyzed in §3.3 in being  $\sqrt{\text{Ps}}$ , rather than  $\sqrt{\text{s}}$ .

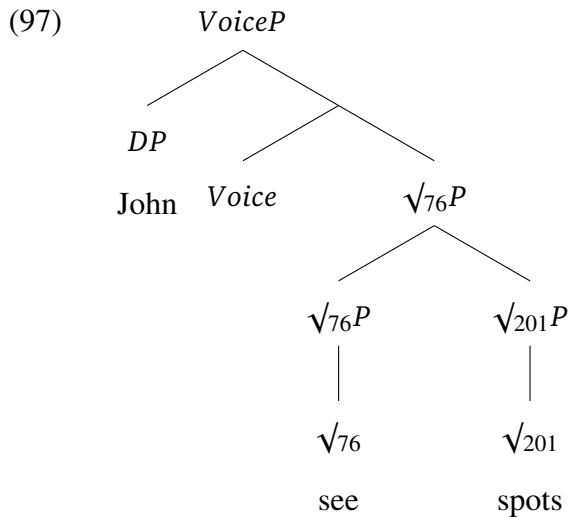
The analysis in §3.3 commits to a syntax-semantics mapping such that any predicate that composes with the main structure as a modifier (via P.M.) should compose as an adjunct in the syntax. Therefore, I predict that a Germanic bare plural is a syntactic adjunct, and that the underlying structure of a sentence like (93) is syntactically unergative. To test this further, we would want to look for case patterns that could confirm intransitivity, which is not immediately identifiable in English or German bare plural constructions— for English because case marking is only overt for pronominal elements, and for German because case marking is best evaluated given overtly marked determiners, and bare plurals, are, of course, bare<sup>11</sup>.

I propose the following structure in (97). This proposal follows straightforwardly from a general constraint on adjunction: a phrasal adjunct must adjoin to something

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<sup>11</sup>Not to mention that Germanic plurals are all grammatically feminine, and there is no overt morphological distinction between ACC/NOM in feminine forms.

phrasal, and a head must adjoin to a head— if Germanic languages disallow head adjunction in matrix predicates, as (95) seems to suggest, then  $\sqrt{P}$  adjunction would be the next closest thing.



The choice for positing that a Germanic bare plural is syntactically a  $\sqrt{P}$ , as opposed to an NP (or  $nP$ ), is borne from my decision in Chapter 2 to not assume categorizing heads<sup>12</sup>. Minimally, though, what my account requires is only that the Germanic bare plural be a phrasal modifier to the matrix predicate— future investigation would be needed to decisively argue for or against a particular label for this modifier’s containing category.

The predictions made by this bare plurals extension can be evaluated further with Korean. A general constraint on adjunction that says that heads must adjoin to heads, and phrases to phrases, in principle suggests that the proposed structure in (97) is possible in Korean, too. Given previous discussion of Korean’s liberal case system,

<sup>12</sup>This would then consequently require an analysis of attributive modifiers of bare plurals in Germanic as Root domain modifiers, not nominal domain modifiers. I set this aside as a prediction to explore in future research.

### §3.4 Extension to bare plurals

where adjuncts can be case recipients, we might expect that a “bare plural”, as a phrasal modifier, would be marked for case in Korean. This is, in fact, borne out: in a Korean classificatory incorporation construction, accusative case marking *is* optionally possible on the incorporee. For example, the following sentence, with the incorporee *mal* prosodically separated from the verb and exhibiting overt accusative case marking, is grammatical (98).

- (98) *namcwun-i mwuncang-ul mal-ul ha-yss-ta*  
 Namjoon-NOM sentence-ACC word-ACC do-PST-DECL  
 “Namjoon said the sentence.”

Native speakers note that the use of ACC marking on *mal* in (98) gives rise to some kind of focus effect<sup>13</sup>, but abstracting away from these nuances, the very fact that *mal* can be case marked indicates that a phrasal constituent ( $\sqrt{P}$ ), not just a head ( $\sqrt{\phantom{P}}$ ), too, can be predicative. Since the adjunct *mwuncang-ul* (“sentence-ACC”) is still licensed grammatically in (98), it must be the case that *mal-ul* (“word-ACC”) has composed as a predicative modifier with the main predicate *ha-* (“do”) leaving the internal argument variable transparent for further modification. Additionally, *mal-ul*, despite being case marked, still takes obligatory narrow scope (99).

- (99) *namcwuni-ka mwuncang-ul mal-ul an ha-yss-ta*  
 Namjoon-NOM sentence-ACC word-ACC NEG do-PST-DECL  
 “Namjoon did not say a sentence.”

- i. “It is not the case that N. said words which were a sentence.”  $\neg > \exists$   
 ii. # “There were words which were a sentence, that N. did not say.”  $*\exists > \neg$

<sup>13</sup>The use of Korean case as discourse markers indicating contrastive focus is a known phenomenon (see Jun 2015 and citations therein) but is not yet well understood formally (though cf. Jo 2001).

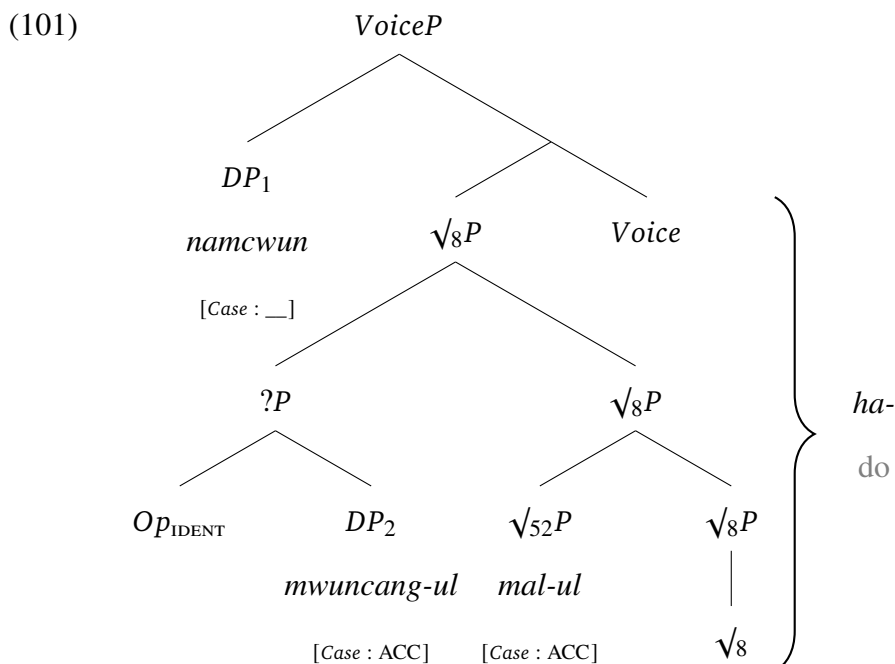
The case marking on *mal* in (99) is still accounted for within Jou (2024)’s system, but only if we allow  $\sqrt{P}$ s to be case competitors in Korean. I note that it *must* be the case that *mal* is a  $\sqrt{P}$  even when case marked, because if we use our adjectival diagnostic to confirm the presence/absence of nominal functional structure, we find that when the classificatory phrase is present, adjectival modification of *mal* is disallowed (100).

(100) \* *namcwuni-ka mwuncang-ul khu-n mal-ul ha-yss-ta*

Namjoon-NOM sentence-ACC big-ADJ word-ACC do-PST-DECL

Intended: “Namjoon spoke a big/loud word (which was) a sentence.”

To make an as minimal as possible change to Jou (2024)’s account, then, we need to loosen the definition of what constituents can count as case competitors in Korean, to allow at least DPs and  $\sqrt{P}$ s. In the syntactic structure, given in (101), there will be two case target pairs evaluated at the VoiceP phase:  $\langle DP_1, DP_2 \rangle$ , and  $\langle DP_1, \sqrt{52P} \rangle$ .



### §3.4 *Extension to bare plurals*

Per (86), both  $DP_2$  and  $\sqrt{_{52}P}$  will be assigned downward dependent case (ACC).

Allowing  $\sqrt{P}$  adjuncts to be possible case recipients feels odd within Jou (2024)’s account, which assumes that only nominals should be possible case recipients, but it feels somewhat less odd given the critiques expressed earlier in §3.3.2, where we observed that the case system of Korean already independently requires that adjuncts (including other non-nominal adjuncts, like PPs) be possible case recipients. In Chapter 4, I will sharpen and motivate the generalization that all specifiers and adjuncts (which form the natural class of “maximal projections that are sisters to phrases”; Privoznov 2021) must receive case in Korean. This generalization in Chapter 4 also serves to make sense of why it is not just any  $\sqrt{P}$  that is a potential case target, but adjunct  $\sqrt{Ps}$ , specifically. Under this view, the Root phrase serving as the base of the main predicate— $\sqrt{_{8}P}$  in (101)—is not a potential case target, as it is never an adjunct nor a specifier.

Setting case aside for now, the upshot of the extension of the account to bare plurals results in the hypothesis that incorporation semantics (i.e., the semantics of indirect saturation of the IA variable, leading to restrictive modification and existential closure) can correspond to two possible syntactic structures, which differ simply with respect to the phrasal vs. head distinction of the “incorporee”. Assuming a general principle of adjunction which requires phrasal adjuncts to adjoin with a phrase, and heads to adjoin with heads, I hinted at the possibility of cross-linguistic variation in terms of how acceptable head-head adjunction is. Bare plurals in Germanic, and perhaps reported instances of “pseudo-” incorporation, too, such as the phrasal incorporees in Niuean which allow adjectival and relative clause modification (Massam 2001), and accusative marked incorporees in Hungarian (Farkas & de Swart 2003), might be able to subsumed under this account.

The account predicts that modification of the “classificatory incorporation” type is, in principle, possible in any instance where the IA variable encoded by the main predicate has undergone restrictive modification. Given that in Korean, modifiers of the IA variable are case-marked so long as they are phrasal, it seems reasonable to hypothesize that classificatory incorporation may or may not be possible depending on a given language’s case system. Korean, as we have seen so far, has a very liberal case system, allowing for more than one phrasal entity within a single clause to receive accusative case, as well as permitting possible case stacking. In a language with a stricter case system— one that only has exactly one accusative case to discharge, for example— classificatory modification would be predicted to be disallowed, not because it isn’t compositionally possible in LF, but because the language has no way to license the classificatory modifier, case-wise. All of these predictions are empirically testable, and set the grounds for fruitful future investigation.

### **§ 3.5 Consequences for syntactic argument projection**

This chapter, through a thorough investigation of classificatory incorporation, has argued for a theoretical perspective of the syntax-semantics framework which, building on insights from [van Geenhoven \(1998\)](#) and [Chung & Ladusaw \(2004\)](#), develops a picture of syntactic argument projection that is not mediated by syntactic features, but rather, is a direct reflection of how the internal argument variable of a predicate is restricted or saturated in LF. The account successfully derives the fact that classificatory incorporation is parasitic on incorporation, since only semantic incorporation (i.e., predicate modification), will block direct saturation of the internal argument variable slot via

### §3.5 *Consequences for syntactic argument projection*

Function Application, leaving it transparent for further external modification.

This account paints a very semantic picture of argumenthood: the question posed at the very beginning of this chapter asked, is syntactic argument projection obligatory? I’ve answered no: if a two-place (argument-introducing) predicate is used in the structure, its internal argument variable will always be semantically present in LF, but syntactic argument projection does not have to occur— in the circumstance where the argument is not syntactically projected, the argument will always be existentially closed (after modification, if any has occurred), guaranteeing that the internal argument takes obligatory narrow scope with respect to other operators.

A selectional account of argument introduction fails to fully capture the nuances of incorporation in this chapter. It cannot differentiate between syntactic unergative structures made from argument-introducing predicates and true unergative predicates made from intransitive, one-place predicates, nor can it straightforwardly capture the semantic similarities between bare plurals and incorporees.

Recall the toy example from the introduction, which considered the difference between the simple English sentences in (102), both using the predicate “eat”.

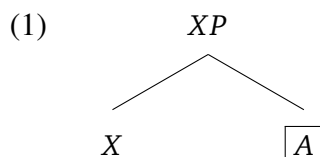
- (102) a. The woman ate a sandwich.  
b. The woman ate.

The account presented in this chapter would predict that (102b) is, in fact, structurally unergative; its difference from an unergative predicate like “laugh” or “sleep” lies in the fact that “eat” has a consistent denotation as a two-place predicate  $\lambda x \lambda e.[eat'(x)(e)]$ . If a DP is not merged in the syntax as a sister to the Root that denotes this predicate, we will simply get existential closure over the internal argument variable.

## Chapter 4

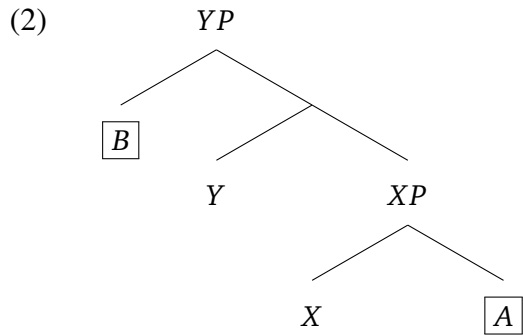
### Beyond sisterhood, part 2: displacement

In the beginning of Chapter 2, I outlined the predictions developed by Kratzer (1996), which collapse the syntactic distinction between “internal” and “external” arguments. The discussion aimed to highlight the observation that the structural positions we associate with certain argument types (i.e., external arguments as specifiers, internal arguments as complements), are epiphenomenal, a consequence of the order in which argument-introducing predicates are merged. Recall, for example, the discussion of the structure in (1), as a representation of the first step of Merge in a given derivation. An argument-introducing predicate  $X$  is involved in the very first Merge step of the derivation, and so its argument  $A$  also takes part in this first step, realized as sister to  $X$ , the closest possible syntactic relationship between any two nodes.

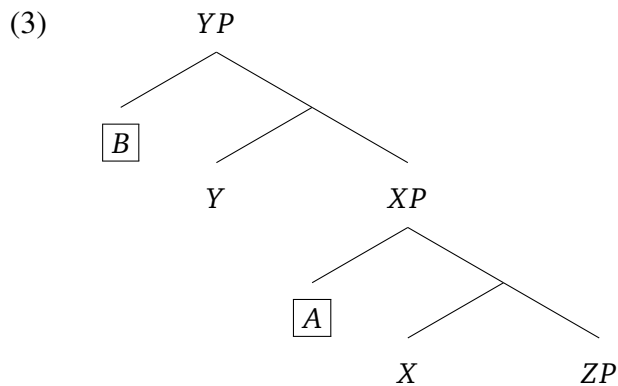


An argument-introducing predicate  $Y$ , if *not* part of the first Merge step of a syntactic derivation (2), will have its argument  $B$  realized as specifier to  $Y$ , maintaining strictest

possible locality given that the sister position is unavailable.

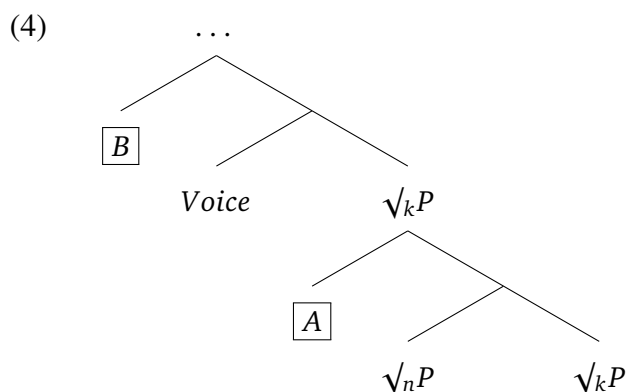


Under this perspective, the status of *A* as a sister to its introducing predicate is malleable; if *X* was ever able to Merge into an already-existing structure, than *A* would also then consequently be realized as a specifier, as in (3).



This chapter argues that, not only is this perspective of argument introduction correct, it falls out as a consequence of the semantic interaction of two argument introducing predicates. In particular, I will argue that a lexical argument-introducing predicate, a Root, can sometimes be like *X* in (3), such that it merges with another phrasal entity *ZP* (which, we will see, is a  $\sqrt{P}$ ). When this happens, the argument of *X* will be realized as a specifier to *X*, exactly as predicted.

The complication that this will pose for selection accounts is not the configuration itself, but the containing category labels that we will identify for  $X$  and  $ZP$  in (3). In particular, we will find that  $X$ , when merging with a  $ZP$ , is a  $\sqrt{P}$  adjunct, *not* a syntactic head. In other words, I will motivate and defend a syntactic structure like (4), and I will show empirically, that despite the fact that  $\sqrt{n}P$  is phrasal, its argument  $A$  is *base-generated* in the specifier position we see in (4).



If this is correct, then we are faced with the reality that an argument-introducing predicate does not always correspond to a head in the syntactic structure. Rather, it can be a  $\sqrt{P}$  adjunct, as well. If this is the case, then syntactic argument introduction cannot involve featural specifications of a head, because sometimes the syntactic item that triggers argument introduction is not a head at all, but a maximal projection.

Through an empirical investigation of what I term argument displacement phenomena, I argue for the dissolution of the strict requirement that an argument-introducing predicate is always exclusively syntactically realized as a head, demonstrating empirically that syntactic introduction of a DP argument tracks the former (the location of constituents that denote argument-introducing predicates), not the latter (syntactic heads). I demonstrate that neither a raising nor a control account for Korean argument

displacement constructions can adequately account for the data, leaving us with only one option in a post-Lexicalist framework: to posit that predicative indefinites (which, in line with the conclusions of Chapter 3, I will suggest are  $\sqrt{P}$  sized) are phrasal entities that, if they have an unsaturated argument variable in their denotation, can syntactically realize an argument as a specifier directly above their merged position.

The organization of this chapter is as follows: Section §4.1 introduces the first argument displacement phenomenon in Korean (Sino-Korean double case constructions), and Section §4.2 introduces the second argument displacement phenomenon (external possession). Section §4.3 demonstrates that both phenomena have the same syntactic restrictions, and argue that neither a movement nor control account can adequately account for the full set of empirical facts. In Section §4.4, I demonstrate how the syntactic properties identified §4.3 parallel the syntactic (and semantic) properties of incorporation analyzed in Chapter 3, and provide an analysis of argument displacement as one where a predicative  $\sqrt{P}$ , i.e. a pseudo-incorporee, merges directly with the main predicate as an adjunct, resulting in modification of the internal argument variable. The consequential position of the pseudo-incorporee's argument falls out from the interaction of our defined semantic modes of composition. Section §4.5 discusses the case assignment facts for these phenomena, and argues that, given all of the moving pieces that have come together, a Dependent Case Theory treatment of Korean (as in Jou 2024) is not possible. I suggest that the future of understanding case assignment in Korean lies in making sense of the common syntactic signature both specifiers and adjuncts have in common, namely, that they are maximal projections that are sisters to phrases (cf. Privoznov 2021). Section §4.6 concludes.

## § 4.1 The challenge of double case constructions

This chapter concerns itself with a famous puzzle within the Korean syntax literature, which I will refer to as double case constructions, or (double) case-marked variants (Ahn 1992; Chae 1996, 1997, 2003; Grimshaw & Mester 1988; Jun 2003, 2006; J. R. Kim 1993; J. B. Kim et al. 2007; S. W. Kim 1994; Manning 1993; Miyamoto & Kishimoto 2016; Pak 2001; Park 1995; Sells 1995; J. H. S. Yoon 1990; J. M. Yoon 1997). While Chapter 2 was largely concerned with complex predicates and AS-Nominals, there is a third possible structural variant which SKLs surface in: a construction that, at least superficially, looks almost the same as the complex predicates, except for the fact that the SKL is marked with ACC case (5–7). The (a) examples show the complex predicate construction, while the (b) examples demonstrate the double case variant.

- (5) a. *ainsyuthain-i pich-uy sokto* -lul *kyeysan-ha-yss-eyo*  
 Einstein-NOM light-GEN speed-ACC calculate-do-PST-DECL  
 “Einstein calculated the speed of light.”
- b. *ainsyuthain-i pich-uy sokto* -lul *kyeysan* -ul *ha-yss-eyo*  
 Einstein-NOM light-GEN speed-ACC calculate-ACC do-PST-DECL  
 “Einstein calculated the speed of light.”
- (6) a. *cikwen-i kongkum* -ul *hoinglyeng-ha-yss-eyo*  
 worker-NOM fund-ACC embezzle-do-PST-DECL  
 “The worker embezzled the funds.”
- b. *cikwen-i kongkum* -ul *hoinglyeng* -ul *ha-yss-eyo*  
 worker-NOM fund-ACC embezzle-ACC do-PST-DECL  
 “The worker embezzled the funds.”

#### §4.1 The challenge of double case constructions

- (7) a. *yenkwuwen-i tongkwul* -ul *thamkwu-ha-yss-eyo*  
 researcher-NOM cave-ACC explore-do-PST-DECL  
 “The researcher explored the cave.”
- b. *yenkwuwen-i tongkwul* -ul *thamkwu* -lul *ha-yss-eyo*  
 researcher-NOM cave-ACC explore-ACC do-PST-DECL  
 “The researcher explored the cave.”

The apparently free alternation between the complex predicates and the case-marked variants has no clear discernible difference in meaning<sup>1</sup>: in all cases, the internal argument (the left-most ACC marked item) is interpreted as the thematic argument of the SKL. This internal argument (IA) can, furthermore, be proven to be clause-mates with the matrix subject given sensitivity to Principle B (8), and can be targeted for A-bar operations (9), suggesting that it is surfacing as an argument that sits in the verbal domain, external to the constituent headed by the SKL.

- (8) *sekcini<sub>i</sub>-ka ku<sub>\*i/j</sub>-lul cosa-lul ha-yss-eyo*  
 Seokjin<sub>i</sub>-NOM 3P.SG.<sub>\*i/j</sub>-ACC investigate-ACC do-PST-DECL  
 “Seokjin<sub>i</sub> investigated him<sub>\*i/j</sub>.”
- (9) *ku cungke<sub>i</sub>-cocha(-to) sekcini-ka*     <sub>i</sub> *cosa-lul ha-yss-eyo*  
 that evidence<sub>i</sub>-even(-also) Seokjin-NOM     <sub>i</sub> investigate-ACC do-PST-DECL  
 “Even that evidence, Seokjin investigated.”

Per Chapter 2, it has already been established that SKLs, are, on their own, incapable

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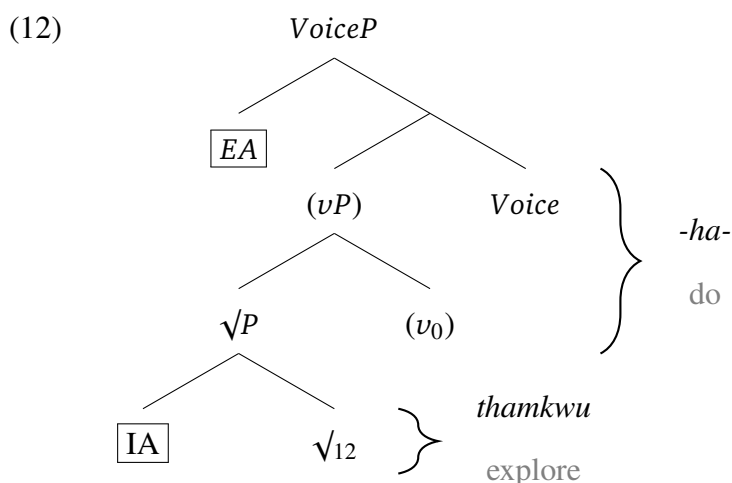
<sup>1</sup>The (a) and (b) examples of (5–7) are truth conditionally equivalent in the same way that “the researcher did exploration of the cave” and “the researcher explored the cave” are truth conditionally equivalent in English.

of heading a construction that has any verbal material (Yoon & Park 2008). As a reminder, in the absence of *ha-*, adverbials (10) and ACC case (11) are completely out.

- (10) [ *yenkwuwen-uy kkunhimeps-nun/\*-i tongkwul thamkwu* ]-*nun*  
 [ researcher-GEN constant-ADJ/\*-ADV cave explore ]-TOP  
 “The researcher’s constant exploration of the cave (. . . was tiring/etc.)”
- (11) [ *yenkwuwen-uy kkunhimeps-nun tongkwul(-uy/\*-ul) thamkwu* ]-*nun*  
 [ researcher-GEN constant-ADJ cave(-GEN/\*-ACC) explore ]-TOP  
 “The researcher’s constant exploration of the cave (. . . was tiring/etc.)”

These facts reaffirm that the ACC case on the IA must be coming from outside of the SKL, corroborating the observations from (8) and (9) that the IA is surfacing syntactically as an argument sitting somewhere in the matrix verbal domain.

Since the SKL is itself receiving ACC in the double case variant, whatever constituent the SKL is creating must be phrasal, disjoint from the verbal structure expounded by *ha-*. We therefore cannot assume the structure proposed for the complex predicates in Chapter 2, given again in (12), where the SKL was itself the matrix predicate.



#### §4.1 The challenge of double case constructions

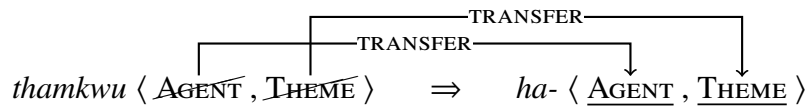
The fact that ACC surfaces on the SKL in the case-marked variants necessitates that minimally, the SKL projects a maximal constituent that is itself a satellite phrase of the verbal domain (of a main verb use of *ha-*; “do”), such that it can be a case recipient.

The challenge that these double case-marked variants pose for theories of argument structure (AS) is a syntax-semantics mapping problem: why should an argument of the SKL (per Chapter 2) be syntactically realized external to the constituent headed by its presumed introducer, in the domain of the matrix verb? In an early Lexicalist account of double case constructions in Japanese, Grimshaw & Mester (1988) characterize this puzzle as an issue where Theta-Marking appears to violate strict sisterhood locality (Chomsky 1981), since the SKL<sup>2</sup> appears to assign a Theta-Role outside of its own maximal projection. They provide a solution through the means of *Argument Transfer*, a lexical operation that allows the SKL to transfer its AGENT and THEME to the light verb, prior to the building of the syntactic structure, schematized in (13). It is then the light verb that actually Theta-Marks the IA, based on the AS instructions it received from the SKL (14). Grimshaw & Mester (1988) stipulate that an NP which has transferred its arguments does not itself need to be Theta-Marked.

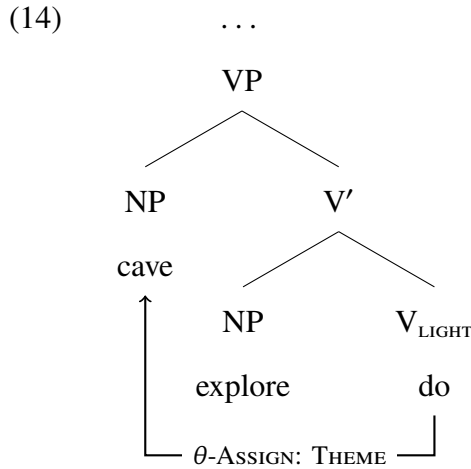
#### (13) Lexical Argument Transfer

*thamkwu* (“explore”), Noun;  $\theta$ -grid:  $\langle \text{AGENT}, \text{THEME} \rangle \dots$

*ha-* (“do”), Light Verb;  $\theta$ -grid:  $\langle \_, \_ \rangle \dots$



<sup>2</sup>SJLs (Sino-Japanese Loans), actually, for the data in Grimshaw & Mester (1988), though I continue to use the term SKL here for simplicity’s sake.

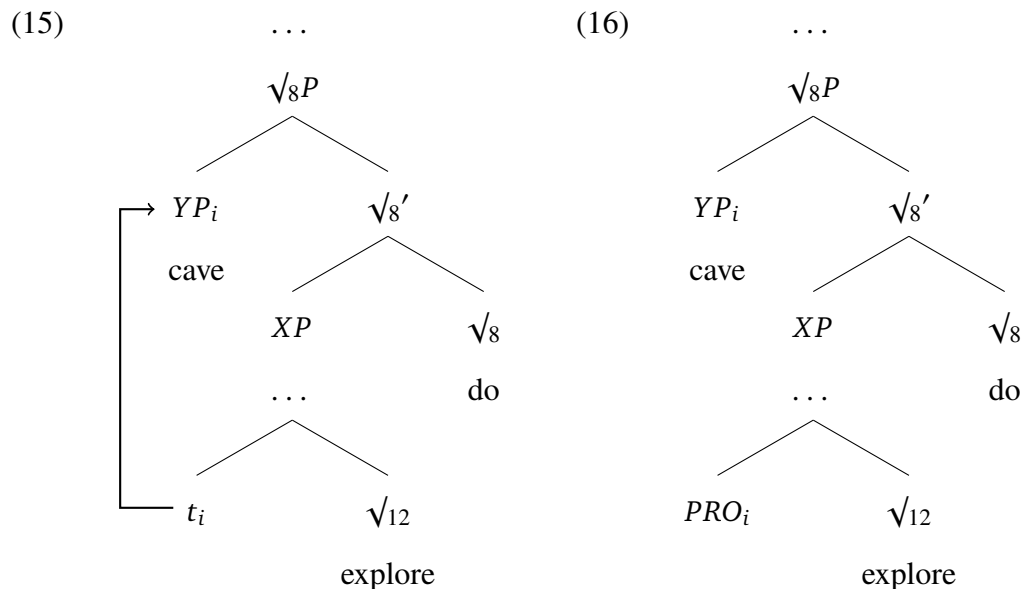


This account assigns a special status to the light verb, which must be Theta deficient (“thematically incomplete”, in their terms)—it is this property of the LV which drives it to take on the arguments of the SKL and project them itself.

**Grimshaw & Mester (1988)**’s analysis is representative of a lexical, non-sisterhood approach to the AS puzzle posed by double case constructions: we allow for an SKL’s internal argument to be realized in a non-sister position, and put the explanatory burden for the SKL’s loss of a complement on a lexical operation that feeds the syntactic derivation. If we were to pursue a non-lexical approach to this same phenomenon, we would instead be inclined to appeal to either movement or control mechanisms, placing the explanatory burden on theories of nominal licensing, and committing to sisterhood as the syntactic relationship that holds always between a head and its internal argument. Movement and control accounts differ only in the assumed identity of the syntactic element generated in the complement position of the SKL, and the nature of the dependency shared by this element and the position where the IA surfaces in the case-marked variants. In a movement account (15), the internal argument of the SKL is mapped to its complement position, as expected, and then must move into the

#### §4.1 The challenge of double case constructions

verbal domain, landing in an argument position. In a control account (16), the internal argument is in fact an argument of the verb, which controls the reference of a PRO (or *pro*) that serves as the true IA of the SKL.



I use the labels XP and YP in (15–16) to remain neutral for now about the exact categorical identity of the two ACC-marked phrases; whatever XP and YP are, they are constituents that sufficiently qualify as case recipients in Korean.

Per the initial introduction of SKLs in Chapter 2, prior literature has primarily been interested in 1) the syntactic category of SKLs, and 2) their interaction with light verbs. Many accounts that explicitly engage with the double case phenomenon are largely working within a Lexicalist perspective, and as such, there is not much prior work that offers extended argumentation in favor of or against the movement and control analyses sketched above. Most, building on Grimshaw & Mester (1988), simply take it as given that the double accusative construction is only possible with a light verb. One immediate concrete contribution of the present chapter, then, is to empirically demonstrate that this

is not true: non-light verbs are also possible. The double case variant can actually occur with non-light verbs, such as “begin” (17) and “finish” (18).

- (17) *ku salam-i tongkwul-ul thamkwu\*(-lul) kkuth.nay-ss-eyo*  
that person-NOM cave-ACC explore\*(-ACC) finish.CAUS-PST-DECL  
“That person finished exploring the cave.”
- (18) *ku salam-i tongkwul-ul thamkwu\*(-lul) sicak-ha-yss-eyo*  
that person-NOM cave-ACC explore\*(-ACC) begin-do-PST-DECL  
“That person began exploring the cave.”

Note the ungrammaticality of dropping ACC case from the SKL in (17–18), as confirmation that the Korean predicates “begin” and “finish” are never used as light verbs in the same way that *ha-* is (to create a complex predicate). These data points serve to point out that the double accusative case phenomenon cannot be attributed to a special property of *light* verbs, specifically.

In light of this fact, that the double case construction is not contingent on the presence of a light verb, it is more fruitful, rather than focusing only on the interaction between light verbs and SKLs, to actually widen the empirical domain of consideration to *other* instances of double case phenomena in Korean that do not involve SKLs, or light verbs: namely, external possession (see, e.g., Guéron 1985; Borer & Grodzinsky 1986; Yoon 1990; Landau 1999; Deal 2013, 2017). The choice between movement or control analyses for double case constructions closely parallels the debate on raising vs. control in the external possession literature, and as such, we can apply the diagnostics and discussions from the external possession literature to the SKL case constructions in order to empirically evaluate the strengths and weaknesses of each account. As

such, §4.2 introduces the phenomenon of external possession, and argues that external possession poses the same conceptual challenge to theories of argument structure that SKL double case variants do. §4.3 then demonstrates empirically that in Korean, both SKL double case constructions and external possession are sensitive to the same syntactic restrictions, and neither of them can be accounted for under either a movement or control analysis.

## § 4.2 The challenge of external possession

In external possession constructions, a phrase that is semantically associated with a possessee is realized external to the nominal headed by the possessee, and behaves like a syntactic argument of the matrix verb. External possession has been identified and explored in many languages, including French (Guéron 1985), Spanish (Kempchinsky 1992), Swahili (Keach & Rochemont 1992), Nez Perce (Deal 2013), and Hebrew (Borer & Grodzinsky 1986; Landau 1999), among others. Most relevant to the task at hand, external possession has also been identified in Korean, and analyzed by a number of researchers (Choe 1987; Cho 2000; Tomioka & Sim 2005; Ura 1996; J-M. Yoon 1997; J. H-S. Yoon 1990, 1991, 2015). A couple Korean examples are given in (19).

- (19) a. *nikho-ka hanyengi* -lul *phal* -ul *ttayli-ess-eyo*  
 Niko-NOM Hanyoung-ACC arm-ACC hit-PST-DECL  
 “Niko hit Hanyoung’s arm.”
- b. *acwumeni-ka ai* -lul *son* -ul *cap-ass-eyo*  
 older.woman-NOM child-ACC hand-ACC grab-PST-DECL  
 “The woman grabbed the child’s hand.”

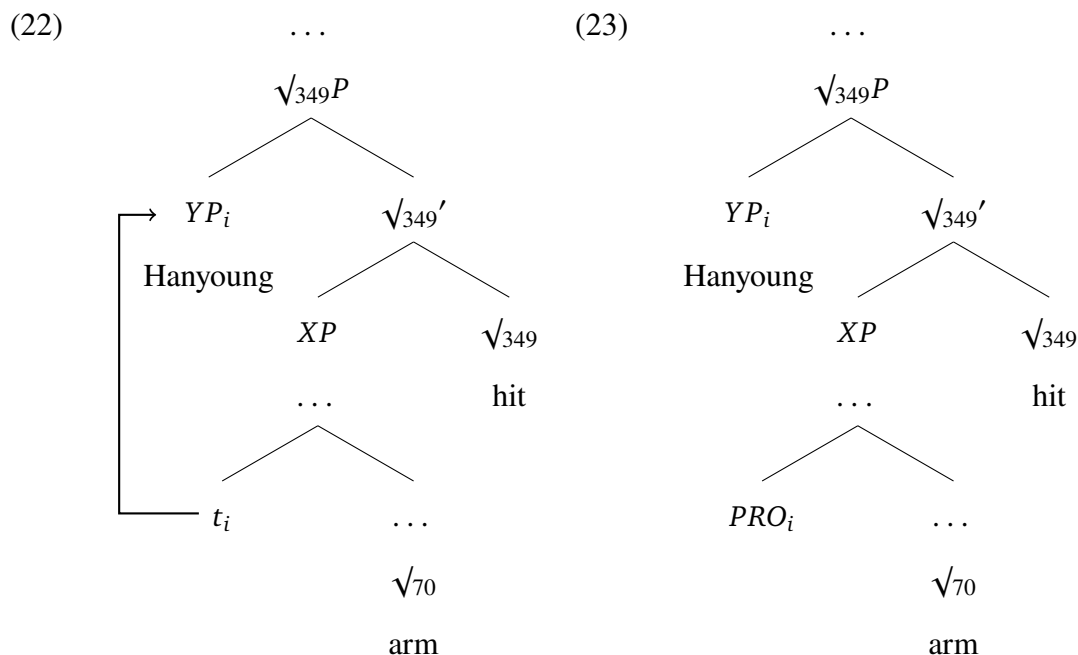
#### Chapter 4 *Beyond sisterhood, part 2: displacement*

Just as we saw for the SKL case-marked variants, the leftmost ACC-phrase can be proven to be clausemates with the matrix subject given sensitivity to Principle B (20), and can be targeted for A-bar operations (21), again suggesting that it is an argument sitting in the verbal domain, external to the constituent headed by the possessee.

- (20) *sekcini<sub>i</sub>-ka ku<sub>\*i/j</sub>-lul phal-ul chi-ess-eyo*  
 Seokjin<sub>i</sub>-NOM 3P.SG.<sub>\*i/j</sub>-ACC arm-ACC hit-PST-DECL  
 “Seokjin<sub>i</sub> hit his<sub>\*i/j</sub> arm.”

- (21) *ku ai<sub>i</sub>-cocha(-to) sekcini-ka \_\_\_<sub>i</sub> son-ul cap-ass-eyo*  
 that child<sub>i</sub>-even(-also) Seokjin-NOM \_\_\_<sub>i</sub> hand-ACC grabbed-PST-DECL  
 “Even that child, Seokjin grabbed (their) arm.”

In his analysis of external possession in Hebrew, Landau (1999) compares two major approaches to external possession: either 1) the possessor is taken to be an argument of the verb (receiving a thematic role from the verb, such as BENEFACTIVE, or AFFECTEE), in which case the possessor is base-generated externally and binds an anaphoric element within the possessee constituent (Guéron 1985; Borer & Grodzinsky 1986; Kempchinsky 1992); or 2) the possessor is taken to be an argument of the possessee, originating within the possessee constituent and raising to a position typically reserved for verbal arguments (Choe 1987; Landau 1999; Deal 2013). The latter constitutes a movement approach (22) to external possession, while the former constitutes a control approach (23). Just as in the broader literature on external possession, Korean-specific accounts also differ in either arguing for a possessor-raising approach (Choe 1987; Ura 1996; Cho 2000; Ko 2007), or a externally base-generated possessor approach (Kim 1989; Yoon 1990; Sim 2004; Tomioka & Sim 2005).



The Korean literature on external possession reports a tight restriction on the types of possessive relations that are allowed in the double accusative case configuration (Choe 1987; Tomioka & Sim 2005; Ura 1996; Yoon 1990): external possession is only possible given an inalienable possession relation. Alienable possession is impossible (24).

- (24) a. \* *nikho-ka hanyengi* -lul *cha* -ul *ttayli-ess-eyo*  
 Niko-NOM Hanyoung-ACC car-ACC hit-PST-DECL  
 Intended: “Niko hit Hanyoung’s car.”
- b. \* *acwumeni-ka ai* -lul *cangnankam* -ul *cap-ass-eyo*  
 older.woman-NOM child-ACC toy-ACC grab-PST-DECL  
 “The woman grabbed the child’s toy.”

This difference in acceptability of a given possessor-possessee pair correlates with a difference in whether genitive case is optional or obligatory on the possessor, when it

Chapter 4 *Beyond sisterhood, part 2: displacement*

surfaces internal to the constituent headed by the possessee. Inalienable possessors may surface either with or without genitive case (25), but alienable possessors must surface with an overt genitive marker (26).

- (25) a. *nikho-ka* [ *hanyengi(-uy)* *phal* ] -ul *ttayli-ess-eyo*  
 Niko-NOM [ Hanyoung(-GEN) arm ] -ACC hit-PST-DECL  
 “Niko hit Hanyoung’s arm.”
- b. *acwumeni-ka* [ *ai(-uy)* *son* ] -ul *cap-ass-eyo*  
 older.woman-NOM [ child(-GEN) hand ] -ACC grab-PST-DECL  
 “The woman grabbed the child’s hand.”
- (26) a. *nikho-ka* [ *hanyengi\*(-uy)* *cha* ] -ul *ttayli-ess-eyo*  
 Niko-NOM [ Hanyoung(-GEN) car ] -ACC hit-PST-DECL  
 “Niko hit Hanyoung’s car.”
- b. *acwumeni-ka* [ *ai\*(-uy)* *cangnankam* ] -ul *cap-ass-eyo*  
 older.woman-NOM [ child(-GEN) toy ] -ACC grab-PST-DECL  
 “The woman grabbed the child’s toy.”

In his argument against a control account of external possession, Landau (1999) notes that the possessor and the possessee must be clause-mates (Guéron 1985; Yoon 1990; Borer & Grodzinsky 1986), and in fact, that their locality profile is even more constrained than that: if the direct object is, for example, a complex DP, then the external possessor may only be associated with the matrix DP, not the embedded one (27).

- (27) a. *Gil ripe le-Rina et* [ *ha-gur* *šel ha-kalba* ]  
 Gil cured to-Rina ACC [<sub>DP</sub> the-puppy of the-dog ]  
 “Gil cured the dog’s puppy which belongs to Rina.”

## §4.2 The challenge of external possession

- b. *Gil ripe le-Rina et [ ha-ima šel ha-gur ]*  
 Gil cured to-Rina ACC [<sub>DP</sub> the-mother of the-puppy ]  
 “Gil cured the puppy’s mother which belongs to Rina.”

(Landau 1999: 9)

This makes the dependency one that is stricter than typically seen for standard control. PRO can be separated from its controller by a TP node, or more than one DP node, as shown in (28).

- (28) a. John<sub>i</sub> promised [<sub>TP</sub> PRO<sub>i</sub> to leave ]  
 b. John<sub>i</sub> has [<sub>DP</sub> a list of [<sub>DP</sub> books [<sub>TP</sub> PRO<sub>i</sub> to read ] ] ]

(adapted from Landau 1999: 12)

The second empirical issue with a control account of external possession has to do with thematic role assignment. In a control sentence like (28a), “John” is both a promiser and a leaver—the classic diagnostic for raising vs. control tracks the number of thematic roles that have been assigned. As Landau (1999) discusses, control accounts often posit that there is an independent “affectedness” thematic role that a verb assigns to the possessor. Landau (1999) argues that, not only is it extremely difficult to define what “affectedness” is as a thematic notion, it is not clear that all cases of external possession involve affectedness at all. For example, (29) does not involve direct “affectedness” of the possessor, and in fact describes a situation where the possessor is *not* affected.

- (29) *ha-sapar hiš’ir le-Rina et ha-tisroket kmo še-hi*  
 the-barber left to-Rina ACC the-hairstyle as that-it

“The barber left Rina’s hairstyle as it is.”

(Landau 1999: 28)

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Beyond issues with pinning down the exact nature of “affectedness”, the larger issue noted by Landau (1999) is that commitment to existence of such a thematic role asserts that the possessee is an argument of the verb, *not* of the possessee, and predicts no co-occurrence restrictions. But this is not empirically borne out: in Hebrew, the external possessor is always marked dative, and it can show up in sentences headed by verbs which canonically never select for a dative argument. The grammaticality of hosting the dative argument is contingent on its ability to be interpreted as the possessor of the accusative-marked argument in the sentence; in the absence of this possible interpretation, the sentence is strictly ungrammatical (30).

- (30) a. *Gil axal le-Rina \*(et ha-sendvich)*  
Gil ate to-Rina \*(ACC the-sandwich)  
“Gil ate Rina’s sandwich.”
- b. *Gil yašav le-Rina \*(ba-mitbax)*  
Gil sat to-Rina \*(in-the-kitchen)  
“Gil sat in Rina’s kitchen.” (Landau 1999: 24)

In short, the external possessor is *only* licensed in the presence of an overt possessee, and these verbs do not independently communicate any implicit semantics of an affectee in the absence of an overt possessor (31).

- (31) a. *Gil axal et ha-sendvich*  
Gil ate ACC the-sandwich  
“Gil ate the sandwich.”  
(no commitment to the sandwich belonging to anyone)

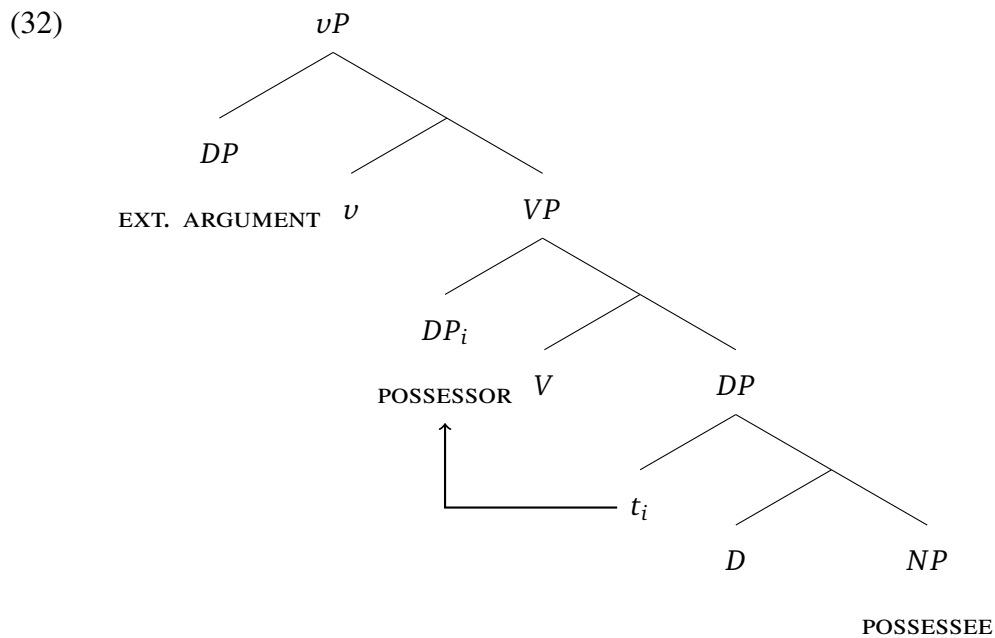
b. *Gil yašav ba-mitbax*

Gil sat in-the-kitchen

“Gil sat in the kitchen.”

(no commitment to the kitchen belonging to anyone)

Landau (1999)’s arguments in favor of a movement account come down to motivating possessor raising as an instance of A-movement, driven by a need to receive case. Landau (1999) argues that the possessor lands in the specifier of VP, as schematized in (32).



(adapted from Landau 1999: 10)

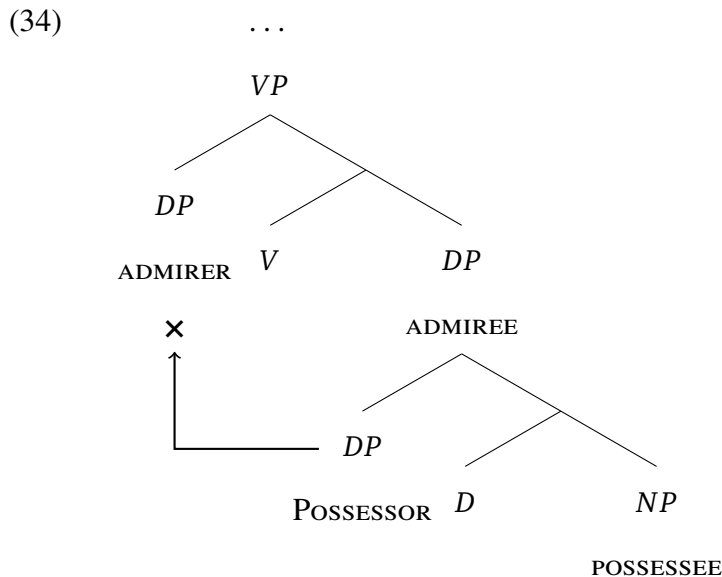
In empirical support of this claim, Landau (1999) observes that there are restrictions on the types of predicates that allow external possession: namely, external possession is disallowed with non-agentive transitive verbs (Landau 1999: 29, 31). Landau (1999) argues that this generalization is explainable under a perspective of argument structure

that ties the presence of an Agent-introducing head with the availability of an open landing site for the possessor to move into— in non-agentive verbs, such as stative verbs like “admire” (French example in 33), one possible structural proposal is that the grammatical subject originates in the specifier of VP, (not vP/VoiceP). As this is the position that Landau (1999) argues that the possessor lands in, having a DP base-generated there will block possessor raising to that position (34).

(33) \* *Je lui ai admiré le bras*

I him have admire the arm

Intended: “I admired his arm” (Landau 1999: 27; from Cheng & Ritter 1987)



Note, though, that the analysis of the ungrammaticality of external possession in cases like (33), as one where the verb lacks an available position for the possessor to land in, is not entirely consistent with Landau (1999)’s argument that a control account is nonviable due to the lack of a reliable external thematic role associated with the matrix verb. If external possession is not associated with a particular thematic position

in the verbal domain, it is unclear why having an overt argument occupying a particular thematic position should block the realization of the external possessor.

Taking a step out and returning to the puzzle of double case constructions in Korean, we can look for these same empirical signatures discussed by Landau (1999), to determine whether a control or movement account is viable: for a control account, we would expect a locality signature that mirrors that of standard control, and a reliably stable independent thematic role that the external ACC-marked phrase receives from the main predicate. For a movement account, we would want to look for, among other things, signs that movement into the VP is motivated by a need for case, and restrictions on which matrix predicates allow the double case construction to occur.

Both external possession and the SKL double case variants in Korean pose the same broad challenge to theories of argument structure: both types of constructions involve unexpected argument *displacement*. Why should an argument that we expect, for all intents and purposes, to be projected as a complement to its introducer, instead be realized external to the constituent headed by its introducing element? In the following section, we will analyze the syntactic properties of both types of argument displacement in Korean. I will ultimately argue that neither a control account nor a movement account can adequately capture the syntactic properties of Korean displaced argument constructions.

### § 4.3 Displaced arguments in Korean

This section presents empirical generalizations about the syntactic properties of argument displacement phenomena (SKL double case variants, and external possession)

in Korean. First, in §4.3.1, I demonstrate that a control-based analysis is empirically inadequate, per Landau (1999)’s diagnostics introduced above. Second, in §4.3.2 we will see that a movement-based analysis is *also* empirically inadequate for both types of argument displacements. I will argue that 1) the hypothesized trajectory of the displaced argument cannot be analyzed as case-motivated, despite surfacing in an A-position; 2) that the same predicate restrictions described by Landau (1999) actually make a case *against* a movement account, once the constructions with and without displacement are considered side by side; and 3) idioms which exist in the non-displaced construction lose their idiomatic reading in the displaced construction, and idioms that exist in the displaced construction lose their idiomatic reading in the non-displaced construction, neither of which are predicted under a movement hypothesis.

In §4.3.3, we arrive at an empirical picture that necessitates a base-generated, non-movement approach to argument displacement in Korean, but also crucially cannot be analyzed as control. In taking a first step forward down this path, I discuss restrictions on modification of the argument introducer (the SKL and the possessee, respectively) in both types of argument displacement constructions, and demonstrate that they have the same morpho-syntactic and semantic characteristics as pseudo-incorporees (which, per Chapter 3, are predicative  $\sqrt{P}$  constituents which modify an internal argument variable of the matrix predicate).

### **4.3.1 Against a control account**

Just as in the discussion of external possession in Hebrew and French (Guéron 1985; Borer & Grodzinsky 1986; Landau 1999), an “affectedness” notion has also been described for Korean external possession (Yoon 1990; Tomioka & Sim 2005), suggesting

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that there is an interpretation of the possessor being “directly affected” by the event denoted by the matrix predicate in the displaced construction (35a), which is lacking in the canonical, non-displaced construction (35b).

- (35) a. *tayhengi-ka jimini-lul meli-lul capa.tangki-ess-eyo*  
 Taehyung-NOM Jimin-ACC hair-ACC grab.pull-PST-DECL  
 “Taehyung yanked (at) Jimin’s hair.”  
 (pragmatic inference about Jimin being affected/impacted by the event)
- b. *tayhengi-ka jimini(-uy) meli-lul capa.tangki-ess-eyo*  
 Taehyung-NOM Jimin(-GEN) hair-ACC grab.pull-PST-DECL  
 “Taehyung yanked (at) Jimin’s hair.”  
 (neutral about Jimin’s affect/impact from the event)

This inference about impact/affectivity can be canceled, however, suggesting that it is a pragmatic implicature (36).

- (36) *tayhengi-ka jimini-lul meli-lul capa.tangki-ess-ciman jimini-ka*  
 Taehyung-NOM Jimin-ACC hair-ACC grab.pull-PST-but Jimin-NOM  
*ala.chali-ci mos-ha-yss-ta*  
 notice-NEG NEG-DO-PST-DECL  
 “Taehyung yanked (at) Jimin’s hair, but Jimin didn’t notice.”

Furthermore, contra to typical characterizations of benefactors or affectees, the external possession construction in Korean is not restricted to animate possessors. As Yoon (1990) points out, the correct cut for what types of possessor-possessee relations is one of part-whole semantics: inanimates can be grammatical displaced arguments, so long as they are the “whole” of a part-whole relation (37).

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- (37) a. *nay-ka uyca-lul tali-lul pwule.ttuli-ess-ta*  
1P.SG-NOM chair-ACC leg-ACC break.CAUS-PST-DECL  
“I broke the leg of the chair.”
- b. *cwunkwu-ka hoswu-lul swumyen-ul pala.po-ass-ta*  
Jungu-NOM lake-ACC surface-ACC gaze-PST-DECL  
“Jungu gazed (at) the surface of the lake.”
- c. *cengkwuki-ka namwu-lul kaci-lul chi-ess-ta*  
Jungkook-NOM tree-ACC branch-ACC trim-PST-DECL  
“Jungkook trimmed the branches of the tree.”

The part-whole relation must hold, hence why body part relations, i.e., inalienable possession (38), are allowed in the external possession construction, but alienable possession is not, even if the construction could plausibly describe an event where the possessor is adversely affected (39).

- (38) *nikho-ka tahwuni-lul tali-lul ttayli-ess-eyo*  
Niko-NOM Dahoon-ACC leg-ACC hit-PST-DECL  
“Niko hit Dahoon’s leg.”
- (39) \* *nikho-ka tahwuni-lul kapang-ul hwumchi-ess-eyo*  
Niko-NOM Dahoon-ACC bag-ACC steal-PST-DECL  
Intended: “Niko stole Dahoon’s bag.”

In Korean, the only possessor-possessee relations that allow the external possession configuration are truly restricted to part-whole relations, i.e. nouns that denote two-place predicates of individuals to a property of individuals (of semantic type  $\langle e, \langle e, t \rangle \rangle$ ) (Barker

& Dowty 1993; Boneh & Sichel 2010). The denotations of possessors that allow their possessors to be displaced are argument-introducing predicates: *son* (“hand”), *swumyen* (“surface”), and *kaci* (“branch”), for example, have the denotations in (40); the *y* variable corresponds to the “whole” argument, while the *x* variable corresponds to the “part”.

- (40) a.  $\llbracket son \rrbracket = \lambda y \lambda x. [hand'(y)(x)]$   
 b.  $\llbracket swumyen \rrbracket = \lambda y \lambda x. [surface'(y)(x)]$   
 c.  $\llbracket kaci \rrbracket = \lambda y \lambda x. [branch'(y)(x)]$

Turning to the SKL case-marked variants, it is even more difficult here to identify some unique thematic role of any kind for the displaced argument, nevermind one of “affectedness”, that would differentiate between non-displaced (41a, 42a) and displaced (41b, 42b) constructions. The “speed of light” reaches the same degree of completion with respect to being calculated by Einstein in both examples in (41), for example, and there is no indication that the speed of light was any more “affected” by this action in either construction.

- (41) a. *ainsyuthain-i pich-uy sokto(-uy) kyeysan* -ul *kkuth.nay-ss-eyo*  
 Einstein-NOM light-GEN speed(-GEN) calculate-ACC finish.CAUS-PST-DECL  
 “Einstein finished calculating the speed of light.”  
 b. *ainsyuthain-i pich-uy sokto* -lul *kyeysan* -ul *kkuth.nay-ss-eyo*  
 Einstein-NOM light-GEN speed-ACC calculate-ACC finish.CAUS-PST-DECL  
 “Einstein finished calculating the speed of light.”
- (42) a. *cikwen-i kongkum(-uy) hoynglyeng* -ul *kyeysok.ha-yss-eyo*  
 worker-NOM fund(-GEN) embezzle-ACC continue.do-PST-DECL  
 “The worker continued embezzling funds.”

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- b. *cikwen-i kongkum* -ul *hoynglyeng* -ul *kyeysok.ha-yss-eyo*  
 worker-NOM fund-ACC embezzle-ACC continue.do-PST-DECL

“The worker continued embezzling funds.”

Just as [Landau \(1999\)](#) points out for Hebrew external possession, a control account does not predict co-occurrence restrictions with respect to the two ACC-marked phrases in both SKL constructions and Korean external possession. It instead predicts that the presence of the leftmost ACC-marked phrase should be driven by the need of the matrix predicate to discharge more than one thematic role. However, the matrix predicates that work with external possession and SKL case-marked variants have transitive, not ditransitive, distributions. For example, the predicate *chi-* (“to strike”) does not easily license just any potential affectee: if its direct object is just a simple referential nominal phrase lacking part-whole semantics ([43](#)), a second ACC-marked phrase is disallowed.

- (43) *na-nun* (\**tayhyengi-lul*) *kong-ul chi-ess-ta*  
 1P.SG-TOP (\*Taehyung-ACC) ball-ACC strike-PST-DECL  
 “I hit (\*Taehyung) the ball”

Similarly, the predicate *khuth.nay-* (“to finish”) does not license a second ACC-marked phrase if its direct object is a simple event nominal like *yehayng* (“trip”) ([44](#)).

- (44) *na-nun* (\**hankwuk-ul*) *yehayng-ul khuth.nay-ss-eyo*  
 1P.SG-TOP (\*Korea-ACC) trip-ACC finish.CAUS-PST-DECL  
 “I finished my trip (\*to Korea).”

Here, we once again see that the grammatical licensing of a second ACC-marked phrase is contingent on the identity of the predicate adjacent ACC-marked phrase: this

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ACC-phrase must be headed by an argument-introducing predicate, like SKLs which denote two-place predicates of individuals to a property of events (of the semantic type  $\langle e, \langle s, t \rangle \rangle$ ). Restating denotations from Chapter 2, *kyeysan* (“calculate”), *hoynglyeng* (“embezzle”), and *thamkwu* (“explore”), have the denotations in (45); the  $x$  variable corresponds to the internal argument variable, while the  $e$  variable corresponds to the event argument.

- (45) a.  $\llbracket \textit{kyeysan} \rrbracket = \lambda x \lambda e. [\textit{calculate}'(x)(e)]$   
 b.  $\llbracket \textit{hoynglyeng} \rrbracket = \lambda x \lambda e. [\textit{embezzle}'(x)(e)]$   
 c.  $\llbracket \textit{thamkwu} \rrbracket = \lambda x \lambda e. [\textit{explore}'(x)(e)]$

Finally, in both types of argument displacement constructions in Korean, an overt applicative morpheme can be added to the verbal stem, coinciding with the addition of an overt BENEFICIARY argument (46–47).

- (46) *yenkwuwen-i tayhyengi-lul wuihay tongkwul-ul thamkwu-lul*  
 researcher-NOM Taehyung-ACC for cave-ACC explore-ACC  
*hay-cwu-ess-eyo*  
 do-APPL-PST-DECL  
 “The researcher explored the cave for Taehyung.”
- (47) *nikho-ka cwuhuy-lul wuihay hanyengi-lul son-ul capa-cwu-ess-eyo*  
 Niko-NOM Juhee-ACC for Hanyoung-ACC hand-ACC grab-APPL-PST-DECL  
 “Niko grabbed Hanyoung’s hand for Juhee.”

The easy addition of a benefactor to a construction that already has a displaced argument suggests that, whatever the correct characterization of this displaced argument is, it must be distinct from and licensed differently than an actual BENEFICIARY.

Both types of argument displacement paradigms in Korean (SKL double case variants and external possession) lack evidence for a unique external theta role tied exclusively to the verbal domain, as would be predicted by a control account. We further saw that the consistent semantic profile of the rightmost ACC-marked entity in grammatical double case constructions is that of an argument-introducing predicate, while the consistent semantic identity of the leftmost ACC-marked entity is that of the argument introduced by said predicate. Finally, we saw that the presence of a displaced argument in the structure does not interfere with the grammaticality of adding an applied argument.

### 4.3.2 Against a movement account

In this section I argue that, despite the evidence presented that the Korean argument displacement paradigms are *not* control constructions, a movement-based account inline with the Landau (1999) perspective is also empirically inadequate. I present three arguments against a movement analysis: 1) case-motivation, 2) matrix predicate restrictions, and 3) idiom interpretation in both displaced and non-displaced constructions.

First, despite confirmation that the surface position of a displaced argument is indeed an A-position— recall 1) sensitivity to Principle B (48), and 2) ability to be targeted for A-bar operations (49)— it is not possible to appeal to the typical characteristics of A-movement to explain the hypothesized trajectory of the displaced argument to this position (Choe 1987).

- (48) a. *cengkwuki<sub>i</sub>-ka ku<sub>\*i/j</sub>-lul cosa-lul ha-yss-eyo*  
 Jungkook<sub>i</sub>-NOM 3P.SG.<sub>\*i/j</sub>-ACC investigate-ACC do-PST-DECL  
 “Jungkook<sub>i</sub> investigated him<sub>\*i/j</sub>.”

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- b. *cengkwuki<sub>i</sub>-ka ku<sub>\*i/j</sub>-lul phal-ul chi-ess-eyo*  
 Jungkook<sub>i</sub>-NOM 3P.SG.<sub>\*i/j</sub>-ACC arm-ACC hit-PST-DECL  
 “Jungkook<sub>i</sub> hit his<sub>\*i/j</sub> arm.”
- (49) a. *ku cun<sub>g</sub>ke<sub>i</sub>-cocha(-to) cengkwuki-ka \_\_\_<sub>i</sub> cosa-lul*  
 that evidence<sub>i</sub>-even(-also) Jungkook-NOM \_\_\_<sub>i</sub> investigate-ACC  
*ha-yss-eyo*  
 do-PST-DECL  
 “Even that evidence, Jungkook investigated.”
- b. *ku ai<sub>i</sub>-cocha(-to) cengkwuki-ka \_\_\_<sub>i</sub> son-ul cap-ass-eyo*  
 that child<sub>i</sub>-even(-also) Jungkook-NOM \_\_\_<sub>i</sub> hand-ACC grabbed-PST-DECL  
 “Even that child, Jungkook grabbed (their) arm.”

For one, displacement is optional— there is always the “in-situ”, non-displaced alternative, as in (50). Further we can note that, in the non-displaced construction, the argument in question (*ai* in 50a; *cun<sub>g</sub>ke* in 50b), can be bare, or case-marked genitive.

- (50) a. *cengkwuki-ka ai(-uy) son-ul cap-ass-ta*  
 Jungkook-NOM child(-GEN) hand-ACC grab-PST-DECL  
 “Jungkook grabbed the child’s hand.”
- b. *cengkwuki-ka cun<sub>g</sub>ke(-uy) cosa-lul kkuth.nay-ess-ta*  
 Jungkook-NOM evidence(-GEN) investigate-ACC finish.CAUS-PST-DECL  
 “Jungkook finished the evidence investigation.”

As discussed previously, the A-position that the argument surfaces in, in the displaced constructions, is not a position that is just generally available for the predicates that allow

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displacement to occur (there are co-occurrence restrictions: the matrix predicate is not the sole determinant of whether or not argument displacement occurs). If we were to propose a movement account for Korean argument displacement, we would have to posit an operation of A-movement that is fully optional, not case-motivated, and an instance of adjunction of some kind, such that it merges the displaced argument into a position at the top of the VP. We would not be able to posit any sort of EPP feature, or indeed attribute any sort of unvalued feature to the matrix predicate itself to trigger raising, since the displacement is not solely driven by the choice of main predicate.

A second argument against a movement account comes from a closer investigation of the restrictions that are in place for the matrix predicates themselves. We saw previously in §4.3.1 that beneficiary arguments can be added to a structure with no issue, contra to Landau (1999)’s claims about the interaction between displacement and the position of a non-agentive external argument. However, this is not to say that the predicate restriction observed in the literature on external possession does not hold in Korean— while the choice of main predicate alone cannot predict the grammaticality of displacement, Korean external possession does indeed exhibit the same ungrammaticality when the matrix predicate is stative (51). SKL case-marked variants exhibit the same (52).

- (51) \* *nikho-ka hanyengi-lul phal-ul salang-ha-nta*

Niko-NOM Hanyoung-ACC arm-ACC love-do-PRS.DECL

Intended: “Niko loves Hanyoung’s arm.”

- (52) \* *yenkwuwen-i tongkwul-ul thamkwu-lul salang-ha-nta*

researcher-NOM cave-ACC explore-ACC love-do-PRS.DECL

Intended: “The researcher loves exploring caves.”

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The same predicate *salang-ha-*, however, can license a non-displaced construction, for both SKLs and part-whole nominals (53–54).

- (53) *nikho-ka hanyengi(-uy) phal-ul salang-ha-nta*  
 Niko-NOM Hanyoung(-GEN) arm-ACC love-do-PRS.DECL  
 “Niko loves Hanyoung’s arm.”
- (54) *yenkwuwen-i tongkwul(-uy) thamkwu-lul salang-ha-nta*  
 researcher-NOM cave(-GEN) explore-ACC love-do-PRS.DECL  
 “The researcher loves exploring caves.”

Landau (1999) generalizes the predicate restriction for external possession to the structural presence of an Agent-introducing head. Specifically, he suggests that the presence of the agent-introducing head correlates with an extra position in the verbal domain, to which the possessor can move to. However, at least in Korean, displaced arguments are allowed with unaccusative predicates, as well (55).

- (55) a. *namwu-ka kaci-ka pwule.ci-ess-eyo*  
 tree-NOM branch-NOM break.INCH-PST-DECL  
 “The tree branch broke.”
- b. *tongkwul-i thamkwu-ka sicak-twoy-ess-eyo*  
 cave-NOM explore-NOM begin-become-PST-DECL  
 “The cave exploration began.”

Both of the above matrix predicates, (“break (intr.)”) and (“begin (intr.)”) can be independently showed to be structurally unaccusative. For example, they are unable to license an implicit external argument (56).

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- (56) a. \* [ *ton-ul et-ulye(.ko)* ] *namwu-ka kaci-ka*

[ money-ACC gain-in.order.to ] tree-NOM branch-NOM

*pwule.ci-ess-eyo*

break.INCH-PST-DECL

Intended: “The tree branch was broken (by someone) (in order to gain money).”

- b. \* [ *ton-ul et-ulye(.ko)* ] *tongkwul-i thamkwu-ka*

[ money-ACC gain-in.order.to ] cave-NOM explore-NOM

*sicak-twoy-ess-eyo*

begin-become-PST-DECL

Intended: “The cave exploration was begun (by someone) (in order to gain money).”

In Korean, then, the correct generalization about which predicates allow argument displacement is about internal argumenthood—the matrix predicate must itself be one that introduces an internal argument. The distribution of grammatical argument displacement in Korean then, can be stated cleanly in terms of the *interaction* between two argument-introducing predicates: the matrix predicate must be an argument-introducing predicate, and the rightmost ACC-phrase must also be a (non-verbal) argument-introducing predicate (SKLs, or part-whole nominals).

In further support of this characterization, we can take a closer look at the matrix predicates that work best with each type of argument displacement in Korean. For external possession, the matrix predicates which receive the best judgments are consistently ones which very clearly introduce an internal argument that must be an individual

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(semantic type *e*). For example, “hit”, “cut”, “grab”, “break”, “make dirty” (57); all of these events must have IAs that are unambiguously individuals, due to each of these predicates describing very physical events, which necessarily must have a recipient of the action. Unaccusative versions of each of these predicates are all possible, as well.

- (57) a. *nikho-ka hanyengi-lul phal-ul kapcaki ttayli-ess-eyo*  
 Niko-NOM Hanyoung-ACC arm-ACC suddenly hit-PST-DECL  
 “Niko suddenly hit Hanyoung’s arm.”
- b. *ywunki-ka hosek-ul meli-lul cosim.sulep.key calla-ss-eyo*  
 Yoongi-NOM Hoseok-ACC hair-ACC carefully cut-PST-DECL  
 “Yoongi carefully cut Hoseok’s hair.”
- c. *cengkwuki-ka namwu-lul kaci-lul nuli.key cap-ass-eyo*  
 Jungkook-NOM tree-ACC branch-ACC slowly grab-PST-DECL  
 “Jungkook slowly grabbed the branch of the tree.”
- d. *tahwuni-ka uyca-lul tali-lul wuyen.hi pwule.ttuli-ess-eyo*  
 Dahoon-NOM chair-ACC leg-ACC accidentally break.CAUS-PST-DECL  
 “Dahoon accidentally broke the leg of the chair.”
- e. *cwunkwu-ka hoswu-lul swumyen-ul sayngkak eps.i*  
 Jungu-NOM lake-ACC surface-ACC thought without  
*telep.hi-ess-eyo*  
 dirty.CAUS-PST-DECL  
 “Jungu thoughtlessly dirtied the surface of the lake.”

Similarly, the predicates that work best for the SKL case-marked variants are ones which introduce an internal argument that must be an event (semantic type *s*). For

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example, “begin”, “finish”, “continue”, “request”, “disallow”, and “permit”, all allow the displaced construction (58). Unaccusative counterparts for each of these are all possible, as well.

- (58) a. *wuli-ka censihwoy-lul cwunpi-lul tutie sicak-ha-yss-ta*  
1p.pl-NOM exhibition-ACC prepare-ACC finally begin-do-PST-DECL  
“We finally began the preparations for/of the exhibition.”
- b. *yenkwuwen-i tongkwul-ul thamkwu-lul kkuth.nay-ss-ta*  
researcher-NOM cave-ACC explore-ACC finish.CAUS-PST-DECL  
“The researcher finished exploring the cave.”
- c. *hankwuk cengpwu-ka paykshin-ul paypwu-lul nuli-key*  
Korea government-NOM vaccine-ACC distribute-ACC slow-ADV  
*kyeysok-ha-yss-ta*  
continue-do-PST-DECL  
“The Korean government slowly continued distribution of vaccines.”
- d. *nwukwunka censihwoy-lul cwunpi-lul pwuthak-ha-yss-ta*  
someone.NOM exhibition-ACC prepare-ACC request-do-PST-DECL  
“Someone requested preparations for/of the exhibition”
- e. *ku hwoysa-ka kongkum-ul hoynglyeng-ul hwaksil.hi*  
that company-NOM public.funds-ACC embezzle-ACC definitely  
*kumci-ha-nta*  
prohibit-do-PRS.DECL  
“That company definitely prohibits the embezzlement of public funds.”

- f. *ku salam-i tongkwul-ul thamkwu-lul kwantayha.key*  
 that person-NOM cave-ACC explore-ACC generously  
*helak-ha-yss-ta*  
 permit-do-PST-DECL

“That person generously permitted exploration of the cave.”

Importantly, in the interpretations of (58d–f), what is “requested”, “forbidden”, or “permitted” is the event denoted by the SKL itself—these sentences cannot receive an interpretation where the requester/forbidder/permitter is requesting/forbidding/permitting someone else to do/not do something. In short, we only get interpretations in (58) where the matrix predicate’s IA is an event, *not* a proposition.

The emerging generalization about the distribution of grammatical argument displacement in Korean is that the phenomena is licensed given an interaction between two argument-introducing predicates. If the Root of the matrix predicate is an argument introducer, and the Root of the rightmost ACC-marked phrase is an argument introducer, then the IA of the latter predicate may be realized in the displaced position. But if either one of these is not an argument introducer, then displacement is not possible.

Under this view, the ungrammaticality of stative predicates comes from an underlying difference in the AS of statives vs. non-statives, such that the Root of a stative matrix predicate is not the introducer of an internal argument. For *salang-ha-* (“to love”), this is borne out—despite *salang* being etymologically Sino-Korean, it does not license an AS-Nominal (59). The nominal in (59) can only refer statically to Jungu’s love of photography, not an active state of “loving photography” that Jungu is an experiencer/holder of. This suggests that *salang* is indeed not an argument-introducing Root.

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- (59) *cwunku-uy sacin-uy salang*  
Jungu-GEN photo-GEN love  
“Jungu’s love of photos/photography”

One final argument against a movement account of Korean displaced argument constructions comes from idioms. Tomioka & Sim (2005) observe that some Korean idioms utilize the displaced construction, and their meanings are not maintained in the non-displaced alternative. For example, the idiom *son-ul po-ta*, meaning “(lit.) to see the hand; (idiom) to deal with”, has its idiomatic reading in (60a), but not in (60b).

- (60) a. *chelswu-ka senhuy-lul son-ul po-ass-eyo*  
Chelswu-NOM Sunhee-ACC hand-ACC see-PST-DECL  
**Literal:** “Chelswu saw Sunhee’s hand.”  
**Idiomatic:** “Chelswu dealt with (punished) Sunhee.”
- b. *chelswu-ka senhuy son-ul po-ass-eyo*  
Chelswu-NOM Sunhee hand-ACC see-PST-DECL  
**Literal:** “Chelswu saw Sunhee’s hand.”  
**\*Idiomatic (not possible):** “Chelswu dealt with (punished) Sunhee.”

Work on idioms often utilizes movement data, evaluating whether an idiomatic reading survives under movement in order to distinguish, for example, between raising and control. The reverse concept, however, where an idiom is *created* through movement, is unattested. Furthermore, there are also idioms that exist in the non-displaced construction, which lose their meaning in the displaced variant. Consider (61), for example. The SKL *sanyang* (“hunting”), when used with the IA *manye* (“witch”), has the idiomatic

reading of “a witch-hunt”. The SKL *sanyang* has productive non-idiomatic uses as well, and can easily occur with other IAs besides *manye* (62).

- (61) *manye sanyang-ul sicak-ha-yss-ta*  
 witch hunt-ACC begin-do-PST-DECL  
 “(Someone) began a witch-hunt.”
- (62) *ku salam-i sasum-ul sanyang-ha-yss-eyo*  
 that person-NOM deer-ACC hunting-do-PST-DECL  
 “That person hunted a deer.”

In the non-displaced construction, both literal and idiomatic readings are possible (63a), but in the double case variant, only the literal reading is possible (63b).

- (63) a. *ku salam-i manye sanyang-ul ha-yss-ta*  
 that person-NOM witch hunt-ACC do-PST-DECL  
**Literal:** “That person hunted a witch.”  
**Idiomatic:** “That person conducted a witch-hunt.”
- b. *ku salam-i manye-lul sanyang-ul ha-yss-ta*  
 that person-NOM witch-ACC hunt-ACC do-PST-DECL  
**Literal:** “That person hunted a witch.”  
**\*Idiomatic (not possible):** “That person conducted a witch-hunt.”

The loss of the idiomatic interpretation in (63b) tells us that the displaced construction cannot be created through raising— but this is exactly the type of movement that we would have to posit, if we were to adopt the A-movement account of Landau (1999).

In sum, a movement account is untenable for Korean argument displacement constructions. Not only do we lack evidence that the hypothesized movement operation is

case-driven, we also saw that the predicate restrictions of displaced constructions are better accounted for as an interaction of two argument-introducing predicates, rather than under an account where certain types of matrix predicates (non-agentive ones) block movement to a matrix argument position (cf. Landau 1999). Finally, idiom data demonstrated that both the displaced and non-displaced constructions have attested idioms that exist only in one structure and not the other—a raising account would predict that idiomatic interpretations should hold across both variants.

### 4.3.3 Evidence of incorporation

In this section, I argue, as a first step toward the formal analysis in §4.4, that the rightmost ACC-phrase in both external possession and SKL double case constructions has the syntactic and semantic status of a  $\sqrt{P}$ -sized incorporee. Despite being case-marked, they lack nominal functional structure, and they also take obligatory narrow scope with respect to existential closure.

Looking first at external possession constructions, we see that modification of the rightmost ACC-phrase is extremely restricted (64). Adjectival modification, crucially, is disallowed.

- (64) a. \* *nikho-ka hanyengi* -lul *kangha-n phal* -ul *ttayli-ess-eyo*

Niko-NOM Hanyoung-ACC strong-ADJ arm-ACC hit-PST-DECL

Intended: “Niko hit Hanyoung’s strong arm.”

- b. \* *acwumeni-ka ai* -lul *cak-un son* -ul *cap-ass-eyo*

older.woman-NOM child-ACC small-ADJ hand-ACC grab-PST-DECL

Intended: “The woman grabbed the child’s small hand.”

These same modifiers are grammatical in the non-displaced construction (65).

- (65) a. *nikho-ka [ hanyengi-uy kangha-n phal ] -ul ttayli-ess-eyo*  
 Niko-NOM [ Hanyoung-GEN strong-ADJ arm ] -ACC hit-PST-DECL  
 “Niko hit Hanyoung’s strong arm.”
- b. *acwumeni-ka [ ai-uy cak-un son ] -ul cap-ass-eyo*  
 older.woman-NOM [ child-GEN small-ADJ hand ] -ACC grab-PST-DECL  
 “The woman grabbed the child’s small hand.”

Yoon (1990) suggests that grammatical modification of the second ACC-phrase in these constructions is contingent on restrictive vs. non-restrictive modification; however, this cannot be quite right, because attested modifiers, e.g. “left” and “new” (66), which can modify the second ACC-phrase, are certainly restrictive, serving to narrow down the possible set of *x* such that *x* is an arm, in both examples below.

- (66) a. *nikho-ka hanyengi-lul oyn phal-ul ttayli-ess-eyo*  
 Niko-NOM Hanyoung-ACC left arm-ACC hit-PST-DECL  
 “Niko hit Hanyoung’s left arm.”
- b. *uysa-ka hwanca-lul say phal-ul pwuthi-ess-eyo*  
 doctor-NOM patient-ACC new arm-ACC attach-PST-DECL  
 “The doctor attached the patient’s new arm.” (prosthetic arm context)

The actual cut that differentiates between acceptable and unacceptable modification is the syntactic status of the modifier— all of the modifiers in (64) are overtly marked as adnominal/adjectival phrases, and as such can only be used as modifiers within the syntactic nominal domain. In contrast, the data in (66) make use of the handful of true

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attributive modifiers in Korean, which are 1) always morphologically simplex, and 2) are distributionally much more local entities to the items they modify than their overtly marked counterparts (Kang 2005; Kim 2019). In the expanded nominal domain of Korean, items are strictly ordered: modifiers with overt derivational morphology are the furthest away from the head of the constituent, while bare attributive modifiers are the closest possible element to the head (sans an IA, if one is available) (67).

- (67) *choykun-ey sa-n ku twu say cha*  
recently-LOC bought-ADJ that two new car  
“Those two new cars that (I) bought recently”

In other words, modifiers are allowed for the second ACC-phrase of displaced argument as long as they are not *nominal* modifiers. This ACC-phrase is deficient: it does not pass diagnostics for nominal functional structure. The exact same restriction is found for SKL case-marked variants: in the displaced constructions the case-marked SKL fails diagnostics for nominal functional structure (68).

- (68) a. \* *cikwen-i kongkum-ul cac-un hoynglyeng-ul ha-yss-eyo*  
worker-NOM fund-ACC frequent-ADJ embezzle-ACC do-PST-DECL  
Intended: “The worker did frequent embezzling (of) the funds.”  
b. \* *yenkwuwen-i tongkwul-ul kkunhimeps-nun thamkwu-lul ha-yss-eyo*  
researcher-NOM cave-ACC constant-ADJ explore-ACC do-PST-DECL  
Intended: “The researcher did tireless/continuous exploring (of) the cave.”

Yet, these same modifiers are grammatical in the non-displaced construction (69).

### §4.3 Displaced arguments in Korean

- (69) a. *cikwen-i [kongkum-uy cac-un hoynglyeng]-ul ha-yss-eyo*  
 worker-NOM [fund-GEN frequent-ADJ embezzle]-ACC do-PST-DECL  
 “The worker did frequent embezzlement of the funds.”
- b. *yenkwuwen-i [tongkwul-uy kkunhimeps-nun thamkwu]-lul ha-yss-eyo*  
 researcher-NOM [cave-GEN constant-ADJ explore]-ACC do-PST-DCL  
 “The researcher did tireless/continuous exploration of the cave.”

Only bare modifiers are possible in the displaced variant, such as compounds (70).

- (70) *mikwun-i tosi-lul hangkong phokkyek-ul ha-yss-eyo*  
 American.military-NOM city-ACC aviatory bombardment-ACC do-PST-DECL  
 “The American military did (an) airstrike bombardment of the city.”

In addition to lacking nominal functional structure, the rightmost ACC-phrases in displaced constructions are also not targetable for A-bar operations, which is surprising if we were to believe them to be DP arguments. They cannot be topicalized or relativized (71–72), in contrast with the leftmost ACC-phrases (the displaced arguments themselves), which can (73–74) (Kim 1994; Choe 1987; Yoon 1990).

- (71) a. \**(ku) son<sub>i</sub>-cocha(-to) hoseki-ka ai-lul \_i cap-ass-eyo*  
 (that) hand<sub>i</sub>-even(-also) Hoseok-NOM child-ACC \_i grab-PST-DECL  
 Intended: “Even (that) hand, Hoseok grabbed \_ of the child.”
- b. \**(ku) cosa<sub>i</sub>-cocha(-to) hoseki-ka cungke-lul \_i ha-yss-eyo*  
 (that) investigate<sub>i</sub>-even(-also) Hoseok-NOM evidence-ACC \_i do-PST-DECL  
 Intended: “Even (that) investigating, Hoseok did \_ to the evidence.”

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- (72) a. \* [ *hoseki-ka ai-lul* <sub>-i</sub> *cap-un* ] *son<sub>i</sub>*  
Hoseok-NOM child-ACC <sub>-i</sub> grab-PST.REL hand<sub>i</sub>  
Intended: “the hand that Hoseok grabbed <sub>-</sub> of the child”
- b. \* [ *hoseki-ka cungke-lul* <sub>-i</sub> *ha-n* ] *cosa<sub>i</sub>*  
Hoseok-NOM evidence-ACC <sub>-i</sub> do-PST.REL investigate<sub>i</sub>  
Intended: “the investigation that Hoseok did <sub>-</sub> to the evidence”
- (73) a. *ku ai<sub>i</sub>-cocha(-to) hoseki-ka* <sub>-i</sub> *son-ul cap-ass-eyo*  
that child<sub>i</sub>-even(-also) Hoseok-NOM <sub>-i</sub> hand-ACC grab-PST-DECL  
“Even that child, Hoseok grabbed (their) arm.”
- b. *ku cungke<sub>i</sub>-cocha(-to) hoseki-ka* <sub>-i</sub> *cosa-lul ha-yss-eyo*  
that evidence<sub>i</sub>-even(-also) Hoseok-NOM <sub>-i</sub> investigate-ACC do-PST-DECL  
“Even that evidence, Hoseok investigated <sub>-</sub>.”
- (74) a. [ *hoseki-ka* <sub>-i</sub> *son-ul cap-un* ] *ai<sub>i</sub>*  
Hoseok-NOM <sub>-i</sub> hand-ACC grab-PST.REL child<sub>i</sub>  
“the child whose hand Hoseok grabbed <sub>-</sub>”
- b. [ *hoseki-ka* <sub>-i</sub> *cosa-lul ha-n* ] *cungke<sub>i</sub>*  
Hoseok-NOM <sub>-i</sub> investigate-ACC do-PST.REL evidence<sub>i</sub>  
“the evidence that Hoseok did an investigation of <sub>-</sub>”

Finally, note that the rightmost ACC-phrases take obligatorily narrow scope with respect to negation. The sentence in (75) asserts that it is not the case that a researcher did an exploration of a cave; it cannot assert that there is some specific event of exploring a cave which occurred, that some researcher did not do (but perhaps other researchers did). In other words, (75) is not compatible with a scenario in which one— but not

### §4.3 Displaced arguments in Korean

all— possible explorations of caves occurred. It is only compatible with a scenario in which no explorations of caves occurred.

- (75)    *yenkwuwen-i    tongkwul-ul thamkwu-lul kkuth.nay-ci anh-ass-ta*  
 researcher-NOM cave-ACC    explore-ACC finish-NEG    be.not-PST-DECL  
 “The researcher did not finish exploring the cave.”  
 i. “it is not the case that the researcher finished exploring  
 a (certain) cave.”  $\neg > \exists$   
 ii. # “There is some exploring event of a (certain) cave  
 which the researcher did not finish.”  $*\exists > \neg$

Likewise, the sentence in (76) asserts that it is not the case that a woman grabbed a child’s hand; it is ambiguous between whether there is a specific child or not, depending on the specificity/definiteness of the leftmost ACC-phrase, but (76) cannot assert that there is some specific hand (belonging to a child) which some woman did not grab. In other words, (76) is not compatible with a scenario where the woman grabbed one of two possible hands of the child. It is only compatible with a scenario in which no hands were grabbed.

- (76)    *acwumeni-ka ai-lul    son-ul    cap-ci    anh-ass-ta*  
 woman-NOM child-ACC hand-ACC grab-NEG be.not-PST-DECL  
 “The woman did not grab the child’s hand.”  
 i. “it is not the case that the woman grabbed a hand of  
 a (certain) child.”  $\neg > \exists$   
 ii. # “There is some hand of a (certain) child  
 which the woman did not grab.”  $*\exists > \neg$

In short, despite having ACC case marking, this rightmost ACC-phrase in Korean displaced argument constructions has characteristics that align directly with pseudo-incorporated entities: it has a deficient/non-existent nominal functional domain, cannot be targeted for extraction, and exhibits obligatory narrow scope [Borik & Gehrke \(2015\)](#); [Chung & Ladusaw \(2021\)](#); [Massam \(2001\)](#); [van Geenhoven \(1998\)](#). As such, it is best analyzed as a predicative  $\sqrt{P}$ , which composes with the matrix predicate via Predicate Modification. In the following section, §4.4, I outline a formal semantic analysis and corresponding syntactic structural proposal, which captures displaced argument constructions in Korean as a by-product of the pseudo-incorporation of an argument-introducing predicate, drawing upon the analysis of incorporation developed in Chapter 3 of this dissertation. Section §4.5 will tackle questions of case assignment.

## **§ 4.4 Argument position is predicted by LF**

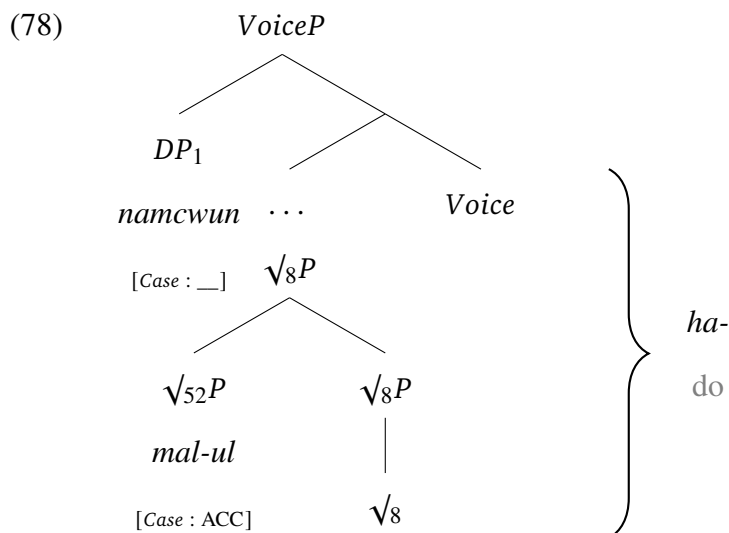
In this section, I outline my analysis of argument displacement phenomena in Korean. Drawing on the syntax-semantics account of incorporation in Chapter 3, I analyze the right-most ACC-phrases in displacement constructions as  $\sqrt{P}$ s, which compose as predicative modifiers of the matrix predicate's internal argument, the same as other incorporees do. However, because the  $\sqrt{P}$  modifiers in question are two-place predicates (argument-introducing predicates), their LF composition proceeds via Variable Identification (cf. [Kratzer 1996](#); [Higginbotham 1985](#); [Yoon 1990](#)). Because the  $\sqrt{P}$  modifiers are *not* the first merged entities of the derivation, their sister position is unavailable, and so their argument must be syntactically realized as a specifier, hence the surface phenomenon of argument “displacement”.

#### §4.4 Argument position is predicted by LF

Recall that Chapter 3 closed out with discussion of the sentence in (77), where a semantic incorporee *mal* appeared with accusative case, rather than morphologically composing with the predicate *ha-*.

- (77) *namcwuni-ka mwuncang-ul mal-ul ha-yss-ta*  
 Namjoon-NOM sentence-ACC word-ACC do-PST-DECL  
 “Namjoon said the sentence.”

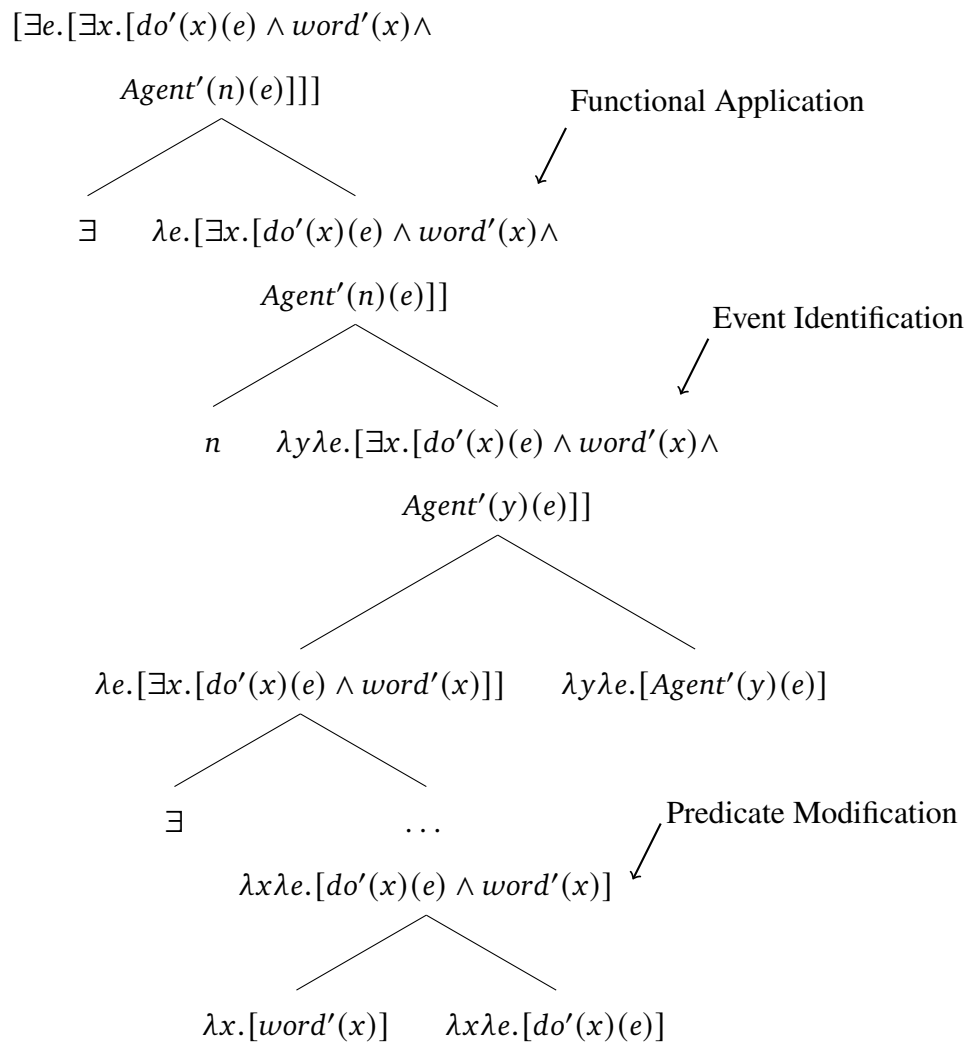
The syntactic structure for (77) is given again in (78)— here, case-marked *mal* is a phrasal incorporee, namely, a  $\sqrt{P}$ , which receives downward dependent case within the VoiceP (under Jou 2024’s algorithm for Korean case assignment). I omit the classificatory modifier from the structure for simplicity— it would be adjoined to the structure at the location of the ellipses.



The structure in (78) was argued to have the LF in (79), again leaving out the classificatory modifier for simplicity. The  $\sqrt{P}$  *mal* denotes a predicate  $\lambda x_e.[word'(x)]$  which composes with matrix predicate  $\lambda x_e \lambda e_s[do'(x)(e)]$  via Predicate Modification;

then, after, existential closure of the internal argument variable  $x$ , the Voice head, which denotes a predicate  $\lambda y_e \lambda e_s. [Agent'(y)(e)]$  composes via Event Identification. The external argument composes via Function Application, before finally the event variable is existentially closed.

(79) LF composition corresponding to (78):



In Section §4.3.2, in describing the predicate restrictions observed for double ac-

#### §4.4 Argument position is predicted by LF

cusative case phenomena, I argued that the distribution of grammatical argument displacement in Korean should be stated in terms of the interaction between two argument-introducing predicates: the matrix predicate, and the rightmost ACC-phrase. Let us start with an example of the SKL *thamkwu*, walking through a derivation of the predicate structure of the following sentence (80).

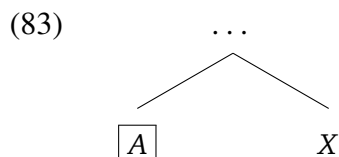
- (80)    *yenkwuwen-i tongkwul-ul thamkwu-lul kkuth.nay-ss-ta*  
          researcher-NOM cave-ACC    explore-ACC finish.CAUS-PST-DECL  
          “The researcher finished exploring the cave.”

We start with two argument introducing predicates  $X$  and  $Y$ . Take  $X$  to be the predicate denoted by *kkuth.nay-* (“finish”), given in (81), where the variable  $e_1$  represents the finishing event, and the variable  $e_2$  is the internal argument variable of “finish”, which must be a  $s$  type entity per Section §4.3.2. Take  $Y$  to be the predicate denoted by *thamkwu* (“explore”), given in (82), where the variable  $e_2$  represents the event argument of exploring, and  $x$  is the internal argument variable.

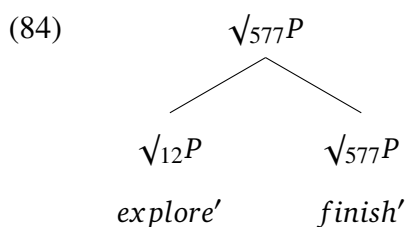
$$(81) \quad \llbracket kkuth.nay- \rrbracket = \lambda e_{2s} \lambda e_{1s}. [finish'(e_2)(e_1)]$$

$$(82) \quad \llbracket thamkwu \rrbracket = \lambda x_e \lambda e_{2s}. [explore'(x)(e_2)]$$

If an argument-introducing predicate  $X$  is the first merged entity in the syntactic derivation (83), its argument  $A$  will be realized as sister to  $X$ , the closest possible syntactic relationship between any two nodes.



The predicate for “finish” (18), starts the structure. It has an internal argument, and as such this variable must be dealt with next in the LF composition. Per Chapter 3, we have two options: direct saturation with an semantic entity of type  $e$ , which will correspond to the introduction of a DP in the syntax, or predicate modification of  $x$ , for which the modifier will be realized as a  $\sqrt{P}$  in the syntax. If we assume Bare Phrase Structure (Chomsky 1995), this will still be a syntactic relationship of sisterhood (84).



In the corresponding LF for (84), I propose that the two two-place predicates must compose via Identification—in the exact same way that Voice composes with the lexical predicate via Event Identification, except that the variable being identified over is the internal argument variable of the matrix predicate “finish”. I define below a more general definition of Identification that is compatible with this proposed composition (85). I see Variable Identification as a sub-type of my updated version of Predicate Modification from Chapter 3, occurring when the modifier is a two-place predicate.

(85) **Variable Identification (generalized):**

Given a function  $f$  and a function  $g$ , where:

- a.  $f$  is a two-place predicate  $\lambda\alpha\lambda\beta.[P(\alpha)(\beta)]$ ,
- b.  $g$  is a two-place predicate  $\lambda\gamma\lambda\alpha.[Q(\gamma)(\alpha)]$ , and
- c. the outermost  $\lambda$ -bound variable of  $f$  matches in semantic type to the innermost  $\lambda$ -bound variable of  $g$ :

Modifying  $f$  with  $g$  yields:

$$P.M_{\text{IDENT}}(f, g) \equiv \lambda\gamma\lambda\alpha\lambda\beta.[P(\alpha)(\beta) \wedge Q(\gamma)(\alpha)]$$

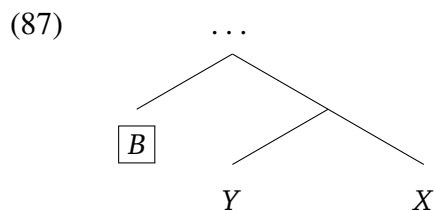
In (84), the predicate  $explore'$  modifies the predicate  $finish'$ . Per (85), the LF composition will be as follows:

(86) First step of LF composition for (80):

$$\lambda x\lambda e_2\lambda e_1.[finish'(e_2)(e_1) \wedge explore'(x)(e_2)] \longleftarrow \text{Identification}$$

$$\lambda x\lambda e_2.[explore'(x)(e_2)] \quad \lambda e_2\lambda e_1.[finish'(e_2)(e_1)]$$

If an argument-introducing predicate  $Y$  is *not* the first merged entity in the syntactic derivation, its argument  $B$  must be realized as a specifier, maintaining strictest possible locality given that the sister position is unavailable. In (87), for example,  $Y$ 's sister position is already occupied by  $X$ , and as such its argument  $B$  is realized as a specifier.

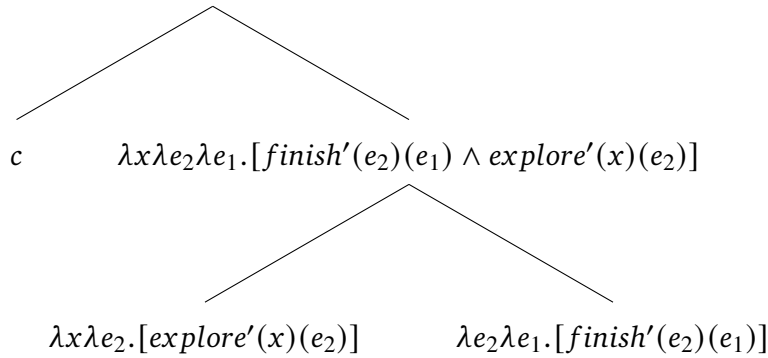


This, I argue, is precisely what happens for the argument of  $explore'$ . Once this predicate has merged as a modifier of the internal argument variable of matrix predicate  $finish'$ , its own argument, represented by the variable  $x$  in (86), is the outermost  $\lambda$ -bound variable of the lambda prefix and so must be handled next by the composition, either via direct or indirect saturation. The composition in (88) demonstrates the IA of

*explore'* composing via Function Application, which will correspond to the generation of a DP in a specifier position of the structure (represented as a constant *c*).

(88) Second step of LF composition for (80):

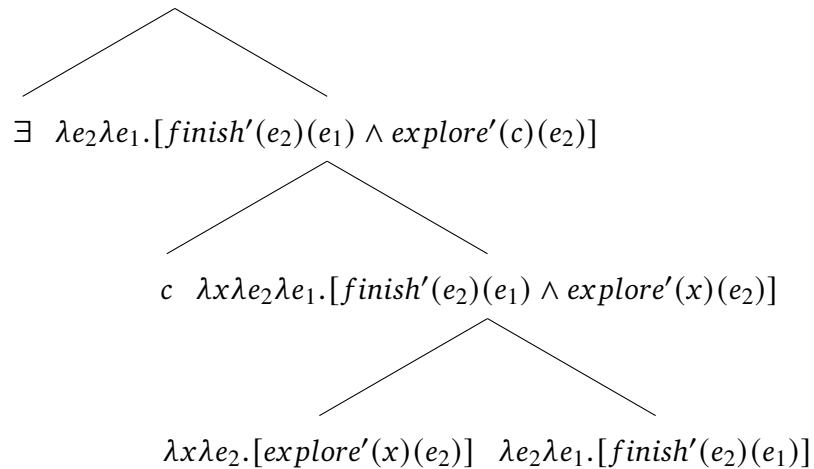
$\lambda e_2 \lambda e_1. [finish'(e_2)(e_1) \wedge explore'(c)(e_2)] \leftarrow \text{Function Application}$



After saturation of *x*, the  $\lambda$ -bound variable  $e_2$  (the internal argument variable of the predicate *finish'*), now again at the front of the lambda prefix, must be existentially closed: since this argument was targeted for modification in (86), it cannot be directly targeted by Function Application.

(89) Third step of LF composition for (80):

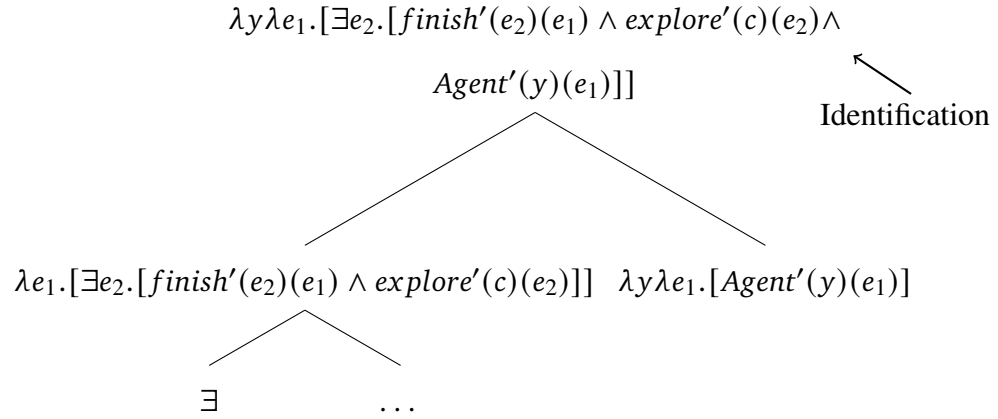
$\lambda e_1. [\exists e_2. [finish'(e_2)(e_1) \wedge explore'(c)(e_2)]] \leftarrow \text{Existential Closure}$



#### §4.4 Argument position is predicted by LF

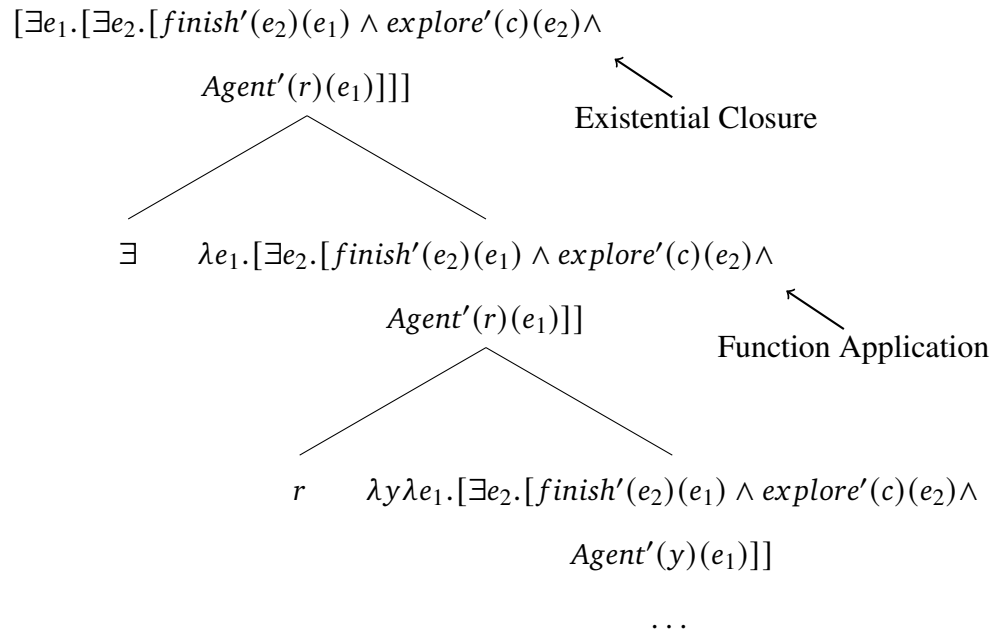
Finally, the functional projection Voice composes with the structure via Identification over the event variable  $e_1$ .

(90) Fourth step of LF composition for (80):

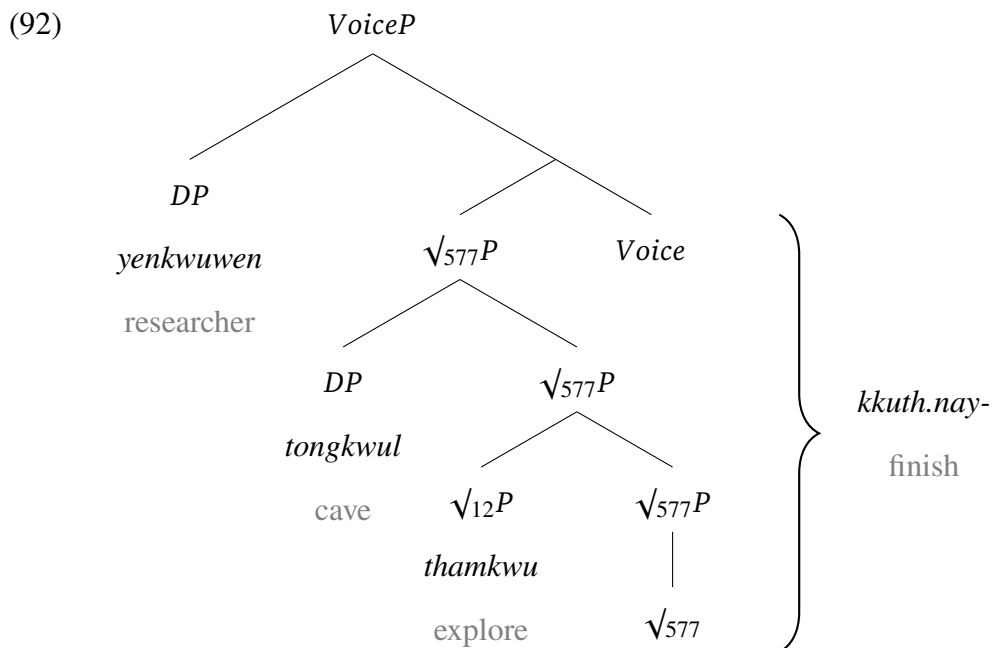


The argument of Voice (represented as a constant  $r$ ) composes next, via Function Application, and  $e_1$  is then existentially closed (91).

(91) Final step of LF composition for (80):



The syntactic structure corresponding to this LF derivation is given in (92).



A derivation for Korean external possession would proceed identically, with the only difference being the two argument-introducing predicates chosen to interact with each other at the base of the structure. Consider the example in (93).

- (93) *nikho-ka hanyengi-lul son-ul cap-ass-ta*  
 Niko-NOM Hanyoung-ACC hand-ACC grab-PST-DECL  
 “Niko grabbed Hanyoung’s hand.”

We start with two argument-introducing predicates. One is the predicate denoted by *cap-* (“grab”), given in (94), where the variable *e* is the event argument, and the variable *x* is the internal argument variable of “grab”, which must be a *e* type entity per Section §4.3.2. The other is the predicate denoted by *son* (“hand”), given in (95), where the variable *x* picks out the set of individuals with the property of being hands, and *y* is the

internal argument variable, the “whole” that is entailed by the part.

$$(94) \quad \llbracket cap- \rrbracket = \lambda x_e \lambda e_s. [grab'(x)(e)]$$

$$(95) \quad \llbracket son \rrbracket = \lambda y_e \lambda x_e. [hand'(y)(x)]$$

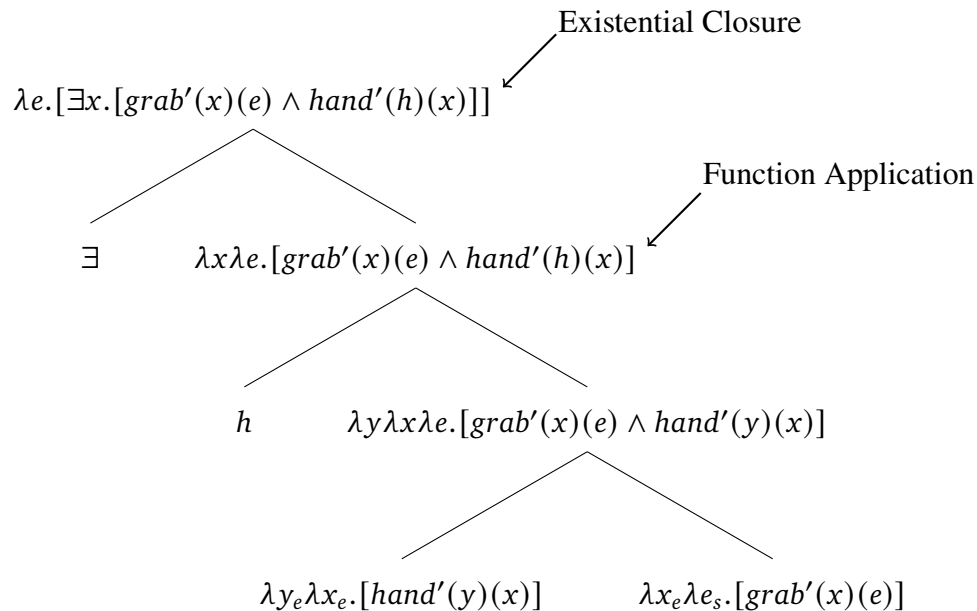
In building the LF for the predicate structure in (93), the matrix predicate *grab'* begins the structure, and the predicate *hand'* modifies the predicate *grab'*, composing via the composition mode of Variable Identification (85).

(96) First step of LF composition for (80):

$$\lambda y \lambda x \lambda e. [grab'(x)(e) \wedge hand'(y)(x)] \longleftarrow \text{Identification}$$
$$\lambda y_e \lambda x_e. [hand'(y)(x)] \quad \lambda x_e \lambda e_s. [grab'(x)(e)]$$

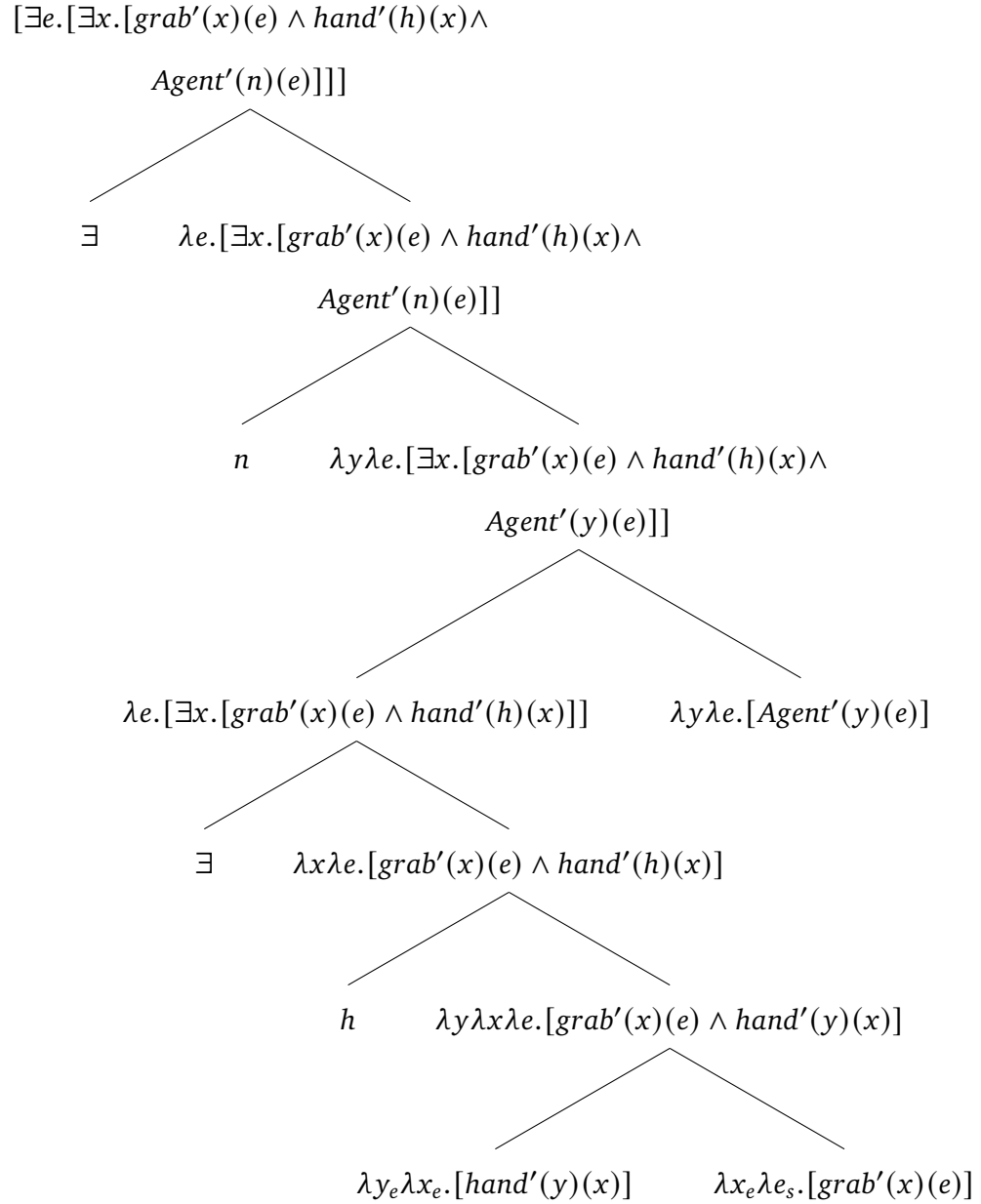
Once *hand'* has merged as a modifier of the internal argument variable of matrix predicate *grab'*, its own argument, represented by the variable *y* in (96), is the outermost  $\lambda$ -bound variable of the lambda prefix, and so it must be handled next. The composition in (97) demonstrates the IA of *hand'* (represented by a constant *h*) composing via Function Application, which will correspond to the generation of a DP in a specifier position of the structure. After saturation of *y*, the  $\lambda$ -bound variable *x* (the internal argument variable of the predicate *grab'*), is existentially closed.

(97) Second step of LF composition for (93):

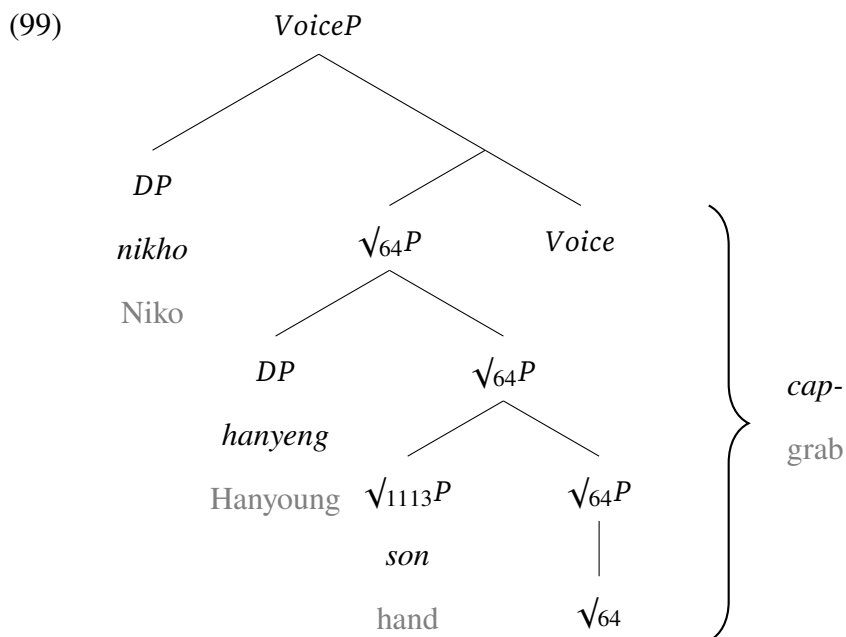


Finally, the functional projection Voice composes with the structure via Identification over the event variable. The argument of Voice (represented as a constant  $n$ ) composes next, via Function Application, and  $e$  is then existentially closed. The complete LF is shown in (98).

(98) Full LF composition of (93) predicate structure:



The syntactic structure corresponding to this LF derivation is given in (99).



With the structural proposals for both Syntax and LF unpacked, we next turn to the question of case assignment, given the proposed trees in (99) and (92).

## § 4.5 A note on case assignment

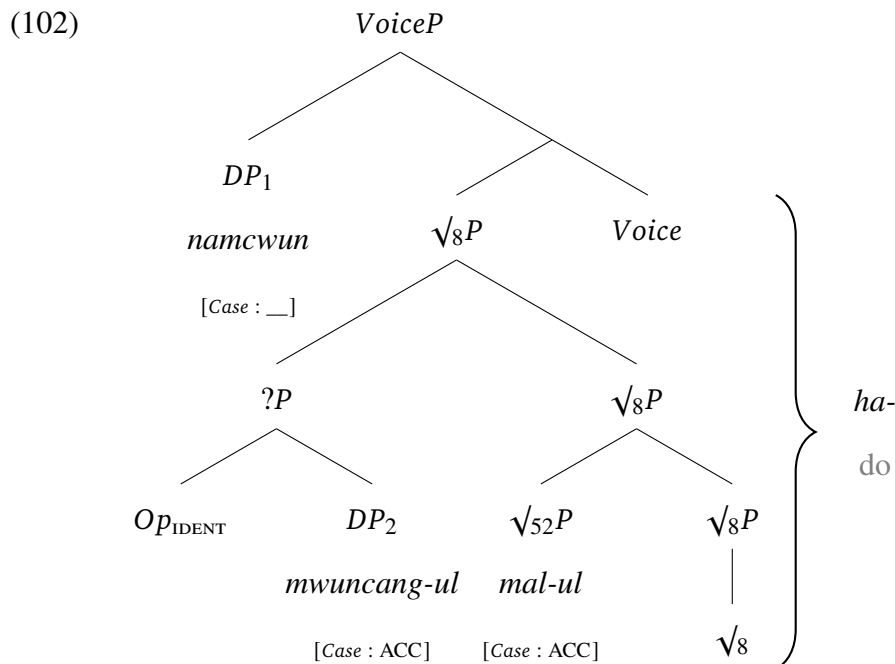
In Chapter 3, I implemented the cyclic Dependent Case analysis for Korean proposed in Jou (2024). Recall, briefly, the implementation for the data point in (100), where both the incorporee *mal* and the classificatory modifier *mwuncang* receive accusative case.

- (100) *namcwuni-ka mwuncang-ul mal-ul ha-yss-ta*  
 Namjoon-NOM sentence-ACC word-ACC do-PST-DECL  
 “Namjoon said the sentence.”

I restate Jou (2024)’s rule for downward dependent case valuation again in (101).

- (101) Dependent case valuation: Evaluate every **case target pair** that is *associated with the current phase* for dependent case per the Dependent case algorithm.
- a. **Downward dependent case** (Baker 2015): if there are two distinct NPs in the same phase such that NP1 c-commands NP2, then value the case feature of NP2 as accusative, unless NP1 has already been marked for case.

As discussed in Chapter 3, getting the case facts correct for (100) within Jou (2024)'s system, such that both the adjunct and the incorporee receive ACC case, only works because the adjunct has some assumed structural complexity— if we assume that it is the embedded DP *mwuncang* itself that is the case recipient, rather than the entire adjunct phrase, then we can ensure that *mwuncang* is too deeply embedded to trigger downward dependent case valuation; it does not c-command the incorporee in (102).



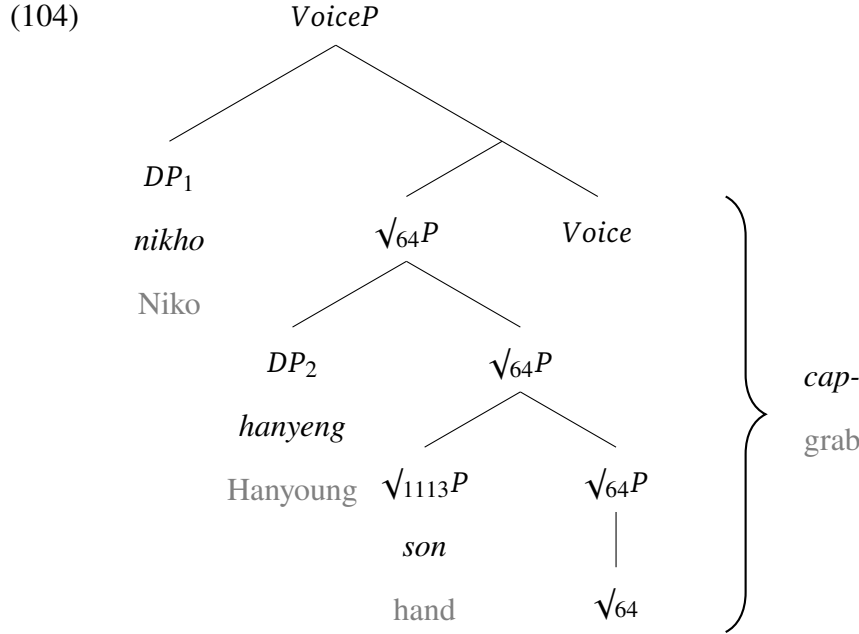
#### Chapter 4 *Beyond sisterhood, part 2: displacement*

Given that the classificatory incorporation structures in Korean also require that  $\sqrt{P}$ s are case recipients as well, some dissatisfaction remains; why should a  $\sqrt{P}$  adjunct be a potential case target, but the larger classificatory adjunct is not, and instead only its embedded DP is? Nonetheless, setting these issues aside in §3.3.2 I implemented Jou (2024)’s system as is, with only the minimal change to adding  $\sqrt{P}$ s as possible case targets.

However, returning to the argument displacement constructions in this chapter, Jou (2024)’s system fails. The argument displacement phenomena, on the surface, are similar to the classificatory incorporation example (100) with respect to case marking. Both sentences in (103) have two satellite phrases, both marked with accusative case.

- (103) a. *yenkwuwen-i tongkwul-ul thamkwu-lul kkuth.nay-ss-ta*  
researcher-NOM cave-ACC explore-ACC finish.CAUS-PST-DECL  
“The researcher finished exploring the cave.”
- b. *nikho-ka hanyengi-lul son-ul cap-ass-ta*  
Niko-NOM Hanyoung-ACC hand-ACC grab-PST-DECL  
“Niko grabbed Hanyoung’s hand.”

In the proposed structures, however, the left-most ACC-marked phrase c-commands the right-most ACC-marked phrase. I give again the example structure for the external possession construction once more in (104).



For Jou (2024)’s system to apply, we would want the Dependent Case algorithm to pick out the case target pairs  $\langle DP_1, DP_2 \rangle$  and  $\langle DP_1, \sqrt{1113}P \rangle$ ; but here in (104) there is one more case target pair,  $\langle DP_2, \sqrt{1113}P \rangle$ . Some researchers have argued for dative case to be a reflex of dependent case assignment within the VP, such that in a double object construction, the indirect object, c-commanding the direct object, forms a case target pairing, such that dative case as upward dependent case is assigned to the indirect object (see discussions in Baker 2014; Baker & Vinokurova 2010; among others)<sup>3</sup>. But in Korean, it does not seem empirically that we have any sort of clear case reflex in response to the pair of potential case recipients  $\langle DP_2, \sqrt{1113}P \rangle$ . It also makes little sense to apply the same bandaid from Jou (2024), positing a null Adv head to embed  $DP_2$  so that it no longer c-commands  $\sqrt{1113}P$ ; doing so would go against the entire argumentation for the

<sup>3</sup>As additional support that the structural proposal of this chapter is on the right track, note that, in some languages with external possession, the external possessor phrase *is* indeed marked with dative (e.g., Hebrew, French).

#### *Chapter 4 Beyond sisterhood, part 2: displacement*

syntactic and semantic structural proposals put forth in this chapter:  $DP_2$  is an argument, not an adjunct, and should compose as such with the main predicate structure.

The issue here, really, is that the more we dig deep into the argument structure of Korean, the less it seems like Korean has a case system that can be subsumed under Dependent Case Theory. In addition to the observation that ACC case assignment does not track c-command relationships between case recipients, here are three more issues that we have come across in this dissertation so far, all of which point away from a dependent case algorithm.

First, we've seen that DP arguments are *not* the only types of constituents that receive case:  $\sqrt{P}$ s receive case, PPs receive case, durative/multiplicative adjuncts receive case, and classificatory modifiers receive case (though I stayed agnostic about the exact label of the containing category). These constituents do not share a containing category label in common, but what they do have in common, is that they are all syntactic adjuncts. And so we can state the generalization in (105):

(105) In Korean, all DP arguments and all adjuncts receive case.

Second, we've seen that in Korean, case on direct objects is tied to *movement*. Recall, from Chapter 2, discussion of differential object marking (DOM) in both the nominal *and* verbal domains. There are two positions for a direct object to appear, either directly adjacent to its introducer, or preceding modification. Optionality of case marking on the object is determined by position: when directly adjacent to the predicate (106), case is optional, and can be dropped. When the object precedes a modifier, however, as in (107), case is obligatory.

#### §4.5 A note on case assignment

- (106) a. *cikwen-i cacwu kongkum(-ul) hoynglyeng-ha-yss-eyo*  
 worker-NOM frequent.ADV fund(-ACC) embezzle-do-PST-DECL  
 “The worker frequently embezzled (the) funds.”
- b. *cikwen-uy cac-un kongkum(-uy) hoynglyeng*  
 worker-GEN frequent-ADJ fund(-GEN) embezzle  
 “the worker’s frequent embezzlement of (the) funds”
- (107) a. *cikwen-i kongkum\*(-ul) cacwu hoynglyeng-ha-yss-eyo*  
 worker-NOM fund\*(-ACC) frequent.ADV embezzle-do-PST-DECL  
 “The worker frequently embezzled the funds.”
- b. *cikwen-uy kongkum\*(-uy) cac-un hoynglyeng*  
 worker-GEN fund\*(-GEN) frequent-ADJ embezzle  
 “the worker’s frequent embezzlement of the funds”

In line with the generalizations that others have stated for DOM (see, e.g., [Poole 2023](#)), in Chapter 2, we concluded from the DOM paradigms (106–107) that in Korean, an internal argument must leave the  $\sqrt{P}$  constituent, in order to receive case. Taking this into account, we can update our generalization from (105) to say (108):

- (108) In Korean, all adjuncts and all arguments in *derived* positions receive case.

Third, the DOM data also draws an intriguing parallel between GEN and ACC; object shift is possible in both the verbal and nominal domains, and in both cases feeds case assignment (either ACC or GEN, respectively). Within Dependent Case Theory (DCT) analyses, there are two main perspectives on GEN case; one perspective argues that GEN can receive a configurational analysis under DCT, as an unmarked/default case within

the nominal domain (Levin & Preminger 2015), while the alternative perspective argues that GEN should receive a separate treatment, as the product of a nominal entering an Agree relationship with a functional head (Baker & Vinokurova 2010). There is an additional perspective on GEN case in Korean, that doesn't neatly align with either of the predominant competing case assignment frameworks (DCT or Case-as-Agree), but contributes further evidence that (108) is correct, and that GEN and ACC can once again be observed to have similar signatures in Korean. An (2014) points out that GEN marks a number of diverse constituents in the nominal domain, many of which cannot easily be analyzed as arguments. For example, in addition to appearing on arguments of the head N, Korean GEN also obligatorily appears on postpositional phrases, numeral classifier phrases, and quantificational phrases (109).

- (109) a. *mikwuk-ulopwuthe-uy phyenci*  
America-from-GEN letter  
“a letter from America” (An 2014: 364)
- b. *chomsukhi-wa-uy inthepywu*  
Chomsky-with-GEN interview  
“an interview with Chomsky” (An 2014: 364)
- c. *sey-kwen-uy chayk*  
three-CL-GEN book  
“three books” (An 2014: 364)
- d. *taypwupwun-uy salam*  
majority-GEN people  
“a majority of people/most people”

An (2014) points out that the distribution of GEN case does not align with the predicted distribution of case morphology under the Case-as-Agree perspective, in particular because it obligatorily marks a number of constituents that are not thematic arguments of the head N, but are instead adjuncts. I note that this distribution is similarly not easily captured by DCT, either, both because GEN marks adjuncts, as well as because GEN, just like ACC, can mark multiple satellite constituents (that c-command each other) within the same nominal, e.g., (110). An (2014) ultimately provides an alternative analysis of the Korean GEN marker not as case, but as an allomorph of *-n*, the affix that occurs on clausal modifiers to N.

- (110)    *tahwuni-uy sey-kwen-uy chayk*  
           Dahoon-GEN three-CL-GEN book  
           ‘Dahoon’s three books’

Taking all of these observations together, we arrive at a pretty consistent generalization for both GEN and ACC case in Korean, but not one that fits neatly under either DCT or Case-as-Agree models of case assignment. The reason DCT is inadequate is because of the c-command issue: the proliferation of ACC case on multiple phrases within the same VP that sit in a c-command relation with respect to each other, and the same proliferation of GEN case also observed in the nominal domain, makes it seem like case morphology in Korean isn’t straightforwardly sensitive to the structural configuration of NPs with respect to each other (not to mention that many of these case-marked phrases are not NPs at all). At first glance, the movement signature of differential object marking, such that an argument surfacing in a derived position receives case, seems to favor a Case-as-Agree account, such that an object receives Case as a consequence of

forming a probe-goal relation with a higher functional head and consequentially moving up— but this leaves the case marking on adjuncts unexplained, as adjuncts do not enter probe-goal relations with higher functional heads.

Rather than adopting either a DCT or Case-as-Agree perspective on Korean case assignment, I believe that the best approach to case in Korean is one that takes the generalization in (108) seriously, and asks; what do adjuncts and derived arguments have in common? This question strikes me as remarkably similar to the question that researchers of strong islands have asked: what do adjuncts and specifiers have in common? The Adjunct Condition and Subject Condition can and have been unified under a single structural generalization: any maximal projection that merges with a phrase is an island (Ross 1967; Chomsky 1973; Cattell 1976; Kayne 1981; Huang 1982; Pesetsky 1982; Privoznov 2021). While a full articulation of the consequences of this proposal and the resulting picture it paints for our theory of case is reserved for future work, I suggest here that it is this exact same structural relationship described in the strong island literature that Korean case marking tracks: all maximal projections that are sister to a phrase receive case.

## **§ 4.6 Consequences for a theory of selection**

This chapter investigated two argument displacement phenomena in Korean: SKL double case constructions and external possession. Both paradigms pose a challenge to theories of argument structure, because an argument is realized in an unexpected position, external to its argument introducer, rather than as its complement. A theory of argument introduction that relies on syntactic features of heads to generate arguments

#### §4.6 *Consequences for a theory of selection*

in the structure cannot account for argument displacement without appealing to control or raising. However, we saw that, for the Korean phenomena, neither of these two analyses were empirically sufficient. We found an alternative path forward in noting the common syntactic and semantic profile that the right-most ACC-phrases have in common with the incorporees discussed in Chapter 3. I argued that argument displacement is a phenomenon that occurs when a two-place predicate is used as a modifier, to restrict the internal argument variable of another predicate. Following the modes of composition, this results in the argument of the modifying predicate surfacing as a specifier. One important thing to note, implied but not explicitly expressed in the above sections, is that the modifying predicate is not created separately in the syntactic “workspace”, as is often assumed for adjuncts and arguments, but is in fact merged directly with the main derivation— this is one way to make sense of why its argument is not introduced until after the modifier is merged with the main structure.

If the analysis presented in this chapter is correct, it presents a major problem for theories of argument selection that rely on the syntactic features of heads: we’ve seen that constituents (bare plurals/predicative indefinites/pseudo-incorporees), which we don’t think of as syntactic heads, are items that, due to their predicative nature, compose with the main structure via Variable Identification, in the same way as other predicates (like the denotation of the Voice head) do, and their arguments are realized as specifiers as a consequence of their predicative nature (just like the argument of the Voice head is). This suggests that the position of DP arguments is ultimately driven, not by head-complement selection, but by the rules of semantic composition, reminiscent of the structural constraints on predication discussed in Williams (1980).

## Chapter 5

### Conclusion

This dissertation conducted three in-depth investigations of Sino-Korean loanwords and the construction of complex predicates in Korean, and drew from these findings to make a number of claims about the nature of argument structure, and the role of the syntax-semantics interface and the morpho-syntactic interface in constraining the possibilities of argument structure realization.

Chapter 2 argued, based on the syntactic properties of Sino-Korean AS-Nominals and complex predicate constructions, that internal arguments should *not* be severed from the lexical predicate (Kratzer 1996), and are not introduced by a functional projection, of either the verbal or nominal domain. Instead, internal arguments are introduced by Roots, which have the formal status of a syntactic projection just as any other terminal node in the syntactic structure. I argued for a denotation of argument-introducing Roots as two-place lexical predicates, modeled with classical Davidsonian semantics. I discussed in §2.4 some of the consequences of adopting the  $\sqrt{P}$  for all predicate structures which have an internal argument. Most prominently, I argued that the fact that Sino-Korean and native Korean AS-Nominals differ in their syntactic structures (such that the

latter are only able to create deverbal nominalizations), requires us to envision a model of the Syntax-PF interface which allows for morphological mechanisms to “filter” or rule out deviant derivations in some way. I provided one possible route of modeling this claim within a post-syntactic approach to morphology, drawing inspiration from work by [Kramer \(2015\)](#), in particular, and supplemented by the mechanism of Spanning ([Svenonius 2012, 2016](#); [Merchant 2015](#)).

In Chapter 3, I turned to a close investigation of a type of Korean complex predicate that patterned differently from the SKL predicates of interest in Chapter 2. I argued that these “denominal” predicates, despite having superficial surface similarity to transitive sentences, are in fact best analyzed as instances of classificatory incorporation. I developed a syntax-semantics analysis of incorporation, building on the insights of [van Geenhoven \(1998\)](#) and [Chung & Ladusaw \(2004\)](#), arguing for a base-generation approach to incorporatees as adjuncts that operate as restrictive modifiers of the internal argument variable denoted by the main predicate of a given derivation. The upshot of this analysis is a picture of argument introduction that treats DP argument projection as just one of two possibilities for an internal argument variable to be grammatically represented in the syntactic structure. A derivation that starts with an argument-introducing predicate can either: 1) have direct saturation of its argument slot via Function Application, which will correspond to the syntactic realization of a DP argument; or 2) have restrictive modification and existential closure of the argument variable, which will result in an incorporated or pseudo-incorporated construction. We saw evidence that this second route results in a syntactically intransitive (unergative) structure. In light of the empirical reality that having an argument-introducing predicate present in the structure does not necessitate syntactic introduction of said predicate’s argument, I suggested that a

## Chapter 5 Conclusion

selectional account of DP argument introduction fails to capture the relationship between syntactic non-realization of an IA and the corresponding interpretative effects at LF.

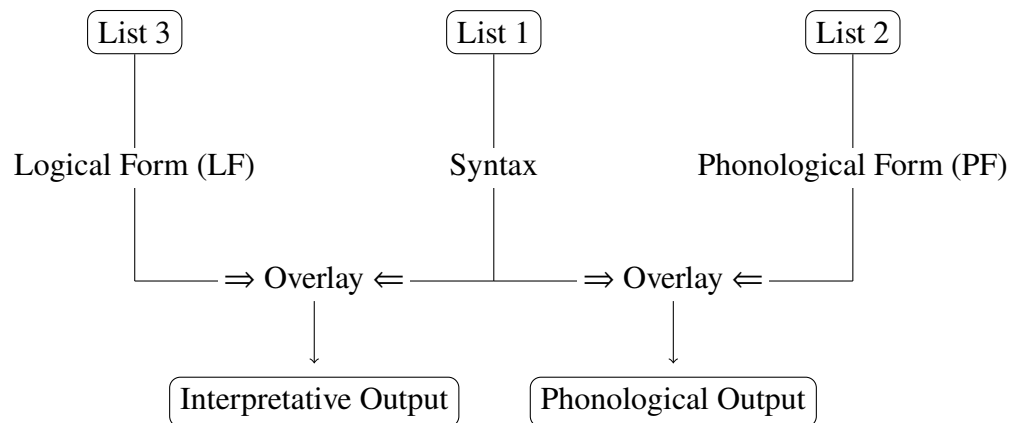
Chapter 4 extended the syntax-semantics account of the previous chapter to account for argument displacement phenomena in Korean. Through a close investigation of SKL double accusative case constructions and external possession constructions, I argued that, rather than a movement or control account which would maintain that the IA of the relevant predicate is its syntactic sister, these argument displacement constructions truly do have the IA of the relevant predicate displaced, and base-generated as a specifier. This followed from the semantic modes of composition initially developed in Chapter 3, with an extension to the consequence of using a two-place predicate as a restrictive modifier of the IA variable of another two-place predicate. If correct, this analysis must change how we think about syntactic argument introduction, because it demonstrates that the position of DP arguments in Syntax is not driven by *syntactic heads*, but instead by the position of constituents that are argument-introducing predicates.

This collection of facts, when taken together, make the case that DP arguments cannot and should not be subsumed under a c(ategory)-selectional analysis, and are not licensed by the mechanisms that guide head-complement relations. DP argument introduction cannot be mediated by category feature selection in Syntax, but instead must be driven by the semantic principles of predication and composition, constrained by the structural location of argument-introducing predicates. In short, argumenthood *must* be defined beyond what the standard tools of Syntax give us, comparable to the way that researchers often characterize s(emantic)-selection as positional but dependent on principles beyond what Syntax proper can account for.

In the introduction chapter (Chapter 1) I briefly outlined one possible model of the

LF-Syntax (and PF-Syntax) interfaces that might be capable of handling the upshot of this dissertation, and I restate this possible grammatical model here below. Though development and further critical scrutinization of this model requires much future work, the essential idea posits a free generation approach of Merge in Syntax proper for both adjuncts and DP arguments, in combination with “semantic filtering”, such that deviant structures are ruled out by LF. What the Syntax and LF structures must have in common is the branching; a model that requires overlay of two structures built in tandem (in LF, and in Syntax), can ensure that any Syntactic structure that doesn’t align with the composition of predicates in LF is ruled out/considered ungrammatical. I term this the Parallel Overlay Model— or the “W”-model, based on its shape— schematized below in (1). The model suggests that the items of the three proposed lists of a Distributed Morphology-style Lexicon (List 1, grammatical feature bundles; List 2, Vocabulary Items; List 3, Encyclopedia) each partake in their respective modules.

(1) The Parallel Overlay Model (“W” Model)



This model requires a direct one-to-one mapping between LF and Syntax, as well as between PF and Syntax (just as the Y-model does), but not because the Syntax feeds LF

## *Chapter 5 Conclusion*

and PF, but because, in order for the derivation to converge, Syntax must be alignment with both of the structural outputs built by LF and PF respectively. As discussed in Chapter 2, the morphotactics of loan and native predicates in Korean require some means by which PF can have a say in what types of syntactic derivations are possible. As discussed in Chapters 3 and 4, incorporation and argument displacement structures also require some means by which LF can have a say in what types of syntactic derivations are possible. The model in (1) is a first attempt in outlining a vision of the interfaces that gives us both of these possibilities.

## Appendix

This appendix presents all Korean examples from throughout this dissertation in their original orthography (Hangul). Examples are presented in chronological order of their appearance, by chapter. Numbering is aligned to match the numbering of each respective in-text example.

### Chapter 2

- (18) 미군의 바그다드로의 신속한/\*신속히 진격
- (19) 아인슈타인의 빠른/\*빨리 빛의 속도(의) 계산은
- (20) 연구원의 끊임없는/\*끊임없이 동굴(의) 탐구는
- (21) 연구원의/\*이 끊임없는 동굴(의/\*을) 탐구는
- (22) a. 철수의 의도적인 영희에 대한 비난  
b. 사장의 계획적인 증거(의) 은폐
- (23) a. 미군의 3일 동안의 바그다드(의) 공격  
b. 연구원의 2년 동안의 동굴(의) 탐구
- (24) a. 직원의 잦은 공금(의) 횡령  
b. 연구원의 끊임없는 동굴(의) 탐구
- (25) 아인슈타인의 빠른/느린 빛의 속도(의) 계산
- (28) a. 아인슈타인이 빛의 속도를 계산했어요  
b. 직원이 공금을 횡령했어요  
c. 연구원이 동굴을 탐구했어요
- (29) \* 아인슈타인이 빛의 속도를 계산었어요
- (31) a. 연구원이 동굴을 끊임없이/\*끊임없는 탐구했어요  
b. 직원이 공금을 빠르게/\*빠른 횡령했어요

- (32) a. 연구원이/\*의 동굴(을/\*의) 탐구했어요  
b. 직원이/\*의 공금(을/\*의) 횡령했어요
- (33) 말랑(말랑)  
a. 말랑(말랑)하다  
b. 말랑이
- (34) 야옹(야옹)  
a. 야옹(야옹)하다  
b. 야옹이
- (35) 개굴(개굴)  
a. 개굴(개굴)하다  
b. 개구리
- (36) a. \*(개구리들의) 개굴개굴이 들렸어요  
b. (개구리들이) 개굴개굴하는 소리가 들렸어요
- (38) a. 남준이가 문장을 크게 말했어요  
b. 그 가수가 자연의 아름다움을 자주 노래했어요
- (39) a. 이 문장은 말이 많아요  
b. 한영이가 좋아하는 노래가 라디오에서 흘러나왔어요
- (40) a. \* 남준이가 문장을 큰 말했어요  
b. \* 그 가수가 자연의 아름다움을 잦은 노래했어요
- (41) a. \* 남준이의 잦은 문장(의) 말  
b. \* 가수의 잦은 자연의 아름다움 노래
- (42) \* 남준이의 계획적인 문장(의) 말
- (43) a. 직원이 자주 공금(을) 횡령했어요  
b. 직원이 공금\*(을) 자주 횡령했어요
- (44) a. 직원의 잦은 공금(의) 횡령  
b. 직원의 공금\*(의) 잦은 횡령
- (47) a. 남준이가 크게 문장\*(을) 말했어요  
b. 가수가 자주 자연의 아름다움\*(을) 노래했어요

- (48) a. 남준이가 문장\*(을) 크게 말했어요  
b. 가수가 자연의 아름다움\*(을) 자주 노래했어요
- (50) 연구원이 동굴을 탐구했어요
- (54) 연구원의 동굴(의) 탐구
- (59) a. 선생님이 칠판을 지웠어요  
b. 그 아이가 음식을 먹었어요
- (60) a. ?? 선생님의 철저하게 칠판 지우기는 인상적였어요  
b. ?? 그 아이의 느리게 음식 먹기는 시간이 많이 걸렸어요
- (61) a. 선생님이 철저하게 칠판 지우기로 결정했어요.  
b. 그 아이가 느리게 음식 먹기로 결정했어요
- (62) a. 호석이가 카드를 골랐다  
b. 호석이가 카드를 선택했다
- (65) a. \* 가수의 잦은 자연의 아름다움 노래  
b. 그 가수가 자연의 아름다움을 자주 노래했어요
- (66) a. 일하다  
b. 이야기하다  
c. 밥하다
- (67) a. 산책하다  
b. 편지하다  
c. 농담하다
- (68) 저는 농담이 정말 싫어요
- (69) \* 한영이의 잦은 농담
- (70) 한영이가 (\*프로젝트를) 농담했어요
- (71) 개굴(개굴)하다
- (72) a. \* 고르  
b. 고르자  
c. 고르기

- (73) a. \* 고르가  
b. \* 고르를  
c. \* 고르의
- (74) 맞다, 맞추다; 웃다, 웃기다; 늦다, 늦추다; 알다, 알리다; 마시다; 먹히다, 먹다, 먹이다; 달히다, 달다; 바뀌다, 바꾸다
- (75) a. 선택  
b. \* 선택자  
c. 선택하자  
d. \* 선택기  
e. 선택하기
- (76) a. 선택이  
b. 선택을  
c. 선택의
- (77) a. 빙산이 배를 침몰시켰다  
b. 배가 침몰했다  
c. \* 침몰됐다
- (78) a. 군인들이 도시를 파괴했다  
b. 도시가 파괴됐다
- (79) a. 직원이 영수증을 계산했다  
b. 영수증이 계산됐다
- (80) 군인들이 도시를 파괴시켰다
- (81) 사장이 영수증을 직원에게 계산시켰다
- (97) 호석이가 카드를 골랐다

## Chapter 3

- (4) 연구원이 동굴을 탐구했어요
- (5) a. 남준이가 문장을 크게 말했어요  
b. 그 가수가 자연의 아름다움을 자주 노래했어요

- (6) a. \* 남준이의 잦은 문장(의) 말  
b. \* 가수의 잦은 자연의 아름다움(의) 노래
- (7) a. 이 문장은 말이 많아요  
b. 한영이가 좋아하는 노래가 라디오에서 흘러나왔어요
- (8) a. 직원이 공금\*(을) 자주 횡령했어요  
b. 직원이 자주 공금(을) 횡령했어요
- (9) a. 남준이가 문장\*(을) 크게 말했어요  
b. 남준이가 크게 문장\*(을) 말했어요
- (10) a. 미나가 한 시간을 책을 읽었다  
b. 미나가 세 번을 경찰을 불렀다
- (11) a. 미나가 세 시간을 낭비했다  
b. 미나가 월급을 낭비했다  
c. \* 미나가 낭비했다
- (12) a. 미나가 세 시간을 잤다  
b. 미나가 잤다
- (13) a. 미나가 깊이 그리고 많은 시간을 잤다  
b. 미나가 여러 번을 그리고 시끄럽게 소리쳤다
- (14) a. 미나가 많은 시간을 그리고 편안한 배계와 함께 잤다  
b. 미나가 깊이 그리고 편안한 배계와 함께 잤다
- (15) a. 남준이가 문장을 말했어요  
b. 사실을 말해주세요
- (16) a. \* 윤기가 어제의 사건을 말했어요  
b. \* 나는 한국어를 자주 말해요
- (17) a. 윤기가 어제의 사건에 대해 말했어요  
b. 나는 한국어로 자주 말해요
- (18) 채은이가 과제 일 번을 질문했어요
- (19) a. \* 윤기가 어제의 사건을 질문했어요  
b. 윤기가 어제의 사건에 대해 질문했어요

- (20) a. \* 길을 질문해야 돼요  
b. 길에 대해 질문해야 돼요
- (21) 길을 물어봐야 돼요
- (25) 전설에 따르면 그 산에 유령이 있다고 (\*말)했다
- (26) 표지판이 멈추라고 (\*말)해요
- (27) 산에 유령이 있다는 말
- (36) 남준이가 문장을 말했어요
- (37) a. \* 남준이가 흥미로운 말했어요  
b. 남준이가 흥미로운 말을 했어요
- (70) 남준이가 문장을 말했어요
- (73) 남준이가 말했어요
- (79) 남준이가 문장을 말했어요
- (82) a. 유럽으로\*(의) 여행  
b. 행복\*(의) 순간  
c. 미국으로부터\*(의) 편지  
d. 대부분\*(의) 사람
- (83) a. \* 문장 말  
b. \* 문장의 말
- (84) a. 산에 유령이 있다는 말  
b. 호석이 산에 유령이 있다고 말했다
- (87) 요리사가 냄비를/\*가 네 번을 달궜다
- (88) 미나가 다섯 번을/\*이 하품했다
- (90) 한영이가 한국에(만)을 간다
- (98) 남준이가 문장을 말을 했다
- (99) 남준이가 문장을 말을 안 했다
- (100) \* 남준이가 문장을 큰 말을 했다

## Chapter 4

- (5)    a.    아인슈타인이 빛의 속도를 계산했어요  
          b.    아인슈타인이 빛의 속도를 계산을 했어요
- (6)    a.    직원이 공금을 횡령했어요  
          b.    직원이 공금을 횡령을 했어요
- (7)    a.    연구원이 동굴을 탐구했어요  
          b.    연구원이 동굴을 탐구를 했어요
- (8)    석진이가<sub>i</sub> 그를<sub>\*i/j</sub> 조사를 했어요
- (9)    그 증거조차(도) 석진이가 조사를 했어요
- (10)   연구원의 끊임없는/\*끊임없이 동굴 탐구는
- (11)   연구원의 끊임없는 동굴(의/\*을) 탐구는
- (17)   그 사람이 동굴을 탐구\*(를) 끝냈어요
- (18)   그 사람이 동굴을 탐구\*(를) 시작했어요
- (19)   a.    니코가 한영이를 팔을 때렸어요  
          b.    아주머니가 아이를 손을 잡았어요
- (20)   석진이가<sub>i</sub> 그를<sub>\*i/j</sub> 팔을 쳤어요
- (21)   그 아이조차(도) 석진이가 손을 잡았어요
- (24)   a.    \* 니코가 한영이를 차를 때렸어요  
          b.    \* 아주머니가 아이를 장난감을 잡았어요
- (25)   a.    니코가 한영이(의) 팔을 때렸어요  
          b.    아주머니가 아이(의) 손을 잡았어요
- (26)   a.    니코가 한영이\*(의) 차를 때렸어요  
          b.    아주머니가 아이\*(의) 장난감을 잡았어요
- (35)   a.    태형이가 지민이를 머리를 잡아당겼어요  
          b.    태형이가 지민이(의) 머리를 잡아당겼어요
- (36)   태형이가 지민이를 머리를 잡아당겼지만 지민이가 알아차리지 못했다

- (37) a. 내가 의자를 다리를 부러뜨렸다  
b. 준구가 호수를 수면을 바라봤다  
c. 정국이가 나무를 가지를 쳤다
- (38) 니코가 다훈이를 다리를 때렸어요
- (39) \* 니코가 다훈이를 가방을 훔쳤어요
- (41) a. 아인슈타인이 빛의 속도(의) 계산을 끝냈어요  
b. 아인슈타인이 빛의 속도(를) 계산을 끝냈어요
- (42) a. 직원이 공금(의) 횡령을 계속했어요  
b. 직원이 공금을 횡령을 계속했어요
- (43) 나는 (\*태형이를) 공을 쳤다
- (44) 나는 (\*한국을) 여행을 끝냈어요
- (46) 연구원이 태형이를 위해 동굴을 탐구를 해줬어요
- (47) 니코가 주회를 위해 한영이를 손을 잡아줬어요
- (48) a. 정국이가<sub>i</sub> 그를<sub>\*i/j</sub> 조사를 했어요  
b. 정국이가<sub>i</sub> 그를<sub>\*i/j</sub> 팔을 쳤어요
- (49) a. 그 증거조차(도) 정국이가 조사를 했어요  
b. 그 아이조차(도) 정국이가 손을 잡았어요
- (50) a. 정국이가 아이(의) 손을 잡았다  
b. 정국이가 증거(의) 조사를 끝냈다
- (51) \* 니코가 한영이를 팔을 사랑한다
- (52) \* 연구원이 동굴을 탐구를 사랑한다
- (53) 니코가 한영이(의) 팔을 사랑한다
- (54) 연구원이 동굴(의) 탐구를 사랑한다
- (55) a. 나무가 가지가 부러졌어요  
b. 동굴이 탐구가 시작됐어요
- (56) a. \* 돈을 얻으려(고) 나무가 가지가 부러졌어요  
b. \* 돈을 얻으려(고) 동굴이 탐구가 시작됐어요

- (57) a. 니코가 한영이를 팔을 갑자기 때렸어요  
b. 윤기가 호석을 머리를 조심스럽게 잘랐어요  
c. 정국이가 나무를 가지를 느리게 잡았어요  
d. 다훈이가 의자를 다리를 우연히 부러뜨렸어요  
e. 준구가 호수를 수면을 생각 없이 더럽혔어요
- (58) a. 우리가 전시회를 준비를 드디어 시작했다  
b. 연구원이 동굴을 탐구를 끝냈다  
c. 한국 정부가 백신을 배부를 느리게 계속했다  
d. 누군가 전시회를 준비를 부탁했다  
e. 그 회사가 공금을 횡령을 확실히 금지한다  
f. 그 사람이 동굴을 탐구를 관대하게 허락했다
- (59) 준구의 사진의 사랑
- (60) a. 철수가 선회를 손을 봤어요  
b. 철수가 선회 손을 봤어요
- (61) 마녀 사냥을 시작했다
- (62) 그 사람이 사슴을 사냥했어요
- (63) a. 그 사람이 마녀 사냥을 했다  
b. 그 사람이 마녀를 사냥을 했다
- (64) a. \* 니코가 한영이를 강한 팔을 때렸어요  
b. \* 아주머니가 아이를 작은 손을 잡았어요
- (65) a. 나코가 한영이의 강한 팔을 때렸어요  
b. 아주머니가 아이의 작은 손을 잡았어요
- (66) a. 니코가 한영이를 왼팔을 때렸어요  
b. 의사가 환자를 새 팔을 붙였어요
- (67) 최근에 산 그 두 새 차
- (68) a. \* 직원이 공금을 잦은 횡령을 했어요  
b. \* 연구원이 동굴을 끊임없는 탐구를 했어요
- (69) a. 직원이 공금의 잦은 횡령을 했어요  
b. 연구원이 동굴의 끊임없는 탐구를 했어요

- (70) 미군이 도시를 항공 폭격을 했어요
- (71) a. \* (그) 손조차(도) 호석이가 아이를 잡았어요  
b. \* (그) 조사조차(도) 호석이가 증거를 했어요
- (72) a. \* 호석이가 아이를 잡은 손  
b. \* 호석이가 증거를 한 조사
- (73) a. 그 아이조차(도) 호석이가 손을 잡았어요  
b. 그 증거조차(도) 호석이가 조사를 했어요
- (74) a. 호석이가 손을 잡은 아이  
b. 호석이가 조사를 한 증거
- (75) 연구원이 동굴을 탐구를 끝내지 않았다
- (76) 아주머니가 아이를 손을 잡지 않았다
- (77) 남준이가 문장을 말을 했다
- (80) 연구원이 동굴을 탐구를 끝냈다
- (93) 니코가 한영이를 손을 잡았다
- (100) 남준이가 문장을 말을 했다
- (103) a. 연구원이 동굴을 탐구를 끝냈다  
b. 니코가 한영이를 손을 잡았다
- (106) a. 직원이 자주 공금(을) 횡령했어요  
b. 직원의 잦은 공금(의) 횡령
- (107) a. 직원이 공금\*(을) 자주 횡령했어요  
b. 직원의 공금\*(의) 잦은 횡령
- (109) a. 미국으로부터의 편지  
b. 춤스키와의 인터뷰  
c. 세 권의 책  
d. 대부분의 사람
- (110) 다훈이의 세 권의 책

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