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Icelandic nominalizations and allosemy

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Chapter 1
Introduction

1.1 Basic issues in nominalizations

Two foundational observations about deverbal 'event' nominalizations are their systematic ambiguity, and their apparent ability to inherit argument structure from their verbal base (cf. Grimshaw 1990). First, the ambiguity refers to the fact that deverbal event nouns systematically have three readings: complex event, simple event, and referential/entity, with no morphological distinction between the three.

(1) a. **Complex Event Nominal (CEN)**: The detective's **examination** of the evidence took a long time.
     b. **Simple Event Nominal (SEN)**: The **examination** took a look time.
     c. **Result/Referential Nominal (RN)**: The **examination** was on the table.

While the distinction between CENs and SENs may be debatable—we return to this below—Lieber (2017) points out an interesting generalization about nominalizing affixes in English. For every affix that can form an event noun from a verb, including *-ing*, *-ation*, *-ment*, *-al*, etc., that affix will also be able to form some kind of referential noun from a verb. I will refer to this as Lieber's Generalization. Thus, there is a systematic ambiguity of form that goes beyond the properties of any individual affix (as identified by morphophonology).

Second, when a noun has the CEN reading, it generally seems to inherit its argument structure from the verb. Consider the examples in (2).

(2) a. The teacher examined {the evidence / #the students}.
     b. the teacher's examination of {the evidence / #the students}

For many speakers, myself included, the verb *examine* cannot mean 'administer an exam to someone'. Therefore, *the students* in (2a) is infelicitous, as it can only mean that the teacher looked at the students closely, perhaps with a magnifying glass. This meaning is inherited by the nominalization *examination* in (2b). Even if one rejects the distinction between SEN and CEN readings, it remains that deverbal event nouns, when they have argument structure, inherit that argument structure from the corresponding verb. Even more strikingly, as we will discuss below, Borer (2014) has argued that nouns with a CEN reading are always derived from an existing, attested, morphologically-related verb. I will refer to this as Borer's Generalization, which, along with inheritance more generally, suggests that the CEN reading of a nominal depends in some way on the derivational history of that nominal.

I contend that there is a general tension between these two foundational observations. On the one hand, the systematic ambiguity suggests that all three readings should come from the same structure (cf. Melloni 2010, 163). If they did not, then the apparent "ambiguity" would really stem from the fact that the morphology happens to not reflect the structural distinction deriving the difference. But this would be at odds with the fact that it is found across so many languages, with so many different morphological properties, and even across many different affixes within the same language. On the other hand, argument structure inheritance suggests

that that structure should contain verbal argument structure. But argument structure is lacking in the SEN and RN readings, and it seems highly counterintuitive to propose that the argument structure information is simply lost or ignored in these readings. Thus, researchers have been led to propose different structures for the different readings. But this approach makes the ambiguity something of an accident; it is the result of the "extra structure" being systematically unpronounced.

In this book, I aim to develop an approach to nominalization that resolves this general tension. First, I propose deverbal nouns, even in the CEN reading, are built by combining heads directly, rather than by nominalizing whole verb phrases, as is often proposed. Second, I argue that this is possible if we recognize that categorizing heads can be subject to (contextual) allosemy, determined in semantics. Specifically, v and n heads can get contentful or zero interpretations, in a one-to-many relation from syntax to semantics. But the determination of this interpretation is entirely in the semantics, so the morphology is not sensitive to it. This is why the resulting form is ambiguous: the morphological form of a structure is determined in a way that does not have access to information about how the semantics used that structure. All readings are built off of the same structure, but (some) argument structure can be inherited when v takes a contentful interpretation. Borer's Generalization follows from the claim that CEN readings are fundamentally verbal meanings, so nouns that have such meanings must be derived from a structure that contains a verb, syntactically. Lieber's Generalization follows because for a deverbal nominalizing affix to get an event reading, it must be the realization of a structure where a noun is built off of a verb. But once the affix in question is understood to realize that structure, the same structure can correspond RN readings in the semantics.

In this introductory chapter, I will frame the issues surrounding nominalizations, introduce the basic proposal to be defended, and provide the necessary background information on the theoretical framework adopted here, and on the points of Icelandic syntax that need to be understood in order to follow the argumentation in the chapters that follow.

1.2 Three basic approaches

In this section, I outline three basic approaches to nominalization within Distributed Morphology, which I refer to as the Parallel Structure, Phrasal Layering, and Complex Head analysis. The latter is what I will be arguing in favor of in this book, and it combines aspects of both the Parallel Structure and the Phrasal Layering analyses.

1.2.1 Parallel Structures analysis

The Parallel Structures kind of analysis goes back to Chomsky (1970), who was responding in part to Lees (1960) and the rising Generative Semantics movement. Chomsky (1970) argued against the idea that noun phrases like *their destruction of the city* were connected to sentences like *They destroyed the city* by a transformation, which derived the former directly from the latter. Instead, Chomsky (1970) argued, the connection between the verbs and nouns was that both projected an XP with a subject position and a complement position.

(3)   a.   VP   b.   NP
           John   V′   John's   N′
                    V   the city   N   of the city
                  destroy   destruction

This is often regarded as the start of the "lexicalist hypothesis", the idea that word formation takes place in a component of grammar (the lexicon) that is separate from the syntax. However, Marantz (1997) argues that the take home point of Chomsky (1970), viewed from a contemporary theoretical perspective should not that 'nominalizations are idiosyncratic, so that they should be handled in the lexicon'. Nominalizations themselves are not idiosyncratic; they are systematic. "What's idiosyncratic is the relationship between the nominalizations and any 'sentence' they might be derived from" (Marantz, 1997, 215). Updating Chomsky's idea to current assumptions in the Minimalist Program (MP) and Distributed Morphology (DM), the idea is that the lexical root and its argument structure is category-neutral: we derive both the verb and the noun in parallel from the same category-neutral root:

(4) John destroyed the city.

(5) John's destruction of the city.

The general idea is that the ambiguity of nouns stems in part from the fact that arguments are obligatory with verbs, but optional with nouns. When arguments are present, their interpretation is the same whether they are in a noun phrase or a verb phrase. When arguments are absent—only possible with nouns—other interpretations of the root are available. As for the morphology, the specific forms are read off of the structure, so that the root $\sqrt{\text{DESTR-}}$ is pronounced as *destroy* in the context of v, and as *destruction* in the context of n. In the nominal environment, *of*-insertion occurs in order to license or case-mark the complement (something nouns cannot do on their own). Voice or v licenses the object in the verbal environment.

There are a number of problems with this general approach. First, nominalizations can contain verbalizing morphology, such as the *-ify* in *solid-ify* and *solid-ifi-cation*. Within DM, this forces the conclusion that there is a verbalizing head in the structure, so at best not all nominalizations can be derived in parallel from a category-neutral root: at least some must be derived from an explicitly verbal base (Alexiadou, 2009; Harley, 2009b). Second, the approach under-appreciates the ambiguity: as we will see below, it is not the case that arguments are generally optional with nouns; in the CEN reading, they may be obligatory. 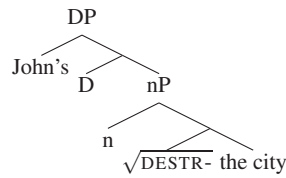Third, the approach fails to derive Borer's Generalization, mentioned above: there is no reason that the existence of the verbal structure should have any effect on the readings available to the nominal structure (Borer, 2014).

Nevertheless, I will argue below in favor of an approach that adopts certain aspects of the Parallel Structures approach. Essentially, nominals will be derived explicitly from categorized verbs, and this will allow them to inherit eventive meaning and the internal argument. Above that, however, argument structure will be computed in parallel, so that the set of available external argument meanings will be computed in the nominal domain in a manner parallel to how they are computed in the verbal domain. Before turning to this, however, I first turn to the Phrasal Layering analysis.

1.2.2 Phrasal Layering analysis

The Phrasal Layering analysis is an alternative to the Parallel Structures analysis and addresses the shortcomings of the latter. Much of the work stems from the by now classic work of Grimshaw 1990, who argued that in fact, arguments are not optional with nouns. Instead, derived nominals are systematically ambiguous, and come in three distinct readings.

(6)　a.　**Complex Event Nominals (CENs)** denote events and take arguments
　　　b.　**Simple Event Nominals (SENs)** denote events and cannot take arguments

      c.   **Referring Nominals (RNs)** denote entities and cannot take arguments

A variety of properties cluster together with these classes. For now, I set aside SENs, which I will return to below.

(7)   Some differences between RNs and CENs (Alexiadou & Grimshaw, 2008)

RNs	CENs
a. Non-θ-assigner, No obligatory arguments[1]	θ-assigner, Obligatory arguments
b. No event reading	Event reading
c. No agent-oriented modifiers	Agent-oriented modifiers
d. Subjects are possessives	Subjects are arguments
e. *by* phrases are non-arguments	*by* phrases are arguments
f. No implicit argument control	Implicit argument control
g. No aspectual modifiers	Aspectual modifiers
h. Modifiers like *frequent*, *constant* only with plural	Modifiers like *frequent*, *constant* appear with singular
i. May be plural	Must be singular

The idea was that in a given use, a nominal falls under only one of these categories: any mixing of properties leads to ungrammaticality. More specifically, if we add anything that forces a CEN reading, arguments become obligatory. The internal argument must be realized overtly, and the external argument is understood to be present semantically as an implicit argument. The examples in (8)–(9) illustrate this. Without an internal argument *of*-phrase, the agentive modifier *deliberate* (a), the purpose clause (b), the agentive *by*-phrase (c), and the telic aspectual PP (d) are ungrammatical. With the *of*-phrase, they are perfectly acceptable.

(8)   a.   * Mary's deliberate collection.

        b.   * The collection to document the disappearance of mushrooms.

        c.   * The examination by the teacher.

        d.   * The destruction in a day.

(9)   a.   Mary's deliberate collection of illegal data cost her the job.

        b.   Mary's collection of samples to document the disappearance of mushrooms.

        c.   The examination of the student by the teacher.

        d.   The destruction of the city in a day.

I should add immediately that these diagnostics are not as clear cut as some discussions would lead us to expect. Lieber (2017) offers counter-examples to many of them, and other counter-examples are noted elsewhere. For example, some CENs may be plural, modifiers like *frequent* may appear with singular RNs in some cases, RNs may take arguments, etc. We return to many of these below. Nevertheless, I maintain in this work, along with much contemporary work, that the distinction is real, and it is the diagnostics that are sometimes imperfect identifiers of the distinction. I note, for example, that to my knowledge, no one has provided convincing counter-examples to the claim that telicity PPs (such as *in a day* in (8)) occur without an internal argument. The sharpness of the contrast between (8d) and (9d) along with the absence of attested, acceptable examples like (8d) support the conclusion that the distinction between CENs and the other categories is a real one: when truly, unambiguously verbal event structure is present, arguments are obligatory in the noun phrase just like they are in the verb phrase.

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[1] Note that arguments are sometimes possible with RNs. Alexiadou (2001, 13–14) gives examples like *the discussion of the data (was published in a journal)*, and Melloni (2010, 146) gives examples like *the translation of the essay (was on the table)*. Arguments of this sort tend to be optional, and are not possible with all derived nouns. Grimshaw (1990) suggested that such cases are really adjuncts, pointing to the fact that they can be split from the head, as in *Guðrún's performance was of this song, not that song.*

Nothing in the Parallel Structures story explains why event structure should correspond to argument realization in this way. In a theory like DM, there should be some account of this correlation between syntax and semantics. Various researchers have thus proposed versions of what I will call the 'Phrasal Layering' analysis (Borer 1997, 2012, 2013, 2014; Roeper & van Hout 1999, 2009; Fu et al. 2001; Alexiadou 2001, 2017b; Roßdeutscher & Kamp 2010; Bruening 2013 and Pross 2019). Alexiadou (2001), for example, proposed that event structure semantics corresponds to verbal structure. To inherit event structure is to attach on top of verbal structure. By attaching on top of verbal structure, argument structure is inherited, precisely because that verbal structure would have already projected its arguments. A CEN would have a structure like (10) while an RN would have a structure like (11).[2]

(10)   **CEN**
          nP
        /   \
      n   AspP
   -tion   /   \
          Asp   VoiceP
                /   \
            Voice   vP
                      /   \
          mushrooms   v′
                          /   \
                         v   √COLLECT

(11)   **RN**
          nP
        /   \
      n   √COLLECT
   -tion

The n head could in principle attach at any level, inheriting more or fewer verbal properties. Alexiadou (2017a) argues that for CENs, n must attach at least as high as vP in order to inherit argument and event structure. When the agent is present, Voice is in the structure as well. Authors vary as to whether they assume that the Voice in nominalizations is active, introducing an argument (possibly null) in its specifier, or passive/unaccusative. Like the Parallel Structures analysis, object is generally assumed to be licensed by n, which is realized as "genitive *of*" as the unmarked case (or else *of* is inserted in order to license the object), and the Saxon genitive is licensed/conditioned by D.

This approach solves the problems noted above for the Parallel Structures analysis. First, the presence of verbalizing morphology is unproblematic, since CENs are built on top of full verb phrases.[3] Second, the ambiguity is derived as a structural ambiguity: arguments are truly obligatory in the CEN reading because to derive that reading, an entire verb phrase—which already has its arguments—is what is nominalized. Third, the approach derived Borer's Generalization for the same reason: CEN readings are built on verb phrases, so any CEN noun must correspond to an existing, morphologically related verb.

However, it also raises some problems of its own. First, and most central to the intuition driving this book, there is a sense in which we lose the systematic ambiguity of derived nominals. It emerges as an accident of the fact that Voice, Asp, or even v happen to be null. Second, there is no natural account of why nominalizations are restricted in the ways that led Chomsky (1970) to propose that they are not derived by transformation in the first place. For example, we would expect ECM, double object constructions, and the like, to be able to feed nominalization. Third, we will see in chapters 3 and 4 of this book that the Phrasal Layering analysis faces several major problems in accounting for the properties of Icelandic nominalization.

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[2] Note that Alexiadou has made slightly different proposals in different works; (10)–(11) is based on Alexiadou (2017b). Alexiadou (2009), for example, proposes that RNs and SENs both have a v layer, but only CENs have Voice. Alexiadou (2017b) argues that deverbal synthetic compounds have Voice but not Asp, while nominalizations with phrasal arguments have Asp as well; this accounts for differences between the two, such as the fact that synthetic compounds do not license telicity PPs such as *in a day*.

[3] The presence of verbalizing morphology on RNs is still problematic, and it is for this reason that Alexiadou (2009) and Harley (2009b) argued that even RNs may be built on verb phrases. That approach, however, involves the complication that verb phrases may be allowed to have no eventive meaning and take no arguments, just in these cases. Borer (2012, 2013, 2014) avoids this problem by proposing that verbalizing morphology is purely pleonastic, having no direct connection to event structure or argument structure.

To preview what lies ahead, these problem include (a) the failure of case-inheritance, particularly (though not exclusively) with dative themes, (b) the difficulty of extending the account of English *of*-PPs to Icelandic *á*-PPs, (c) the nominalization of 'deponent' *-st* verbs, and (d) the range of patterns involving the between P-prefixation, nominalization, and idiosyncratic meaning.

The present approach, which is presented in the next section, does adopt some aspects of the Phrasal Layering approach. Most importantly, I adopt the assumption underlying this approach that the CEN reading stems from a specifically verbal kind of event meaning. Thus, the CEN reading is derived from a verb (though not a verb phrase). I now present a basic overview of this approach, which will be defended at length throughout the remainder of this book.

1.2.3 Complex Head Analysis

In this book, I argue that nominalizations are systematically ambiguous, but that all three readings should stem from one structure. In particular, I propose that we combine the verbal and nominal heads directly, without their dependents. The basic structure of all readings will be as shown (12).

(12)

```
                    PossP
                  /      \
         (GENITIVE)      Poss′
                        /     \
                     Poss      nP
                             /    \
                            n   (PP COMPLEMENT)
                          /  \
                         v    n
                        / \
                   √ROOT   v
```

In this structure, what is nominalized is a verb, but there is no verb phrase: the phrasal syntax is entirely nominal. The absence of certain verbal structures, such as ECM or double object constructions, stem from the range of complements that nouns may take. In chapters 3 and 4, we will see how this structure accounts for the Icelandic-specific problems for the Phrasal Layering kind of analysis.

As for the ambiguity, the basic idea is that the v and n heads can get different interpretations; when v gets is usual meaning (the meaning it gets in the context of a verb phrase) and n is an identity function (essentially semantically null), the noun has the exact meaning that a verb would have; event structure and the internal argument meaning is inherited. However, beyond this, argument structure is constructed in a manner similar to what was assumed for the Parallel Structures analysis. In particular, the external argument meaning is not inherited, but it is constructed in the same way that it would be in a verb phrase. Poss is parallel to Voice; when an nP has the same meaning a vP would have, Poss may introduce the same meaning (e.g. "agent") that Voice would have introduced.

However, the presence of n may allow for the introduction of meanings that would not otherwise be available. In particular, v may be an identity function (semantically null), and then n will combine semantically directly with the root. This derives the RN and SEN readings, and the variety of RN and SEN readings will stem from different allosemes of n and the interaction of those allosemes with the meaning of the root.

This overall approach has, as far as I know, not been proposed before, so one might wonder why not. I suggest that there are several reasons for this, stemming from the kinds of theoretical assumptions one must make to make the account go through. These assumptions are independently justified, but not uncontroversial, and some have developed quite recently.

First, the account requires that complex heads can be built directly, without first building phrases. It has often been assumed that complex heads are only built through head movement, which, if true, would undermine

the present account. However, there is no reason to assume this. If we assume that complex heads are formed by adjunction in head movement, what would require that this operation only applies to elements embedded in a phrase? Even more generally, if adjunction is a phrase-structurally distinct kind of merge, there is no reason it shouldn't be able to apply to two heads in a workspace. Embick (2004) independently argues that roots may adjoin directly to v, without ever occupying a phrasal position.

Second, much previous work in the present tradition has assumed that roots originate in various places in the structure (Hale & Keyser, 1993, 2002; Harley, 2014; Marantz, 2009a,b, 2013a; Irwin, 2012; Wood, 2012, 2015). The present analysis restricts the possibility quite a bit. While there may be some possibility of putting roots in different places, it would complicate the analysis quite a bit.[4] I will assume that the root always adjoins to v, and never originates in a phrasal position. This has been proposed quite independently of the current empirical context (Marantz, 2013b), but is not necessarily straightforward or uncontroversial.

Third, the present account requires a departure from the strictest sense of the intuition underlying UTAH, the idea that thematic interpretation is in a one-to-one mapping with syntactic position. The general rigidity of the set of principles surrounding UTAH, D-structure, etc., has driven much previous and current research. Here, however, a thematic interpretation can be introduced in one place and saturated in another, something that Myler (2014, 2016) refers to as 'Delayed Gratification'. Delayed Gratification isn't a special process or rule; it is nothing more than allowing UTAH-like effects to stem from the semantic interpretation of heads, and allowing semantic composition to proceed in a fairly straightforward way. Instead of saying that agents must be introduced in SpecVoiceP, we say that agentive semantics are introduced by the Voice head. Such semantics may be saturated by an argument in SpecVoiceP, but need not be (see Sigurðsson 2017a for extensive discussion of Voice semantics).

Finally, and most crucially, the present account requires systematic late insertion of the semantics of heads like v and n—what I am calling allosemy. Allosemy of roots has a longer tradition, going back to Arad (2003, 2005), but was only later applied to functional heads like Voice, Appl, v, Poss, p, etc. (Wood, 2012, 2015, 2016; Marantz, 2013a; Myler, 2014, 2016; Kastner, 2016, 2017; Wood & Marantz, 2017; Nie, submitted; Oseki, submitted). Thus, when Borer (2014) argues forcefully that argument structure cannot be a property of verbs or verbalizers, it is based on the observation that deverbal nouns sometimes have no argument structure. Her argumentation depends on the notion that one syntactic v head cannot correspond to several different meanings, the way that one syntactic v head can correspond to several different allomorphs (*-ize*, *-ify*, etc.).

Simply put, this collection of assumptions has not been combined in the past, so accounts like the one in this book have not been put forward. But all of the above assumptions are justified. There is no reason that heads cannot adjoin to other heads. It is fully conceivable and reasonable that roots may generally adjoin to categorizing heads rather than originate in different phrase structural positions. The recasting of UTAH-like effects as the consequence of the interpretation of heads and their ordinary semantic composition is independently motivated, as is the assumption that functional heads are subject to allosemy. The resulting overall model of grammar is quite simple: syntax combines primitives into complex structures, and those structures are interpreted in similar ways at PF and LF: they are underspecified, with allomorphy determining the formatives for pronouncing structure and allosemy determining the formatives for interpreting structure. After that, it is phonology and semantics as they are generally understood. Complexity emerges from the interaction of these simple parts, not from the parts themselves.

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[4] For example, if the root originates in the complement of a verb, the present analysis may entail that the same root will originate in the complement of a noun. But then, the root in the latter case will have to raise to the n head, rather than the v head, deriving a different constituency from the verb, making potentially distinct predictions for the morphology.

1.2.4 Why Icelandic nominalizations?

Icelandic nominalizations have been the subject of much less research than nominalizations in many other languages, and much less than other phenomena in Icelandic.[5] One reason for this may be that Icelandic nominalizations are in a sense less productive than nominalizations found in other languages. The language has nothing like *-ing* gerunds or *-ing of* nominals in English, or *-ung* nominals in German. Its nominalization system in fact resembles, in some ways, English if English lacked *-ing* completely, and was forced to use only *-ation*, *-ment*, *-al*, etc. This raises the question of why Icelandic in particular is theoretically interesting? Wouldn't we be able to draw more general and penetrating conclusions about language broadly speaking by focusing on languages with fully productive nominalization systems?[6]

In fact, there are a few reasons why Icelandic nominalizations are of substantial interest to a general theory of language. Firstly, its case system allows us to ask questions which cannot be answered in the same way with other languages. In particular, the existence of dative themes that can correspond to genitives in nominalizations makes it unlike German, and provides an important argument in favor of the proposal to derive complex event nominals without building any verb phrase. The arguments in chapter 3 more generally stem not from something special about Icelandic nominalization, but from specific properties of Icelandic grammar in general that cannot be tested in other languages.

Secondly, the fact that Icelandic builds Complex Event Nominals in the way that it does directly bears on the argumentation surrounding nominalization more generally. Strong claims have been made about how argument structure inheritance works from layering perspective. Consider the following quote from Borer:

> "...argument structure and arguments, both internal and external [...] emerge from the presence of [...] functional projections which are associated with the verbal extended projection."

> (Borer, 2014, 75)

Her claim is that argument structure itself must come not from a verb, but from a verb phrase. Inheritance of argument structure therefore must come from nominalizing verb *phrases*, not verbs. This is not just her perspective: the general idea behind Phrasal Layering analyses is that argument structure inheritance looks the way it does *because* what is being nominalized is—and in fact, must be—a verb phrase that already has its arguments.

Now, it is possible that layering patterns do exist, where a single affix can attach "high" and form a gerund, but also "low" and form a Result/Referring Noun. A clear case illustrating this is at least some examples of English *-ing*:

(13) a. Her timing the race (bothered her rivals)
       b. It is important to have good timing.

However, if the argumentation in this book is on the right track, then Icelandic shows that Phrasal Layering is not the only way to build CENs, inherit arguments, and so on. There must then be some other way of deriving argument structure inheritance and the systematic ambiguity of derived nominals. But if there is some other way, then we should be led to reconsider many other cases, especially those nominals with a CEN/RN ambiguity.

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[5] Some theoretically-grounded work that focuses or at least touches in a meaningful way on Icelandic nominalizations (including compounding) include Indriðason (1999), Maling (2001), Bjarnadóttir (2005), Ingason & Sigurðsson (2015), Ingason (2016), and Harðarson (2017, 2018), but the study with the most detail in connection with the present work is Jóhannsdóttir (1995).

[6] It is worth pointing out, however, that Icelandic still does have a very robust system of nominalizations, with many nominalizing affixes building the same kinds of nominals. When we abstract away from particular affixes, the extent to which it is less productive mainly has to do with the fact that the relationship between particular verbs and their nominalized forms is somewhat unpredictable, along with the fact that some verbs seem to allow no event nominals to be derived from them at all.

1.3 Proposal

1.3.1 (Contextual) Allosemy

In this section, I first show how allosemy works, deriving the three basic readings of a derived nominal (all while staying at the level of the complex head). Essentially, the v and n heads can get different interpretations (suppletive allosemes), and crucially for our purposes, either the v head or the n head can can be "semantically Ø" (a type-neutral identity function). The former case derives referring nominals and simple event nominals, while the latter case derives complex event nominals.[7]

I now turn to the ambiguity of nominalizations, and show how it can be derived from a single structure. First, consider the general ambiguity problem: the alternation between these three readings (CEN, SEN, RN) is systematic across a range of affixes.

(14) **Morphology**   *-ation*   *-ment*   *-al*   *Forms*

      Semantics S-EVENT   ENTITY   C-EVENT *Meanings*

Typically, work in DM assumes that the mapping to morphology is one-to-many, but the mapping to semantics is determined by flavors of meaning, e.g. subcategories of v, n, a, etc. However, this view only gets us part of the way: it explains why any given meaning has multiple affixes, but it doesn't explain why the same meanings get the same set of affixes.[8]

(15) **Morphology**   *-ation*   *-ment*   *-al*   *Allomorphy*

      Syntax $n_{\text{s-event}}$ n_{entity} $n_{\text{c-event}}$

      Semantics   S-EVENT   ENTITY   C-EVENT   *Allosemy*

The proposal I defend in this work (and elsewhere) is that we extend late insertion to the semantic side, where the denotations of functional heads like v, n, Voice, Appl, etc., are determined post-syntactically. I refer to this as allosemy, which is treated essentially along the lines of suppletive allomorphy. When the syntactic or semantic context restricts the available set of allosemes, this is contextual allosemy (again, like contextual allomorphy). I will discuss cases of contextual allosemy in some detail in chapter 4.

(16) **Morphology**   *-ation*   *-ment*   *-al*   *Allomorphy*

      Syntax   (n)

      Semantics   EVENT   ENTITY   -Ø/IDENTITY-F   *Allosemy*

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[7] As we will see in later chapters, some RN readings can arise when both v and n get a non-null interpretation.

[8] This is only a schematic representation, not any one specific proposal. This kind of reasoning has been applied most frequently to verbs; see Harley (2009b) for a discussion of the many-to-many mapping between flavors of v and overt realizations of v.

(17) **Morphology**   *-ify*   *-ize*   *-Ø*   *Allomorphy*

Syntax   ⬭ v

Semantics   ACTIVITY   CAUSE   -Ø/IDENTITY-F   *Allosemy*

What is crucial to the analysis of nominalizations is that either n or v can be semantically Ø (technically, a type-neutral identity function).[9] The morphology, however, is insensitive to the choice made at semantics, and vice-versa. This is how the systematic ambiguity is built and derived by the system with the complex heads analysis.

The basic structure of an event nominalization defended here is (18).

(18)   n
              ⟋⟍
            v   n
        ⟋⟍
     √ROOT v

The CEN reading is derived when v is interpreted as an ordinary verb (i.e., as it would be interpreted in a vP) and n is interpreted as Ø. This means that the derived noun means the same thing as the verb. However, given the existence of semantically Ø v, there is another way to interpret this structure: v can be semantically Ø, and n gets a contentful interpretation. This contentful interpretation can refer to a concrete object or an event.[10]

(19)   CEN Reading   (20)   SEN Reading   (21)   RN Reading

            n   n   n
        ⟋⟍   ⟋⟍   ⟋⟍
      v   n   v   n   v   n
    ⟋⟍   Ø   ⟋⟍   EVENT   ⟋⟍ ENTITY
  √ROOT v   √ROOT v   √ROOT v
       EVENT   Ø   Ø

One might wonder, at this point, why I am attributing the eventive meaning of the SEN reading to n rather than v. First of all, it is worth remembering that we already know that nouns can introduce eventive meaning: simple, nonderived nouns like *trip* or *party* are examples of this. So there is nothing that should restrict the system from making use of these denotations in the case of deverbal nouns with a Ø v head. Second, and more importantly, the SEN readings of derived nouns do not necessarily correspond to existing verbal meanings, in stark contrast to the CEN readings. Consider the sentences in (22). As mentioned earlier, for many speakers, myself included, *examine* in (22a) cannot mean 'administered an exam to the students', the way the verb *test* can. It can only mean that the subject inspected the students closely, such as looking at them with a magnifying glass. The CEN reading of *examination*, shown in (22b), inherits this meaning; the underived event noun *test* cannot form a CEN. However, the SEN reading of *examination*, shown in (22c), can easily refer to the event of students (or someone) taking an exam, just like the underived event noun *test*.
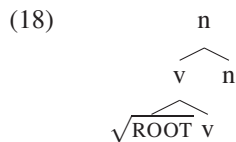
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[9] Semantically Ø v was proposed for certain Greek participles by Anagnostopoulou & Samioti (2009, 2014); Anagnostopoulou (2012), although they treated it as a separate category v_C, distinct from eventive v_E, and not as allosemy. Marantz (2013a), Myler (2014, 2016) and Wood & Marantz (2017) propose a semantically Ø v as allosemy. For allosemy of other heads, such as Voice, Appl, p, etc., see Wood (2012, 2015, 2016); Marantz (2013a); Myler (2014, 2016); Wood & Marantz (2017); Kastner (2016, 2017); Nie (submitted) and Oseki (submitted). For related ideas, see Ingason & Sigurðsson (2015).

[10] There is a third option, which is that both v and n get a contentful interpretation; see discussion in chapter 6 below.

(22)   a.   They { tested / # examined } the students.

       b.   their { *test / # examination } of the students   CEN

       c.   The { test / examination } lasted all day.   SEN

This suggests that the SEN reading is not derived from the verbal reading, but instead stems from the general fact that n is able to introduce an eventive meaning. The relationship between the noun *test* and the verb *test* is that the same root can adjoin to either a v or n head. When the verb *test* adjoins to an n head, that head is pronounced as *-ing*.

(23)   a.   v   b.   n   c.   n

             √TEST v   √TEST n   v   n

                                                    √TEST v   *-ing*

The root-derived noun in (23b) has an eventive meaning, as shown in (22c). No verb or v head is needed for this meaning; the n head itself can introduce the eventive meaning—but it is the SEN reading, not the CEN reading, as shown in (22b). The noun *examination* is derived from a verb, but uses the same basic n head meaning in (22c); the structure and meaning is what is illustrated in (20). The CEN reading, on the other hand, stems specifically from the kind of eventive meaning introduced by the v head, and this meaning is inherited by the noun when the n head is semantically null, as in (19). As we will see below, I will follow Roy & Soare (2013) in assuming that the SEN reading involves not an event variable of type s, but rather a subtype of entity, of type e. Root interpretation can be sensitive to this distinction.

   This overall approach derives the two related, but distinct generalizations about the ambiguity mentioned above and repeated here.[11]

(24)   a.   **Borer's Generalization**: Complex Event Nominals are always built off of an existing verb
            with the same meaning (Borer, 2014).

       b.   **Lieber's Generalization**: Every nominalizing affix that has an eventive meaning also has one
            or more referential meanings (Lieber, 2017).

Borer's Generalization follows because CEN meaning is built off of the existing verb; if the meaning is available in a nominal context, it will be available in a verbal complex. Lieber's Generalization follows because once (18) is the structure of a CEN (so an eventive meaning is available), there is nothing to stop that same structure from getting the SEN or RN reading. Since the morphological realization happens "out of view" of the semantics, the distinction between, say, *-ment* and *-ation* is not sensitive to the allosemes chosen for v or n.[12] It does not mean that every root will allow the SEN or RN reading—rules of contextual allosemy and semantic compatibility will limit the availability of the three readings with specific roots. But since the structure in (18) can be interpreted as an SEN or RN, any nominalizing affixes that realize the n head of a CEN will be available for SEN/RN readings as well.

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[11] Melloni (2010, 162) discusses (what I am calling) Borer's Generalization in a different context. Discussing the polysemy patterns of simple, underived nominals as compared to nominals derived from verbs, she generally emphasizes that the patterns of the two kinds of nouns are the same. However, she points out that only deverbal nominals have complex event structure. According to Harley (2009b, 340), this observation is attributed by Grimshaw to Zucchi.

[12] I am sometimes asked how this kind of model should be understood in terms of parsing, comprehension, production, etc. The present theory is not a theory of these things. However, a reasonable way to interpret parsing and comprehension would be that the hearer uses the phonetic input to parse a phonological and morphosyntactic structure, and that structure serves as the input to semantic interpretation. The idea here would be that once the phonetic signal is used to infer a syntactic structure, the phonemic and morphemic information that led to that inference is no longer needed, and so it is discarded.

1.3.2 The syntax-semantics interface

The model of the grammar adopted and developed in this book assumes that there are a number of steps required to map a syntactic structure to a semantic representation, and several of these steps are similar to how that same structure is mapped to a morphophonological representation. First, there is vocabulary insertion for suppletive allosemy, as described above. This step involves mapping terminal nodes in the syntax to typed semantic functions, represented with lambda operators and variables. Second, there are rules of coercion and typeshifting, which modify existing semantic representations to fit their contexts. Third, there are basic rules of composition, allowing semantic formulas to combine with other semantic formulas, including Function Application, Function Composition, Predicate Composition, Event Identification, etc. There are also, as we will see, certain kinds of "default" rules, such as a rule that interprets the juxtaposition of an event and a state as causation. This is discussed more explicitly in chapter 5.

1.3.2.1 Zeros and pruning

There are many examples of allosemy, here and elsewhere, that involve inserting semantic zeros into functional heads. This is often described as being the same as inserting a type-neutral identity function. For most cases I am aware of, treating semantic zeros in this way is perfectly fine. However, in the literature on morphology, it has been noted that morphological zeros are often more than simply morphemes that happen to have no phonological features. Instead, they can have a bearing on allomorph selection and phonological processes which suggests that it matters that they are not just zero, but actually not there. Embick (2010) explicitly proposed that zeros are pruned from the structure, so that if there is a morpheme sequence consisting of X-Y-Z, and Y is Ø, then it will be removed from the structure entirely, and X will attach directly to Z.

In some of what follows, it will make a crucial difference that we assume that semantic zeros are pruned from the structure as well. As I will argue in detail below, a Complex Event Noun (CEN) has an interpretation where the n head and the P head of its PP complement are both interpreted as semantically zero. If we assume pruning takes place at this point, the node interpreted as zero will be deleted, and the semantics will proceed as if it is not there.

(25)   a.   [tree diagram showing nP with n and PP nodes]   b.   [tree diagram]   c.   [tree diagram]

Similarly, I will propose that RNs (and SENs) have an interpretation where the v head is semantically zero. If we assume pruning, then this means that the v head is deleted and the n combines with the root directly.

(26)   a.   [tree diagram showing n with v and n nodes]   b.   [tree diagram]   c.   [tree diagram]

Much of the time, it may not matter whether one assumes pruning or not. However, where it seems to matter in the present study has to do especially with the interpretation of roots. For example, it will be important that for the SEN and RN readings, there is no event variable at the level of v. However, in some cases, the root will need to introduce an event variable at the n level, in order to be integrated semantically. However, if we assumed that n triggers the root to introduce its event variable, than without pruning, the v will have this event variable too. Semantically, then, it is important that the zeros are pruned. Then by the time the root is triggered to introduce a variable, it will be combining directly with n and v will be out of the picture.

1.3.2.2 Semantic types

I assume a basic type-theoretic system of semantic composition, with the following basic types, along with the variables I typically use to express them (which I will keep fairly consistent for expositional clarity).

(27)

Type	Abbreviation	Typical variables
Entity	e	x, y, z
Event	s_e	e, e′, e″
State	s_s	s, s′, s″
Truth value	t	—

In addition, I assume that functions are also types, and I use a capital P to indicate such functions, subscripted with abbreviations to indicate what the function is. So, for example, $P_{\langle s_e, t\rangle}$ is a function from events to truth values. Note that I do not, in this work, make use of degree variables, time variables, or other kinds of variables; I assume that these are all in principle compatible with the claims made here.[13]

It is worth explicitly pointing out that I assume that there is a distinction between the type-system in the meta-language and the objects that variables can point to in the model. For example, I assume that events and states are both subtypes of eventualities, and that an eventuality is a subtype of entity. Entities can be concrete or abstract, and objects of type e can point to events, concrete objects, states, etc. Therefore, an object of type e or an object of type s_e could in principle point to the same event in the model. However, compositionally, it is possible for a function to require something of type s_e; in such cases, anything in the formula that is type e, even if it happens to point to an event in the model, will not be a possible input for that function.

Importantly, I assume that semantic formulas can contain an identity relation that associates variables of different types. For example, Pylkkänen (2008) argues that external argument causers are related to implicit causing events by such a relation. Consider her analysis of a Japanese lexical causative like (28a), as shown in (28b).[14]

(28) a. Sensoo-ga Taroo-o   sin-ase-ta.
          war-NOM Taro-ACC die-CAUSE-PAST
          'The war caused Taro to die.'

---

[13] In fact, I hope to make it clear throughout that the primary contribution of this work is not connected with the specifics of the semantic formulas themselves, but on the relationship between these formulas—whatever they happen to be—and the syntactic structure. I can imagine numerous ways of altering the semantics, or the assumptions about what the model and/or typing system is like, that would be fully compatible with the core claims of this work. (For example, one could attempt to fit a DRT model of event semantics along the lines of Roßdeutscher & Kamp (2010) or Pross (2019) to the present claims about syntactic structure and allosemy, although those specific proposals as they stand are not compatible with the syntactic structure proposed here.) The idea is to give something precise enough to show how the system works, especially with respect to allosemy and syntax. Certain claims, like the idea that some nodes have "semantically zero" allosemes, are central to the present proposal. I will try to make it clear throughout what is central to the proposal, and what is adopted for the purposes of precision, convenience and simplicity.

[14] Here I replace her "CauseP" with vP, and gloss over the internal structure of that vP.

b.   VoiceP
                $\lambda e \exists e'.$
                dying(e')
              & theme(e',Taro)
               & CAUSE(e,e')
                & e=the war

        DP   Voice$'$
      the war $\lambda x \lambda e \exists e'.$
                       dying(e')
                     & theme(e',Taro)
                      & CAUSE(e,e')
                          & e=x

            Voice   vP
          $\lambda x \lambda e.\ e=x$ $\lambda e \exists e'.$
                              dying(e')
                            & theme(e',Taro)
                             & CAUSE(e,e')

                            cause die Taro

Here, the cause relation exists inside the vP as a relation between two event variables of type s, e and e'. Voice introduces an identity relation, specifying the causing event, by pointing to the entity x (of type e) that is identical to the causing event e (of type s_e). By assumption, the denotation of the DP 'the war' could not saturate the event variable directly, since it is of a different type. However, it can saturate an entity variable that is specified as identical to the event variable in the model. This is the sense in which the compositional system strictly respects the formal typing, even when different types can point to the same object in the model.

1.3.2.3 Composition rules

I am assuming a fairly simple set of composition rules, which include Functional Application, along with several kinds of conjunction rules. Among the conjunction rules, I distinguish what I refer to as Predicate Conjunction, which applies when two nodes have the same semantic type, and "Identification" rules, which identify a subset of variables in the range of two nodes. First, I assume the definition of Functional Application in Heim & Kratzer (1998, 44).

(29)   **Functional Application**
        If α is a branching node, {β, γ} the set of α's daughters, and $[\![\,\beta\,]\!]$ is a function whose domain contains $[\![\,\gamma\,]\!]$, then $[\![\,\alpha\,]\!] = [\![\,\beta\,]\!]([\![\,\gamma\,]\!])$.

Second, I assume a generalized kind of Predicate Conjunction as in (30) (see Wood 2015, 23).

(30)   **Predicate Conjunction**
        If α is a branching node, {β,γ} is the set of α's daughters, and $[\![\,\beta\,]\!]$ and $[\![\,\gamma\,]\!]$ are both in D_f, f a semantic type which takes n arguments, then $[\![\,\alpha\,]\!] = \lambda(a_1, \ldots, a_n).\ [\![\,\beta\,]\!](a_1, \ldots, a_n) \wedge [\![\,\gamma\,]\!](a_1, \ldots, a_n)$.

Finally, I assume two kind of identification rules.

(31) **X Identification 1**
    If α is a branching node, $\{\beta, \gamma\}$ is the set of α's daughters, where $[\![\,\beta\,]\!]$ is in $D_{\langle a, \langle b, t \rangle \rangle}$ and $[\![\,\gamma\,]\!]$ is in $D_{\langle b, t \rangle}$ (where a and b are variables for semantic types), then $[\![\,\alpha\,]\!] = \lambda a_a \lambda b_b.\, [\![\,\beta\,]\!](a)(b) \wedge [\![\,\gamma\,]\!](b)$.

(32) **X Identification 2**
    If α is a branching node, $\{\beta, \gamma\}$ is the set of α's daughters, where $[\![\,\beta\,]\!]$ is in $D_{\langle a, \langle b, t \rangle \rangle}$ and $[\![\,\gamma\,]\!]$ is in $D_{\langle a, t \rangle}$ (where a and b are variables for semantic types), then $[\![\,\alpha\,]\!] = \lambda a_a \lambda b_b.\, [\![\,\beta\,]\!](a)(b) \wedge [\![\,\gamma\,]\!](a)$.

These identification rules will cover classic "Event Identification", but are not restricted to events and individuals in a specific order. Essentially the idea is that when two nodes are combining semantically, they may conjoin the shared parts of their functions.

1.3.2.4 The interpretation of roots

In all of this, however, I distinguish the interpretation of roots from the interpretation of functional material. Despite the flexibility introduced by allosemy, typeshifting, coercion, etc., functional material is overall quite rigid and constrained. A functional head may be associated with several possible interpretations, but it will be a finite and discrete list. Roots are in general much more malleable, able to bend to the 'structural semantics' of functional elements. I assume that they have a distinct status in the syntax and semantics, in the following specific way.

It is common in DM to assume that roots need to be categorized syntactically to be licensed, and this generally means that they have to occur in the context of a category-determining head. Beyond this, it is often argued that roots do not introduce arguments or variables on their own. For example, it is thought that little v introduces the event variable, and that roots act as modifiers of the event. Other roots may modify states or entities.

However, in practice it is common to assume that roots are in fact predicates of different variables. An eventive root, for example, will be a predicate of a lambda bound event variable, e.g. $\lambda e.\ \sqrt{\text{ROOT}}(e)$. This in fact is what allows it to modify the event variable "introduced" by v. But if that is so, then roots really are introducing event variables too, and heads like v are really introducing some extra semantics on top of that. In a model-theoretic system, it seems inevitable that if roots modify events, they must themselves carry event variables.[15]

In the spirit of the idea that roots are flexible, and modify but do not really introduce different semantic types and the variables associated with them, I propose that a root is not abstracted over until it combines with something semantically. At the point of semantic composition, the root will become associated with a lambda operator and a variable, as in the following general rule.

(33) $\sqrt{\text{ROOT}} \rightarrow \lambda f_f.\ \text{root}(f)$

This rule is triggered whenever the root is semantically adjacent to a lambda formula. The type of the variable will depend on the semantics of the root (what it is inherently compatible with) and the triggering environment. For example, if the root is combining with an event-denoting v, and the root is compatible with an event variable, it may take an event variable. If the root is compatible only with some other kind of variable, it will take whatever variable it needs to, as long as the composition works out. If the root is not compatible with anything that works out semantically, the structure will not have an interpretation, and it will be judged ill-formed by speakers.

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[15] Thanks to Anton Karl Ingason for many discussions of this point.

1.4 Background on Icelandic DP structure

In this section, I provide a basic background on the Icelandic DP structure that will be assumed throughout this work, to help frame the facts discussed in the following two chapters for readers who are not familiar with the details of the Icelandic DP. Many aspects of the Icelandic DP will not be directly relevant here, so I would refer the interested reader to Julien (2005), Pfaff (2015), Ingason (2016), and Harðarson (2017) for in-depth studies of the Icelandic DP.

With some exceptions, I generally adopt or assume the system of Harðarson (2017), in which the noun phrase in (34a) would have an underlying structure along the lines of (34b).

(34)   a.   furðulegar kenningar Gísla   um   setningafræði
            bizarre   theories   Gísli.GEN about syntax
            'Gísli's bizarre theories about syntax'

       b.

φ is the locus of inflection, such as gender and number, and corresponds to NumP in some other theories. ω encodes referentiality and licenses arguments—we will not be concerned with these properties here, but what is relevant is that it serves as the layer that allows adjectival modifiers.[16] In fact, this structure as presented is distinct from Harðarson's in two ways, both having to do with nP-internal structure. First, Harðarson (2017) assumes that the root projects a phrase, and the PP is the complement of the root, whereas I assume that the root is adjoined to n, and the PP complement is the complement of this n. Second, Harðarson (2017) proposes that the position of the possessor in SpecφP is a derived position, and that the possessor originates lower, in the specifier of the root. Below, I will also assume that SpecφP is a derived position for genitive DPs, but that they originate either in SpecPossP or as the complement to the n head.

First, however, it is worth highlighting how the surface word order is derived from this basic structure. First, the head noun moves by head movement to D, stopping at φ and ω along the way. Second, the adjective phrase moves to SpecDP. The derived structure is thus (35).

---

[16] It also provides a position for the n head to move to when a demonstrative or other article occupies D, but the n head still precedes the possessor in SpecφP. Harðarson (2017) writes that it corresponds (in terms of position and function) to n and α in Julien (2005), Dx in Vangsnes (1999), and *ix* in Pfaff (2015).

(35)

```
                        DP
            ┌───────────┴───────────┐
          AP_i              ┌───────┴───────┐
        furðulegar          D              ωP
        'bizarre'        ┌──┴──┐       ┌────┴────┐
                         ω    D ⟨AP_i⟩           φP
                      ┌──┴──┐      ⟨ω⟩      ┌────┴────┐
                      φ     ω              DP  ⟨φ⟩   nP
                   ┌──┴──┐  -ar          Gísla    ┌──┴──┐
                   n     φ            'Gísli.GEN' ⟨n⟩   PP
                ┌──┴──┐ -ing                   um setningafræði
              √KENN  n                          'about syntax'
             'theory'
```

The key features to keep in mind here are as follows:

- Adjectives quite generally (though not always) move to SpecDP and thus precede the noun.
- Nouns precede possessors, but the relative order of possessors and complements remains unchanged.
- When the possessor is a full genitive DP, D is generally null, but when the possessor is a possessive pronoun, D may be realized as a suffixed article.

Illustrating the last point consider the noun phrase in (36a), which would have the derived structure shown in (36b).

(36)   a.   góðu myndir-nar mínar af Astrid
            good pictures-the my of Astrid
            'my good pictures of Astrid'   (Adapted from Harðarson, 2017, 163)

       b.

```
                        DP
            ┌───────────┴───────────┐
          AP_i              ┌───────┴───────┐
         góðu               D              ωP
         'good'          ┌──┴──┐       ┌────┴────┐
                         ω    D ⟨AP_i⟩           φP
                      ┌──┴──┐  -nar     ⟨ω⟩  ┌────┴────┐
                      φ     ω              DP  ⟨φ⟩   nP
                   ┌──┴──┐ -ir          mínar    ┌──┴──┐
                   n     φ              'my'    ⟨n⟩   PP
                ┌──┴──┐                             af Astrid
              √MYND  n                              'of Astrid'
             'picture'
```

The overtness of the article shows that the noun has moved to D (though see Ingason 2016 for cases that he analyzes as involving lowering of D to the noun). While it is frequently argued that the adjective and the noun move together as a constituent to SpecDP (Julien, 2005; Sigurðsson, 2006; Wood, 2009a; Pfaff, 2015), Harðarson (2017) argues that the noun and adjective come to precede the suffixed article by two separate movements, with the adjective undergoing phrasal movement to SpecDP and the noun head-moving to D (reviving to some extent the analysis Sigurðsson 1993). Assuming head movement of the noun allows for a

straightforward account of how complements are left in place at the right edge of the noun phrase, a fact that requires substantial stipulation in an account where the adjective and noun move together (Pfaff, 2015).

Returning to the question of the possessor, I assume the same basic relative possession of the possessor to other DP-internal material as in Harðarson (2017). However, following Myler (2014, 2016) and others, I assume that the possessor is introduced by a dedicated functional head Poss (the way that agents are introduced by a dedicated functional head Voice). I assume that this head is below φP, so that rather than (34b), the underlying structure of (34a) is (37).

(37)

```
                          DP
                   ┌───────┴───────┐
                   D              ωP
                          ┌────────┴────────┐
                         AP                 φP
                   furðulegar ω      ┌───────┴───────┐
                     'bizarre'       φ             PossP
                                    -ar      ┌───────┴───────┐
                                            DP               nP
                                          Gísla        ┌──────┴──────┐
                                        'Gísli.GEN' Poss            n      PP
                                                           ┌────┴────┐  um setningafræði
                                                         √KENN  n     'about syntax'
                                                         'theory'
```

With Harðarson (2017), we may assume that the genitive moves to SpecφP, the noun head-moves to D, and the adjective moves to SpecDP.

There is one more, important consideration to mention, and that is the possibility that in addition to genitives originating in SpecPossP, nouns may in some cases take genitive complements. The examples in (38a) and (39a) are fairly clear instances of genitive complements.

(38) a. minn   hluti   arfsins
          my.POSS.NOM part.NOM inheritance.the.GEN
          'my part of the inheritance'

      b. * Jóns   hluti   arfsins
          John.GEN part.NOM inheritance.the.GEN
          INTENDED: 'John's part of the inheritance'   (Magnússon, 1984, 102)

(39) a. minn   helmingur garðsins
          my.POSS.NOM half.NOM   garden.the.GEN
          'my half of the garden'

      b. * Jóns   helmingur garðsins
          John.GEN half.NOM   garden.the.GEN
          INTENDED: 'John's half of the garden'   (Magnússon, 1984, 102)

However, only one genitive is allowed within a DP, as shown in (38b) and (39b). I assume that this is because DPs not licensed by a preposition must move to SpecφP, and this requirement cannot be fulfilled by two DPs, as would be necessary if a single noun took a genitive complement and a genitive in SpecPossP at the same time. Thus, it is been observed that while possessive pronouns can co-occur with a genitive complement,

genitive possessors cannot. Possessive pronouns distribute differently from genitives, and can be licensed in different positions.[17]

Applying these assumptions to the analysis of deverbal nominalizations, we arrive at the basic underlying structures in (40).[18]

(40) a. eyðilegg-ing óvinarins   á borginni
          destroy-NMLZ enemy.the.GEN on city.the.DAT
          'the enemy's destruction of the city'

→ n head-moves to D (though Poss and φ)
→ DP moves from SpecPossP to SpecφP
→ D is null due to presence of genitive

b. eyðilegg-ing borgarinnar
    destroy-NMLZ city.the.GEN
    'the destruction of the city'

→ n head-moves to D (though Poss and φ)
→ DP moves from complement of n to SpecφP
→ D is null due to presence of genitive

c. eyðilegg-ing-in   á borginni
    destroy-NMLZ-the on city.the.DAT
    'the destruction of the city'

---

[17] For example, when possessive pronouns follow the head noun, the head noun generally takes the definite suffix, as in *bók-in mín* 'book-the my' (='my book'). When they precede the head noun, which usually requires contrastive focus, the head noun may not take the definite suffix, as in *mín bók(*in)* 'my book(*-the)'. This pattern shows that possessive pronouns have a DP-internal distribution distinct from genitive DPs.

[18] For now, I remain agnostic about whether PossP is present in (40b,c), but later I will assume that it is the locus of agentive semantics, so it will be present whenever there is an implicit agent meaning in the nP.

```
                    DP
                 /      \
               D         φP
              -in       /   \
                      φ      (PossP)
                           /       \
                      (Poss)        nP
                                  /     \
                                n         DP
                             /    \      á borginni
                      eyðilegging         'of the city'
                       'destruction'
```

→ n head-moves to D (though Poss and φ)

→ DP moves from complement of n to SpecφP

→ D is pronounced as the definite suffix due to absence of any genitive

I will say more about the difference between *á-PP* complements and genitive complements in what follows. For now, what is mostly important is that the reader is able to connect the surface word orders in the examples presented to the underlying structures that will be the primary topic of discussion. That is, I will mostly present the pre-movement structures, and I am mostly concerned with the structure up to PossP. So it is important to be able to parse why the genitive, adjectives, and complements appear where they do, since I will not generally show the full derivations from the underlying structures. It is also important for the reader to understand that the absence of a definite marker in the presence of the genitive is a general fact about Icelandic DPs (and in fact, there are dialects that do pronounce the article in such contexts (Jónasson 2008)), and not one that bears directly on the analysis of deverbal nominalizations per se.

Finally, I should mention that some of the assumptions that I adopt here are for concreteness, and other possibilities are fully compatible with the claims I make here. For example, if one assumed that the adjective and noun moved as a constituent to SpecDP, that would be compatible with my proposal assuming that some general solution to the issue of where complements appear is proposed. And of course, this solution cannot be at odds with the parts of the analysis that are crucial. For this reason, I would like to be fully explicit about what aspects of the analysis of nP structure the proposal below does depend on:

- Categorized nouns, rather than roots, take complements.
- Possessors are introduced above nP in a separate projection (which I call PossP).
- Genitives may be introduced as complements to n or in SpecPossP (though only one genitive may be licensed within a DP).

It may be possible to modify these assumptions and retain the core intuitions of the proposal defended here, but these are the assumptions that my proposal as it is developed depends on.

1.5 About the data in this book

The bulk of the data in this book comes from attested examples and examples I elicited from (or discussed with) native speakers over the course of three trips to Iceland. Attested examples comes from web searches, or, more often, from the dictionaries at http://snara.is and the corpora at http://malheildir.arnastofnun.is (Risamálheildin), which I note with the abbreviation RMH, or http://mim.hi.is/ (Mörkuð íslensk málheild), which I note with the url mim.hi.is. All examples discussed here have been discussed with at least four native speakers

of Icelandic, and in many cases more than that.[19] All examples taken from the literature are explicitly cited as such.

1.6 Outline of the remainder of the book

In the remainder of the book, I will argue in favor of the complex head analysis of nominalizations on the basis of a fairly detailed study of Icelandic.[20] I begin in chapter 2 by outlining the basic properties of Icelandic nominalizations. This chapter serves partly as an overview, but more crucially, I demonstrate that Icelandic nominalizations can exhibit all the criteria of the CEN readings, and also have the three-way ambiguity discussed above. This is important, because the arguments in what follows depend on the claim that Icelandic nominalizations cannot be cast aside as empirically distinct from or irrelevant to the theoretical framework developed for nominalizations in other languages. In chapter 3, I provide the central, Icelandic-specific arguments in favor of the complex head analysis as opposed to the Parallel Structures and, especially, the Phrasal Layering analyses. In chapter 4, I turn to the nominalization of verbs that select PP complements, and show how a complex set of patterns stem from locality conditions on root allosemy, in a way that would be difficult, if not impossible to state in an independently motivated way in a Phrasal Layering analysis. In chapters 5 and 6, I show how the ambiguity of nominalizations and the inheritance of argument structure follow from a structure as long as we accept the existence of allosemy in a way that parallels allomorphy. Chapter 5 focuses primarily on Complex Event Nominals, while chapter 6 focuses on Simple Event Nominals and Referring Nominals.

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[19] I would like to thank the following native speakers for their judgments on some subset of the data in this manuscript: Anton Karl Ingason, Atli Snær Ásmundsson, Ásgrímur Angantýsson, Bolli Magnússon, Dagbjört Guðmundsdóttir, Einar Freyr Sigurðsson, Eiríkur Rögnvaldsson, Eva Hrund Sigurjónsdóttir, Gísli Rúnar Harðarson, Halla Hauksdóttir, Halldór Ármann Sigurðsson, Hinrik Hafsteinsson, Iris Edda Nowenstein, Jóhannes Gísli Jónsson, Kristín Bjarnadóttir, Kristín Björg Björnsdóttir, Lilja Björk Stefánsdóttir, Oddur Snorrason, Sigríður Sigurjónsdóttir, Sigríður Mjöll Björnsdóttir, Sigríður Sæunn Sigurðardóttir, Þorbjörg Þorvaldsdóttir, Þórhallur Eyþórsson.

[20] In many ways, I feel that this study is only scratching the surface of this fascinating topic, but I also feel that there is enough in what follows to support the general plausibility of the overarching argument.

Chapter 2
Icelandic nominalizations

This chapter presents a basic, general study of Icelandic nominalizations, which have received very little attention in theoretically-driven work. The goal is to characterize Icelandic nominalizations within the broad theoretical literature that has developed on the topic. I show how Icelandic nominalizations are quite similar to English derived nominals (and not, say, English gerunds), of the type marked by *-ation*, *-ment*, *-al*, *-ance*, and so on, though there are some important differences. I argue that Icelandic nominalizations contain v, but may not contain Voice. The overall conclusion will be that while the differences need an account, the similarities are strong enough that conclusions about Icelandic should bear on English, and vice-versa. This conclusion sets the stage for the Icelandic-specific issues raised in chapter 3.

2.1 Morphology and allomorphy

Nominalizations in Icelandic are marked by a variety of morphological means. First, we find a variety of affixes that nominalize a verb. Some of the most frequently encountered include *-un*, *-ing*, *-sla*, and *-stur*, although other affixes can be found, such as *-n* in *misheyr-n* 'mishearing', *vör-n* 'defense', *-ð* as in *ger-ð* 'doing', *-aður* as in *aðskiln-aður* 'separation', *-ning* as in *skrá-ning* 'registration', *hvat-ning* 'encouragement', etc. Some examples of each of these affixes is shown below.

(41) a. ***-un***: *björg-un* 'rescue', *löng-un* 'desire', *opn-un* 'opening', *söfn-un* 'collection', *vönt-un* 'need', *ætl-un* 'intention', *frest-un* 'postponement', *lok-un* 'closing', *úthlut-un* 'distribution', *útskúf-un* 'banishment', *misnot-k-un* 'abuse', *tileink-un* 'dedication', *hót-un* 'threat', *kvört-un* 'complaint', *rit-un* 'writing', *sköp-un* 'creation', *ásök-un* 'accusation', *skip-un* 'ordering', *undr-un* 'marvelment', *ögrun* 'discipline', *áskor-un* 'challenge', *löng-un* 'desire', *fjöl-g-un* 'increasing', *rækt-un* 'growing', *skoð-un* 'observation'

    b. ***-ing***: *eyðilegg-ing* 'destruction', *freist-ing* 'temptation', *lýs-ing* 'description', *spreng-ing* 'explosion', *breyt-ing* 'change', *eyð-ing* 'destruction', *útrým-ing* 'extermination', *pynt-ing* 'torture', *still-ing* 'adjustment', *veit-ing* 'giving/awarding', *afhend-ing* 'delivery', *ábend-ing* 'indication', *sending* 'sending', *freist-ing* 'temptation', *dreif-ing* 'distribution', *kynn-ing* 'publicizing/getting to know'

    c. ***-sla***: *breið-sla* 'widening', *brenn-sla* 'burning', *bræð-sla* 'melting', *eyð-sla* 'destruction', *fær-sla* 'movement', *greið-sla* 'payment', *hræð-sla* 'fear', *kenn-sla* 'teaching', *keyr-sla* 'driving'

    d. ***-stur***: *ak-stur* 'driving', *bak-stur* 'baking', *blás-stur* 'blowing', *lam-stur* 'beating', *les-stur* 'reading', *mak-stur* 'smearing', *mok-stur* 'shoveling', *rak-stur* 'shaving', *rek-stur* 'conduct'

    e. ***-a***: *kom-a* 'arrival', *kær-a* 'accusation', *kveðj-a* 'say good-bye', *sal-a* 'sale'

    f.   ***-n***: *misheyr-n* 'mishearing', *vör-n* 'defense', *skír-n* 'christening', *heimsók-n* 'visit', *laus-n* 're-
        lease, solution'

    g.   *-Ø*: *aðstoð* 'assistance', *dráp* 'killing', *hjálp* 'help', *morð* 'murder', *starf* 'work', *trú* 'belief',
        gón 'staring', *þökk* 'thanks',

    h.   *-ð*: *ger-ð* 'doing', *hneig-ð* 'tendency', *bygg-ð* 'settlement'

    i.   Others: *aðskiln-aður* 'separation', *skrá-ning* 'registration', *hvat-ning* 'encouragement',
        stuð-ningur 'support', *brun-i* 'burning', *gagnrýn-i* 'criticism',[1] *skort-ur* 'lack', *þvott-ur* 'wash-
        ing'

In general the choice of nominalizing affix is determined by the verb root whenever v is not overt, but by v whenever it is overt. Some examples of overt v are as follows:

- *-ka* tends to realize v when the root denotes a property (is typically adjectival)
- *-ga* tends to realize v when the root denotes an entity (is typically nominal)
- *-na* sometimes realizes v or Voice when the verb is unaccusative
- *-væða* often realizes v when a verb is derived from a categorized noun or adjective
- *-era* often realizes v when the root is a loanword

The following is a list of verbs that take overt verbalizing suffixes.[2]

  (42)   a.   *-ka* verbs: blíðka 'make calm', dýpka 'deepen', grænka 'make green', kveinka 'wince', þrælka
           'enslave', stækka 'enlarge', minnka 'diminish', hækka 'raise', seinka 'delay', fækka 'become
           fewer'

        b.   *-ga* verbs: auðga 'enrich', blóðga 'cut', blómga(st) 'blossom', fjölga 'increase', lífga 'revive',
           móðga 'insult', nauðga 'rape', ráðga(st) 'consult', ryðga 'rust', saurga 'tarnish', syndga 'sin',
           tólga 'become covered in ice', höfga 'doze off', snúðga(st) 'get'

        c.   *-na* verbs: dökkna 'darken', fúlna 'stagnate', gildna 'get fatter', lifna 'come to life', sofna 'fall
           asleep', vakna 'wake up', bogna 'bend', rofna 'rip', þiðna 'thaw', roðna 'blush', blána 'turn blue',
           gulna 'turn yellow', sortna 'blacken', fölna 'wilt', kólna 'become colder', blotna 'get wet', rotna
           'rot', bráðna 'melt', hitna 'heat', grána 'become gray', hlýna 'get warm', stirðna 'stiffen', þrútna
           'swell', slakna 'become slack', hvítna 'become white', súrna 'become sour', glaðna 'become
           happy', svigna 'curve', þorna 'dry', hnigna 'decline', bólgna 'swell', harðna 'harden', skrælna
           'dry out', storkna 'solidify', sölna 'wither', visna 'wither'

        d.   *-era* verbs: blammera 'insult', bródera 'embroider', marinera 'marinate', sjarmera 'charm',
           stúdera 'study', traktera 'treat', organísera 'organize', pródúsera 'produce', skandalísera 'scan-
           dalize', rasjónalísera 'rationalize', sósíalísera 'socialize', stílisering 'stylize', fabúlera 'fabricate',
           spekúlera 'speculate'

        e.   *-væða* verbs:[3] einkavæða 'privatize', hervæða 'militarize', iðnvæða 'industrialize', kjarnorku-
           væða 'nuclearize', nútímavæða 'modernize', rafvæða 'electrify', ríkisvæða 'nationalize',
           siðvæða 'moralize', sjálfvirknivæða 'automaticize', Spánarvæða 'Spain-ify', spænskuvæða
           'Spanishize', stofnanavæða 'institutionalize', söluvæða 'commercialize', tækjavæða 'exploit',
           tæknivæða 'automate', tölvuvæða 'computerize', vélvæða 'mechanize', vígvæða 'militarize'

        f.   Other verbs with overt verbalizers: söng-la 'chant', flög-ra 'flutter', hug-sa 'think', hrein-sa
           'clean', nei-ta 'deny'.

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[1] Note that the *-i* on *gagnrýn-i* 'criticism' is distinct from the *-i* in *brun-i* 'burning', in that the former is invariant (and feminine) while the latter changes for case and number (and is masculine), and might not strictly speaking be a nominalizing morpheme at all. See discussion below.

[2] In the compilation of these lists, I consulted a variety of works, including Bjarnadóttir (2005), Kristinsson (2004:30), Sigurðsson (1989), Kvaran (2005), Jónsson (2003, 2005). Some other possible realizations of v include *-ma*, as in *blá-ma* 'color sth blue', and *-va* as in *högg-va* 'cut/hew'.

[3] Thanks to Anton Karl Ingason for bringing this class of verbs to my attention.

When verbs with *-ka*, *-ga*, *-na* or the verbalizers in (42e) are nominalized, the nominalizer *-un* is used.[4]

(43) a. *seinn* 'late'

b. Flugfélagið sein-**ka**-ði   vélinni.
   airline.the   delayed-KA-PST plane.the.DAT
   'The airline delayed the plane.'

c. sein-**k**-un   vélarinnar
   delay-KA-NMLZ plane.the.GEN
   'the delay of the plane' (Maling, 2001, 449)

(44)   a
      $\sqrt{\text{SEIN}}$ a

(45)   v
      $\sqrt{\text{SEIN}}$ v
              -ka

(46)   n
            v   n
      $\sqrt{\text{SEIN}}$ v   *-un*
              -ka

When v is realized as *-era* or *-væða*, the nominalizer is always *-ing*, as far as I know:

(47) a. Guðrún analýs-era-ði   vandamálið.
   Guðrún analyze-VBLZ-PAST problem.the
   'Guðrún analyzed the problem.'

b. analýs-er-ing   Guðrúnar   á vandamálinu
   analyze-VBLZ-NMLZ Guðrún.GEN on problem.the
   'Guðrún's analysis of the problem'

We could thus model this as contextual allomorphy in the following way.

(48)   n ↔ *-stur* / { $\sqrt{\text{BAK}}$, $\sqrt{\text{MOK}}$, $\sqrt{\text{LES}}$, $\sqrt{\text{LAM}}$, … }⌢___
      ↔ *-sla* / { $\sqrt{\text{BREIÐ}}$, $\sqrt{\text{BRÆÐ}}$, $\sqrt{\text{KEYR}}$, $\sqrt{\text{KENN}}$, … }⌢___
      ↔ *-ing* / {*-era*, *-væða*, $\sqrt{\text{FREIST}}$, $\sqrt{\text{LÝS}}$, $\sqrt{\text{SPRENG}}$, … }⌢___
      ↔ *-un* / elsewhere

That is, the choice of n is generally sensitive to the roots, or to the affix like *-era*, but otherwise *-un* will be chosen as the elsewhere form. This will apply to roots that are not on the other lists, and to any verb suffixed with *-ga, -ka, -na*, etc., since the nominalizer will never be concatenated directly with the root in such cases.[5]

As a side note, I should point out that the choice of nominalizer might not be as morphologically arbitrary as I have indicated above. Eiríkur Rögnvaldsson (p.c.) points out that there is a strong connection between the choice of nominalizer and the way past tense is expressed. Most (weak) verbs that take *-aði(r)* in the singular past tense take the nominalizer *-un*, and most (strong) verbs that take the past tense ending *-ti(r)/-di(r)/-ði(r)* in the singular past tense take the nominalizer *-ing*. Strong verbs that take neither of these past tense endings must find some alternative nominalizer. However, these generalizations are not absolute. For example, *moka* 'shovel' and *raka* 'shave' take *-aði(r)* in the singular past, but they are nominalized with *-stur*, not *-un*. Likewise, *keyra* 'drive' takes *-ði(r)* in the past tense but is nominalized with *-sla*, not *-ing*. There are various kinds of exceptions like this. Possibly they are systematic, but since nothing major hinges on it, I will continue to assume that there is a fairly arbitrary statement of which realizations of n occur in the presence of a given root.[6]

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[4] I assume that the preceding [a] is deleted phonologically, but it is also possible that it is a separate morpheme, a kind of 'theme vowel', given that the vast majority of Icelandic verbs end in [a].

[5] Alternatively, we can specify the context for *-un* and say that there is no elsewhere form.

[6] For example, one might encode some kind of 'theme vowel' insertion on v, and let that be predictive of both past tense form and the nominalizer. Exceptions could be dealt with by manipulating when the theme vowel is present, or by considering a

The gender of the noun often appears to be determined by the nominalizer. For example, the *-stur* and *-aður* affixes are masculine, the *-sla*, *-ing* and *-un* affixes are feminine. However, it is not clear whether this is really encoded as part of the Vocabulary Item realizing n. Some of the affixes here are actually themselves morphologically complex. For example, the *-a* in *-sla* expresses gender, number and case, in this case feminine, singular nominative. It takes other suppletive forms for other number/case combinations. The *-ur* in *-aður* similarly expresses gender, number and case, in this case masculine, singular nominative, and there are other suppletive forms for other number/case combinations.

(49)

	Singular	Plural
Nom	-sl-a	-sl-ur
Acc	-sl-u	-sl-ur
Dat	-sl-u	-sl-um
Gen	-sl-u	-sl-na

(50)

	Singular	Plural
Nom	-að-ur	-að-ir
Acc	-að-Ø	-að-i
Dat	-að-i	-uð-um
Gen	-að-ar	-að-a

So for what I am calling *-sla* and *-aður*, it may be more accurate to consider the *-sl-* and *-að-* parts the overt nominalizers, and the remainder the fusional noun inflection material, which is sometimes expressed as a separate head (see e.g. Ingason & Sigurðsson 2015, who include a separate node for nInfl).[7] In fact, there is another nominalizer *-sli*, which might be composed of *-sl-* plus neuter *-i*; this form is far less common for event nominals, however.

This point is relevant for the question of what counts as a zero-derived nominalization (an issue discussed further below), because some nominalizations are expressed solely with a nominal affix that fusionally expresses number, case and gender. This is the case for *kom-a* 'arrival', which is clearly built on the root $\sqrt{\text{KOM}}$ (from the verb *koma* 'arrive') and *brun-i* 'burning', which is clearly built on $\sqrt{\text{BRENN}}$ (from the verb *brenna* 'burn'). The former is feminine and the latter is masculine.

(51)

	Singular	Plural
Nom	kom-a	kom-ur
Acc	kom-u	kom-ur
Dat	kom-u	kom-um
Gen	kom-u	kom-(n)a

(52)

	Singular	Plural
Nom	brun-i	brun-ar
Acc	brun-a	brun-a
Dat	brun-a	brun-um
Gen	brun-a	brun-a

This raises the possibility that in fact, the nominalizer itself is -Ø in such cases, and the visible affix is solely the expression of the inflectional features. Assuming these are deverbal, this would look as follows, using the notation from Ingason & Sigurðsson (2015).

(53)   a.

b.

It is important to note that there is one other indication of nominalization in a case like *bruni* 'burning', however, and that is the fact that the vowel shifts from <e> (IPA = [ɛ]) in the verb *brenna* to <u> (IPA = [ʏ])

___

phonological dimension to the choice of n. The point in this work is that we have one basic structure for word building, and different ways of realizing that structure. In considering the alternatives, it would be important to consider the complexity of the overall system along with what is gained; some generalizations might not be in the grammar, but might guide the acquisition of what the grammar treats as arbitrary, root-specific forms.

[7] In contrast, the *-un*, *-ing*, and *-stur* nominalizers keep their basic form throughout the paradigm, with some minor phonological adjustments.

in the noun *bruni*. The importance of this point is the fact that some nominalizations have no overt affixes at all, but seem to mark the nominal solely with a vowel shift. This is the case for *dráp* 'killing', from the verb *drepa* 'kill' and *morð* 'murder (n.)' from the verb *myrða* 'murder (v.)'. Such cases might be considered zero derived, with the nominalizer conditioning a readjustment rule on the root. Or, we might take such vowel shifts to 'count' as overt marking, for the purposes of any generalizations related to the presence/absence of an overt nominalizer. But this raises some concerns, because there are also some apparent cases of zero-derived nominals which have no overt affixes or vowel shifts, as in *gón* 'staring' from *góna* 'stare'. It could easily be an accident that no vowel shift occurs (e.g. if the phonology of the root doesn't meet the structural description of any readjustment rule), so there could then be zero-derived nominals that should 'count' as being overtly marked. Clearly, this could cloud any attempt to understand whether zero marking plays a role in any generalizations having to do with derived nominals. We will return to the issue of zero-derived nominals below, since this has been an important consideration in research on English nominalizations.[8]

Before moving on, there is one other aspect of the morphology of nominalizations that I would like to mention, which will be discussed more extensively in chapter 5, namely that prepositions and verbal particles selected by a verb frequently prefix to nominalizations derived from them. For example, *keyra* 'drive' forms *keyr-sla* 'driving'. But when *keyra* is used with the preposition *á*, it means 'get in an accident'. This meaning can be expressed in the nominalization by prefixing the preposition *á* to the nominalized form. In many cases, the preposition/particle may not prefix to a verb used as a verb, but only when it is deverbalized.[9]

(54)　a.　Guðrún　　**keyrði á** á　Laugavegi.
　　　　　Guðrún.NOM drove　on on Laugavegur
　　　　　'Guðrún got in an accident on Laugavegur.'

　　　b.　**Á-keyr**-sla-n　　átti　sér　stað á　Laugarvegi.
　　　　　on-drive-NMLZ-the took REFL place on Laugavegur
　　　　　'The accident took place on Laugavegur.'

　　　c.　* Guðrún　　**á-keyrði** á　Laugavegi.
　　　　　Guðrún.NOM on-drove on Laugavegur
　　　　　INTENDED: 'Guðrún got in an accident on Laugavegur.'

Prepositional prefixing happens with all sorts of nominalizers, prepositions and verbs. It is a major form of word formation in Icelandic, ubiquitous in the language, and it seems to have systematic functions in deverbalization. I will return to this topic in detail, as it pertains to nominalizations, in chapter 4.

2.2 Complex event nominals

2.2.1 Basic CEN diagnostics

The goal of this section is to show that Icelandic nominalizations can be complex event nominals in the sense of Grimshaw (1990). Along the way, I will also show that they can be result/referring nominals or simple event nominals. The general argumentation here is that Icelandic is close enough to English that explanations for one should carry over to the other. This sets the stage for the argumentation in chapter 3. I also discuss discuss the morphology of complex event nominals, and show that they are possible with a variety of suffixes, possibly including a -Ø suffix, as well as suffixes that fuse case, number and gender information.

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[8] In passing, it might be worth noting that *dráp* 'killing', *morð* 'murder' and *gón* 'staring' are all neuter, since we have not seen overt neuter nominalizing affixes yet, other than *-sli* (which, as mentioned, is not usually used on event nominalizations).

[9] This phenomenon is common not only with nominalization, but also with adjectivization.

Icelandic has the basic ambiguity between complex event (CEN), simple event (SEN), and referring noun (RN) readings, as shown in (55).[10]

(55) a. **CEN**

Eyðilegg-ing   borgarinnar var hræðilegur atburður.
destruc-NMLZ.NOM city.the.GEN was horrible   event
'The destruction of the city was a horrible event.'

b. **SEN**

Eyðilegg-ing-in   stóð   yfir í marga daga.
destruc-NMLZ-the.NOM lasted over in many days
'The destruction lasted many days.'

c. **RN**

Jón gekk   sorgmæddur í gegnum eyðilegg-ing-una.
John walked aggrieved   in through destruc-NMLZ-the.ACC
'John walked aggrieved through the destruction.'   (Jóhannsdóttir, 1995, 63)

In this section, I will focus mostly on the CENs and their properties. Like English, internal arguments are generally obligatory with the complex event reading. So, for example, if a telic *á*-phrase is used (cf. Torfadóttir 2008), the internal argument must be expressed:

(56) a. * lýs-ing   Jóns   á einum klukkutíma
describe-NMLZ John.GEN in one   hour
INTENDED: 'John's description (of something) in one hour'

b. lýs-ing   Jóns   **á landslaginu** á einum klukkutíma
describe-NMLZ John.GEN on landscape.the in one   hour
'John's description of the landscape in one hour'

(57) a. * lýs-ing-in   á einum klukkutíma
describe-NMLZ-the in one   hour
INTENDED: 'the description (of something) in one hour'

b. lýs-ing-in   **á landslaginu** á einum klukkutíma
describe-NMLZ-the on landscape.the in one   hour
'the description of the landscape in one hour'

...gekk í   rauninni mjög vel.
...went in fact   quite well
'...was in fact quite successful.'

Note that the internal argument requirement can be met by either the *á*-PP or by a genitive DP (though the latter is only possible when the external argument is not expressed as a genitive DP, as Icelandic noun phrases strictly allow only one genitive in a given noun phrase).

The use of such telicity phrases seems to be inherited from the verb. For example, *lesa* 'read' can be telic or atelic while *eyðileggja* 'destroy' is only naturally telic.

(58) a. Anna las   bókina   { á einum klukkutíma / í   einn klukkutíma }
Anna read.PST book.the.ACC { in one   hour   / for one hour   }
'Anna read the book {in/for} one hour.'

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[10] Jóhannsdóttir (1995, 63) marked (55b) ungrammatical, but it seems that she had the CEN reading in mind. Halldór Sigurðsson (p.c.) and Þórhallur Eyþórsson (p.c.) point out that it is acceptable in the right context. Halldór Sigurðsson gives the context in (i):

(i) Óvinurinn réðst inn í borgina og eyðilagði allt sem fyrir varð.
'The enemy invaded the city and destroyed everything that they came across.'

> b. les-stur bókarinnar á einum klukkutíma
> read-NMLZ book.the.GEN in one hour
> 'the reading of the book in one hour'
>
> c. les-stur bókarinnar í einn klukkutíma
> read-NMLZ book.the.GEN for one hour
> 'the reading of the book for one hour'

(59) a. Þau eyðilögðu borgina { á einum degi / ?? í þrjú ár }
they destroyed city.the.ACC { in one day / ?? for three years }
'They destroyed the city {in one day/ ?? for three years}.'

b. eyðilegg-ing borgarinnar á einum degi
destruc-NMLZ city.the.GEN in one day
'the destruction of the city in one day'

c. ?? eyðilegging borgarinnar í þrjú ár
destruc-NMLZ city.the.GEN for three years
'the destruction of the city for three years'

Like English, aspectual modifiers are possible, even when the noun is singular.

(60) a. **margföld** eyðilegging óvinarins á borginni
repeated destruction enemy.the.GEN on city.the.DAT
'the enemy's repeated destruction of the city'

b. **regluleg** eyðilegging óvinarins á borginni
regular destruction enemy.the.GEN on city.the.DAT
'the enemy's regular destruction of the city'

In the relevant reading, plurals are ungrammatical, as are numerals:

(61) a. * **Ein** eyðilegging á borginni (olli uppnámi).
one destruction on city.the.DAT (caused confusion)

b. * **Tvær** eyðileggingar á borginni (ollu uppnámi).
two destructions on city.the.DAT (caused confusion)

Like English, implicit argument control is possible, both with purpose clauses (62a–b) and complement clauses (62c–d):

(62) a. söfn-un sýna
collect-NMLZ samples.GEN

til að skrásetja hvarf sveppagróðurs
for to document disappearance mushrooms.GEN
'the collection of samples to document the disappearance of mushrooms'

b. söfn-un stofnunarinnar á sýnum
collect-NMLZ institute.the.GEN on samples.DAT

til að skrásetja hvarf sveppagróðurs
for to document disappearance mushrooms.GEN
'the institute's collection of samples
to document the disappearance of mushrooms'

c. löng-un Hlyns til að fara
want-NMLZ Hlynur.GEN for to go
'Hlynur's desire to go.'

    d. sú ætl-un   Hlyns   að fara
       the intend-NMLZ Hlynur.GEN to go
       'Hlynur's intention to go'

Whatever the explanation for these properties is in English, it should be possible to extend it to Icelandic, which is similar in the most important respects.

    There is at least one sharp difference between Icelandic and English which should be mentioned. Unlike English, passive by-phrases cannot be used to express arguments:

(63) a.   eyðilegg-ing borgarinnar (*af óvininum)
         destr-NMLZ city.the.GEN (*by enemy.the.DAT)
         'the city's destruction by the enemy'

      b.   eyðilegg-ing-in á borginni   (*af óvininum)
         destr-NMLZ-the on city.the.DAT (*by enemy.the.DAT)
         'the destruction of the city by the enemy'

The agent can, however, be introduced by a special kind of PP (with a somewhat formal flavor), *af hálfu* 'by/from part' + GENITIVE.

(64)   eyðilegg-ing   borgarinnar af hálfu óvinarins
        destroy-NMLZ city.the.GEN by part   enemy.GEN
        'the destruction of the city by the enemy'

The *af hálfu* phrases are in complementary distribution with agent genitives, suggesting that they really do target the same thematic role.

(65)   * eyðilegg-ing   óvinarins   á borginni af hálfu Jóns
        destroy-NMLZ enemy.the.GEN on city.the   by part   John.GEN
        INTENDED: 'the enemy's destruction of the city that John was responsible for'

Moreover, *af hálfu* phrases require a sentient agent, and they are not compatible with nominals that do not take agentive external arguments, such as *rotnun* 'rotting' (from the verb *rotna* 'rot').

(66) a.   * rot-n-un   laufblaðanna   af   hálfu raka
         rot-NA-NMLZ leaves.the.GEN from part   humidity.GEN

      b.   * rot-n-un   laufblaðanna   af   hálfu garðyrkjumannsins
         rot-NA-NMLZ leaves.the.GEN from part   gardener.the.GEN

Natural causer PPs are possible in the form of *af völdum* 'by/from cause' phrases.[11]

(67)   rot-n-un   laufblaðanna   af   völdum raka
        rot-NA-NMLZ leaves.the.GEN from cause   humidity.GEN
        'the rotting of the leaves from the humidity'

We will return later in the chapter to *af hálfu* phrases the impossibility of ordinary by-phrases.

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[11] Note that the preposition *af* in Icelandic is ambiguous between 'by' and 'from', and in verb phrases introduces both passive agents and natural causers (cf. Kallulli 2007 on Albanian).

2.2.2 Allomorphs of n in CENs

We have seen (and will continue to see) plenty of examples of CENs with *-un* and *-ing*, which are the most common deverbal nominalization affixes, as far as I know. But I would like to briefly point out that complex event nominals can be formed by a number of the affixes seen above. For example, *aka* and *keyra* are different words for 'drive' and take different nominalizers (*-stur* and *-sla*, respectively), but both allow the CEN reading.

(68)   a.   (reglulegur / tíður   ) ak-stur   leigubílsins
           (regular   / frequent) drive-NMLZ taxi.the.GEN
           'the (regular / frequent) driving of the taxi'

         b.   (reglulegur / tíður   ) ak-stur   Guðrúnar   á leigubílnum
           (regular   / frequent) drive-NMLZ Guðrún.GEN on taxi.the.DAT
           'Guðrún's (regular/frequent) driving of the taxi'

(69)   a.   (regluleg / tíð   ) keyr-sla   leigubílsins
           (regular / frequent) drive-NMLZ taxi.the.GEN
           'the (regular / frequent) driving of the taxi'

         b.   (regluleg / tíð   ) keyr-sla   Guðrúnar   á leigubílnum
           (regular / frequent) drive-NMLZ Guðrún.GEN on taxi.the.DAT
           'Guðrún's (regular/frequent) driving of the taxi'

I pointed out above that *morð* 'murder' looks like a zero-derived noun, except that vowel in the root is different in the verb *myrða* (IPA = [ɪ]) and the noun (IPA = [ɔ]). Such apparently zero-derived nouns also seem to allow the CEN reading, as suggested by the following attested examples:

(70)   a.   morð yfirvalda   á mótmælendum
           murder authorities.GEN on protesters
           'authorities' murder of protesters'[12]

         b.   morð Bandaríkjamanns á indverskum innflytjanda í Kansas
           murder American.GEN   on Indian   immigrant in Kansas
           'an American's murder of an Indian immigrant in Kansas'[13]

The nominal *morð* 'murder' passes other CEN diagnostics as well, including the licensing of telicity PPs.

(71)   a.   Morð Guðrúnar   á tveimur einræðisherrum á þrem vikum vakti mikla athygli.
           murder Guðrún.GEN on two   dictators   in three weeks woke much attention
           'Guðrún's murder of two dictators in three weeks drew a lot of attention.'

         b.   Morð   tveggja einræðisherra á þrem vikum vakti mikla athygli.
           murder two   dictators.GEN in three weeks woke much attention
           'The murder of two dictators in three weeks drew a lot of attention.'

It has been suggested in the literature on English that true CENs always have an overt affix. If this is true, then it is arguably something that should fall out of the system, and not be stipulated—something about the realization of n as zero being possible only when n attaches directly to the root, for example. However, even for English, there are a number of counterexamples. Harley (2009b) mentions *murder*, *capture*, *collapse*, *repair*, *defeat*, *censure*, *practice*, and others. For Icelandic, as mentioned above, it is not always clear how to decide whether a nominal counts as zero derived. Is it still zero derived if there is a vowel shift? What if it is marked by an affix that also expresses case, number and gender? If we limit ourselves to cases where there

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[12] https://skemman.is/bitstream/1946/13054/1/elinjorunn_maritgerd.PDF, Jan. 16, 2019.

[13] http://eyjan.dv.is/eyjan/2017/03/01/bandarikjamenn-anaegdir-med-raedu-forsetans/, Jan. 16, 2019.

really is none of these things, we may be overly limiting, and it is not clear why vowel-shift triggering zeros would not occur with roots that lack the appropriate vowel. For these reasons, I will not actively pursue the question of whether zero-derived nominals are special in some way in Icelandic.

In fact, I have so far not been able to find many clear cases where the choice of nominal affix makes a strong difference. At the very least, a wide variety of nominalizers are available to form CENs, as well as the other readings we find in nominalizations. I will thus, in this book, consider any choice of n to be potentially relevant, and by and large not try to hinge any generalizations on the choice of a particular nominalizing affix.

2.2.3 Marg- prefixation as a CEN diagnostic

Many Icelandic verbs can be prefixed with *marg-*, which is the stem for the word 'many'. In this section, I suggest that *marg-* prefixation supports the distinction between the CEN and SEN readings, as it is only compatible in its predictable, compositional use, with a CEN reading when it occurs on a noun derived from a verb. Sigurðsson (2015) argued that it must have scope over the entire event denoted by the vP, and therefore suggested that it attaches to the vP. In contrast, I will assume that *marg-* may adjoin to v at the complex head level. Sigurðsson (2015) proposes that it acts as an event modifier, adding iterativity. His denotation (pp. 49) is as follows.

(72) $[\![\textit{marg-}]\!] = \lambda P_{\langle s,t \rangle} \lambda e. P(e) \,\&\, \mathrm{iter}(e)$

When a verb prefixed with *marg-* 'many' is nominalized, it may only receive the CEN reading.

First, consider (356), where we see that *þvo* 'wash' can be nominalized as a CEN (356a–b), an SEN (356c), or an RN (356d).

(73) Guðrún   þvoði   fötin.
       Guðrún.NOM washed clothes.the.ACC
       'Guðrún washed the clothes.'

    a.   þvo-ttur   Guðrúnar   á   fötunum
        wash-NMLZ Guðrún.GEN on clothes.the.DAT
        'Guðrún's washing of the clothes'   (CEN)

    b.   þvo-ttur   fatanna
        wash-NMLZ clothes.the.GEN
        'the washing of the clothes'   (CEN)

    c.   Þvo-ttur-inn   tók   langan tíma.
        wash-the-NMLZ took long   time
        'The washing took a long time.'   (SEN)

    d.   Þvo-ttur-inn   á   að fara í vélina.
        wash-the-NMLZ ought to go   in machine.the.ACC
        'The washing (=laundry, clothes to be washed) should go into the washing machine.'   (RN)

To illustrate the fact that *marg*-prefixation is only available with a CEN reading, consider (364) below.[14]

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[14] Note that some speakers find *marg-* to be unacceptable in all nominalizations. Some prefer the *á*-PP to the genitive for the internal argument. Some speakers find the attested example of *margþvottur* below better than the constructed examples, and in (i) indeed does invoke the event reading and have an internal argument. At least one speaker who found *margþvottur* quite bad, however, still found the SEN and RN examples to be worse.

(74) Guðrún   marg-þvoði   fötin.
     Guðrún.NOM many-washed clothes.the.ACC
     'Guðrún repeatedly washed the clothes.'

    a.   marg-þvo-ttur   Guðrúnar   á   fötunum
          marg-wash-NMLZ Guðrún.GEN on clothes.the.DAT
          'Guðrún's repeated washing of the clothes.'   (CEN)

    b.   marg-þvo-ttur-inn   á   fötunum
          many-wash-NMLZ-the on clothes.the.DAT
          'The repeated washing of the clothes.'   (CEN)

    c.   marg-þvo-ttur   fatanna
          many-wash-NMLZ clothes.the.GEN
          'the repeated washing of the clothes'   (CEN)

    d. * Marg-þvo-ttur-inn   tók   langan tíma.
          many-wash-the-NMLZ took long   time
          INTENDED: 'The repeated washing took a long time.'   (SEN)

    e. * Marg-þvo-ttur-inn   á   að fara í vélina.
          many-wash-the-NMLZ ought to go   in machine.the.ACC
          'The repeated washing (=laundry, clothes to be repeatedly washed) should go into the washing
          machine.'   (RN)

Corroborating the claim that iterative *marg-* only prefixes to nouns in the CEN reading derived directly from the meaning of the verb, most attested examples of nominalizations prefixed with *marg-* appear with an overt internal argument. The following examples are taken from the Risamálheild corpus.

(75) a.   marg-flokk-un   á   þessum hlutum
          many-sort-NMLZ on these   things
          'sorting of these things over and over'

        b.   ansi   mikil marg-endurtek-ning á   því
            rather much many-repeat-NMLZ on it
            'so much repeating of it over and over'

        c.   marg-not-kun   eiginfjárliða
            many-use-NMLZ equity.items.GEN
            'use of equity items over and over'

        d.   marg-nýt-ing   gjaldþolsliða
            many-utilize-NMLZ solvency.margin.elements.GEN
            'utilization of solvency margin elements over and over'

        e.   Við höfum kallað það marg-nýt-ingu   á   manneskju sem vöru.
            we have   called that many-utilize-NMLZ.ACC on person   as   commodity
            'We have called that utilization over and over of a person as a commodity.'

(i)   það kostar miklu meira vesen   sem   tekur allan sparnað burt.. eins og **marg-þvo-ttur**   **á blettunum** óneitanlega
     it   costs much more trouble which takes all   savings away like   many-wash-NMLZ on stains   undeniably
     gerir
     does
     'it causes much more of a hassle which takes all the savings away... like the repeated washing of stains undeniably
     does'[15]   https://danjensen.blog.is/blog/danjensen/entry/563317/ (11/13/18)

Possibly, speakers who reject all instances of nominalized *marg-* do attach it at the vP level, as proposed by Sigurðsson (2015); if so, this is further support for the present complex head analysis of nominalizations, since a phrasal layering approach would be hard-pressed to explain why vPs with *marg-* are impossible, while it would follow from the present approach.

f.   eftir marg-birt-ingu   þáttanna
      after many-publish-NMLZ parts.the.GEN
      'after the publishing of the parts over and over'

g.   Við marg-endur-skoð-un   á samsetningu notkunar hans…
      with many-re-inspect-NMLZ on combination uses.GEN its.M
      'with reinspection over and over of the combination uses of it…'

The *marg-* nominalization in each of these examples occurs with an internal argument, and also has a predictable, compositional meaning that is directly predictable from the meaning of the verb in the absence of *marg-* and the nominal that would be derived from it.

Some nominalizations prefixed with *marg-* do appear without any internal argument. However, they generally involve a noticeably different use or meaning of the prefix, including idiosyncratic meanings or technical terms. For example, (76a) does not refer to many reflecting events, but rather refers to the scattering of light into many directions as part of one reflecting event. (76b) does not refer to many voicing events (i.e., voicing something over and over again), but rather to the coming together of different voices in a harmony. (76c) is not problematic in the first place, since it does include an argument, but I note that *margskipting* here (and the verb *margskipta* that it is derived from) is ambiguous between the "over and over again" reading and a reading of one division event that divides something into many parts.

(76)   a.   getur stór hluti ljósorkunnar   endurvarpast frá   froðunni og
             can   large part light.energy.the.GEN rebound   from foam.the and
             marg-spegl-un-in   fær einkenni ljósdreifingar
             many-reflect-NMLZ-the gets properties light.scatter
             '…a large part of the light energy can rebound off of the foam and the "multi-reflection"
             acquires the properties of light scatter'

       b.   En rödd Sindra   er hér of sterk til að marg-rödd-un-in   gangi upp
             but voice Sindri.GEN is here too strong for that many-voice-NMLZ-the walks up
             'But Sindri's voice is too strong here for the harmonizing to work.'

       c.   Þar má nefna marg-skipt-ingu   radda
             there may name many-divide-NMLZ voices.GEN
             'there one may name the division of voices over and over'
             'there one may name the division of voices into many parts'

I take these uses of *marg-* to be distinct from the use discussed above which involves iteration of an event. The examples in (77) are similar. (77a) does not just refer to repeated education events. It has a "redundancy" reading, related to the repetition of the result. I could educate someone over and over again, but never be redundant, focusing on different topics on different occasions; but this is not the meaning of *margmenntun* in (77a). (77b) has an internal argument, but may well be a SEN or RN, since it is plural. However, this too has a different reading. It does not simply mean that the same parts are insured over and over again, for example if the insurance only lasts a week and must be constantly renewed. It too has a redundancy reading, meaning that the same parts are insured in different ways.

(77)   a.   Marg-mennt-un   er dýr,   þ.e. þegar fólk er skikkað til að sitja á
             many-educate-NMLZ is expensive, that.is when people are forced to sit in   classroom
             skólabekk og   læra   hluti sem það   kann fyrir.
             and   learn things that they know
             'Redundant education is expensive, that is, when people are forced to sit in a classroom and
             learn things that they already know.'

       b.   marg-trygg-ingar   á sömu þáttum
             many-insure-NMLZ.PL on same parts
             'insurances of the same parts in different ways'

As above, I take these readings to involve a different use of *marg-*, not one that adds iterativity to the meaning of an event. Finally, some uses of *marg-* without an internal argument involve idiosyncratic or unpredictable meanings. For example, *margföldun* in (78a) is derived from *margfalda* 'multiply', but there is no verb *falda* that it is related to.[16] In (78b), *margbeiting* is essentially a coinage to mean 'multitasking', which is not predictable on its own. Speakers report that they would need to be told explicitly that *margbeiting* has this meaning, unlike the iterativity examples above.

(78)   a.   voru 15 keppendur skráðir   til leiks sem   er margföld-un   í þátttöku   miðað
            were 15 contestants signed.up for play   which is multiply-NMLZ in participation compared
            við   síðustu ár
            with last   year
            '15 contestants were signed up for the game, which is an increase in participation compared with last year.'

        b.   en marg-beit-ing   – það sem   útlendingar kalla multi-tasking – er…
            but many-use-NMLZ   that which foreigners   call   multi-tasking – is…
            'but *margbeiting* – which foreigners call multi-tasking – is…'

I take these uses as well to be distinct from the compositional, iterative meaning. They could be prefixed to v or the root, but either way they condition special idiosyncratic root meaning and themselves take on a distinct meaning, much as the idiosyncratic meanings of prepositional prefixes discussed in chapter 4 do.

In general, then, the iterative prefix *marg-* is compatible only with the CEN reading, and thus requires an internal argument when it used on a derived nominal. This supports the distinction between the SEN and CEN readings, since there is no a priori conceptual reason why an SEN reading could not be iterative.

2.3 Presence/absence of v in nominalizations

This section discusses evidence for the idea that there is a v head embedded in Icelandic nominalizations. I first discuss the relationship between eventive meaning, obligatory argumenthood, and the independent existence of a verb. I then discuss the strongest evidence in favor of such a head, namely existence of nominalizations with overt v. Together, these considerations lead me to conclude that complex event nominals always contain a v head as well. Given the ubiquity of the ambiguity between referring, simple, and complex event readings, it is argued that the simple event readings and at least some (but perhaps not all) referring nominal readings contain v heads as well.

2.3.1 Eventive readings and Borer's generalization

The correlation between eventive readings and argument structure has, for many, suggested that nominalizations are not simply built on top of a root, but contain a v head. Arguments are obligatory whenever modifiers target the event meaning, and we know that verbs are quite generally associated with eventive meaning in their most basic and common uses. Moreover, the same arguments are also obligatory in verb phrases headed by the relevant verbs. Alexiadou (2001), for example, proposed that event structure semantics corresponds to verbal structure. To inherit event structure, therefore, is to attach on top of verbal structure. Since arguments are obligatory in verb phrases, and nominalizations are built on verb phrases, argument structure is necessarily inherited in nominalizations that have event structure.

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[16] There are archaic uses of *falda* that bear no synchronic relationship to *margfalda*, and some speakers are not even aware of them.

Moreover, Borer (2014) has emphasized the generalization that nominals with event structure and argument structure are always derived from an existing verb. Thus, the phrases in (79) are unacceptable because *vision* and *cognition* are not derived from verbs such as, say, *viz or *cog.

(79) a. * the vision of the mountain by the instructors for three hours this morning

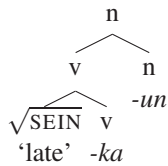   b. * the cognition about the problem for three hours by the philosophy student

A syntactic theory of morphology should be able to capture the connection between argument structure inheritance and verbal meaning.

I will argue in what follows that argument structure inheritance (at least for internal arguments) must be captured without building nouns on top of full verb phrases, as Alexiadou and Borer (and many others) propose. However, the generalization that complex event nominals entail the existence of the verb should follow from the system. I will therefore take the availability of the complex event reading to be diagnostic of the presence of little v in what follows. However, it should become clear that while this is a sufficient condition, it is not a necessary one: little v may sometimes be present in the absence of the complex event reading.

2.3.2 Overt v morphology

Perhaps the clearest argument in favor of a v head in nominalizations is cases where there is an overt exponent of v. As emphasized by Harley (2009b) and Alexiadou (2009), a syntactic theory of morphology like DM cannot ignore this kind of evidence. As discussed earlier, Icelandic has several overt exponents of v, the most frequent and clear cases being *-ka*, *-ga*, *-na*, *-era* and *væða*. When verbs that are marked with these suffixes are nominalized, the verbal suffixes remain (although the *-a-* is deleted).[17] Some examples include *sein-k-un* 'delay', *fjöl-g-un* 'increase', *hnig-n-un* 'decline', and *fæ-kk-un* 'decrease'.

(80) *sein-k-un* 'delay'

```
            n
          /   \
         v     n
        / \    -un
    √SEIN  v
    'late'  -ka
```

(81) *fjöl-g-un* 'increase'

```
            n
          /   \
         v     n
        / \    -un
    √FJÖL  v
    'many'  -ga
```

(82) *hnig-n-un* 'decline'

```
            n
          /   \
         v     n
        / \    -un
    √HNIG  v
   'decline' -na
```

(83) *fæ-kk-un* 'decrease'

```
            n
          /   \
         v     n
        / \    -un
    √FÆ   v
    'few'  -kka
```

When verbs of this kind occur with a complex event meaning and argument structure, it only strengthens the case for including a little v head: both points reinforce each other. However, what is especially intriguing, as pointed out by Harley (2009b) and Alexiadou (2009), is the fact that these heads may show up with the meanings of simple event nominals (SENs) and referring/result nominals (RNs). This means that the SEN and RN readings cannot uniformly be derived by assuming that n is root attaching: they must be built, morphosyntactically, on verbs. Since we know that some SEN/RN readings can be built on top of verbs, and

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[17] This deletion could be due to the phonology, since deletion of a vowel the context of a following vowel is independently attested in Icelandic phonology. However, it is also possible that the *-a* is something like a theme vowel, which is not inserted in nominal contexts. I set aside the choice between these two options here.

we take the availability of a CEN reading to entail (for that reading) the presence of v (whether it is overt or not), I will in general assume that when a nominal is ambiguous between a CEN reading and a SEN and/or RN reading, all three readings are built on the same structure.

However, I want to be clear that we should absolutely not just set aside the relevance of overt verbal morphology as settled; far from it. The above conclusion, I think, should be made for the most frequent and productive SEN/RN readings. But as Lieber (2017) has emphasized, apparently deverbal nominalizations can get many more readings than is often acknowledged. For example, Lieber (2017) takes *government* to have an 'agent' reading, since it refers to the body that governs, and residence or *reservation* has 'location' reading, referring to a location where one resides (or has been reserved). But these examples do not force us to say that deverbal nouns get agent or location readings. It is entirely possible that these nouns are built on roots.

(84)
```
            n
          /   \
        v       n
      /   \    -ment
√GOVERN   v
          Ø
```

or

(85)
```
            n
          /   \
    √GOVERN     n
              -ment
```

(86)
```
            n
          /   \
        v       n
      /   \    -ence
√RESIDE   v
          Ø
```

or

(87)
```
            n
          /   \
    √RESIDE     n
              -ence
```

The question of whether 'agent' or 'location' readings are available in the genuinely deverbal structure cannot really be answered without looking to cases where v is overt, so that we can be sure that a v is present. So, for example, can *solid-ifi-cation* refer to an agent or group that solidifies things, or the location where solidification takes place? Can *terror-iz-ation* refer to the agent or group that terrorizes or the location where terrorizing takes place? My intuition is that they cannot, and this is in stark contrast to other readings that are easier to construct. For example, it is easy to imagine *solidification* referring to an entity that came about as a result of a solidifying event (as in "When you are finished solidifying the compound, take the solidification down to the supervising office for inspection").

The point here is that the overtness of v can tell us something about the construction of different readings. An overt verbalizer in the CEN reading is unsurprising, given previous assumptions from almost all perspectives. But the fact that v can be overt in SEN and some RN readings means that such readings must be constructible on verbs. That does not mean that all RN readings must be; but the most productive ones found in the context of overt v, such as the result reading, must be. I will therefore assume that whenever there is a noun that is ambiguous between a CEN reading and either an SEN reading or one of the productive RN readings (like the result readings), there is a verbalizer present for all readings.

2.4 Presence/absence of Voice in nominalizations

There are a variety of facts pertaining to the question of whether Voice is available in Icelandic nominalizations. In this section, I discuss some of the relevant issues/questions, and including morphology, passive vs. unaccusative readings, the availability of the self-action reading, restrictions on the subject, and agentive modifiers. Ultimately, the conclusion is that there is no compelling reason to assume voice inside nominalizations, and there are good reasons to assume it can be absent. I proceed with the conclusion that there is no voice head inside nominalizations.
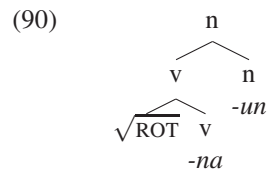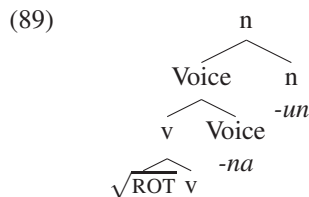
2.4.1 Overt Voice morphology

One indication of whether Voice is present in a nominalization is whether there is overt Voice morphology. For Icelandic, there are at least four morphological markings bearing on the presence or absence of Voice that we might consider. First, we might look for passive morphology, which in Icelandic is participial, much like English. Second, we might look for *-st* morphology, which marks certain anticausatives, and may signal the presence/absence of an external argument. Third, we may look for *-na* morphology, which marks certain anticausatives, and may signal the presence/absence of an external argument. Fourth, we may look for stem changes associated with the causative alternation, which may be taken to signal the presence/absence of an external argument.

In fact, we find nothing like passive participle morphology, much like in English. However, this might not be telling us much, since participial morphology arguably attaches outside of VoiceP, a view which has been defended from various perspectives (Embick, 2003, 2004; Bruening, 2013; Alexiadou et al., 2015). Nor do we find *-st* morphology. This is arguably because *-st* is a clitic licensed in the inflectional field, so it cannot appear in a nominalization; see section 3.3 for a discussion of issues raised by this fact, as well as the discussion of *opnun* 'opening' in section 2.4.2 below. The *-na* morpheme, however, can be found in certain cases that are arguably unaccusative CENs, such as *rotnun* 'rotting'.

(88) a. Veðurfar   er svalt, vaxtartími plantna   stuttur og **rot-n-un**   **lífrænna**
          weather.conditions is cold   growth.time plants.GEN short   and rot-NA-NMLZ organic
          efna   hæg
          material.GEN slow
          'The weather is cold, the growing season for plants short, and the rotting of organic material
          slow.' (mim.hi.is)

      b. Myglusveppir   [...] hafa það hlutverk að brjóta niður og flýta fyrir **rot-n-un**   **á**
          mold.mushrooms   have that role   to break down and speed up rot-NA-NMLZ on
          lífrænum leifum
          organic   residue
          'Mold mushrooms ... have the function of breaking down and speaking up the rotting of
          organic residue.' (mim.hi.is)

Wood (2015) suggests that *-na* is an overt realization of an expletive, specifierless Voice head, marking morphologically the absence of a syntactic or semantic external argument. If so, then examples like those in (88) suggest that n can attach on top of Voice, as in (89) below. However, Wood (2015, 126) notes that it is also possible to analyze *-na* as a particular kind of v, that occurs, for certain roots, in the absence of a transitive Voice. This suggestion would be compatible with the structure in (90), with no Voice head.

(89)   n   (90)   n
          ┌──────┴──────┐   ┌──────┴──────┐
        Voice   n   v   n
      ┌────┴────┐   -un   ┌─────┴─────┐   -un
      v   Voice   √ROT   v
    ┌──┴──┐   -na   ┌──┴──┐   -na
  √ROT   v   √ROT   v
         -na   -na

Therefore, the appearance of *-na* does not necessarily force us to conclude that Voice can appear inside nominalizations.[18]

As for stem morphology, certain transitive/intransitive pairs are marked by different forms of the root. This is illustrated with the verb *brenna* 'burn' in (91) below.

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[18] Note that Wood (2015) explicitly analyzed *-na* as a realization of Voice only because it allowed for a simpler formulation of the Vocabulary Item, not for any empirical reason.

(91) a. Báðar bækurnar **brunn**-u
          both   books.the.NOM burn.IND.PST.INTR-PL
          'Both the books burned.'

      b. Báðar konurnar **brenn**-d-u   bókina.
          both   women.the burn.TR.IND-PST-PL book.the
          'Both the women burned the book.'

Various linguists have proposed that this morphology marks the presence or absence of a Voice head (Schäfer 2008, 2012, Pitteroff & Alexiadou 2012, Pitteroff 2014, 2015, Wurmbrand 2015) or the distinction between a transitive and unaccusative Voice head (Wood, 2015). Assuming as much, one might ask what kind of stem morphology is found in nominalizations, and whether it tells us anything about the presence or absence of a Voice head. However, it is not trivial to know what to expect here. The the vowel shifts in question are affected also by verbal number, mood, tense, and aspect. Taking *brenna* 'burn' as an example, the transitive stem is always *brenn-*. The intransitive stem is also *brenn-* in the present tense, infinitive, and the present participle. The intransitive stem form only takes a different form as a past participle, where it is *brunn-*, and in the past tense, where it is *brann-* for singular indicative, *brunn-* for plural indicative, and *brynn-* for subjunctive. So it is not as simple as saying that the presence of Voice conditions one form and its absence another. To determine the stem form, one must know the tense, number, and mood the verb is embedded under (and/or whether it is embedded under participial structure).

So if we see a given form, it may not be clear if it is just n conditioning one of the available forms, or Voice+n. Consider now a nominal like *brun-i* 'burn'. The form of the root is one of the 'intransitive' ones, specifically the one that shows up in the past plural indicative. Most speakers I have asked find (92a) quite bad with the intended meaning, but accept (92b) (which was originally volunteered by Anton Karl Ingason).

(92) a. ?? **brun**-i   kvennanna   á bókinni
             burn-NMLZ women.the.GEN on book.the
             'the women's burning of the book'

      b. **brun**-i   jeppans á eldsneyti
             burn-NMLZ jeep.GEN on fuel
             'the jeep's burning of fuel'

For the verb, the *brun-* form only shows up in the intransitive. The fact that is shows up in the nominalization may suggest that unaccusative Voice can be present; or it might be the form that shows up when Voice is entirely absent. Or, it might say nothing about Voice at all, and simply be a form that the nominalizer n conditions.

Note that another way to nominalize *brenna* is *brennsla*, with the much more productive nominalizer *-sla*. In this case, the form of the stem doesn't say anything about the presence or absence of Voice one way or the other, since this form is present in both transitive and intransitive forms.[19]

(93) a. brenn-sla kvennanna   á bókinni
          burn-NMLZ women.the.GEN on book.the.DAT
          'the women's burning of the book'

      b. brenn-sla-n   á bókinni
          burn-NMLZ-the on book.the.DAT
          'the burning of the book'

Speakers generally find that the transitive reading is much more clearly available for this form. It is less clear if the intransitive reading is available. Some speakers find, at the very least, that the transitive reading is much more salient, and perhaps the only reading available. However, some speakers report that the intransitive reading can be brought out in sentences like:

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[19] Some speakers, however, find this form to be more salient in the context of burning calories.

(94) Ég horfði á brenn-slu-na   á skóginum.
      I   watched on burn-NMLZ-the.ACC on forest.the
      'I watched the burning of the forest.'

This difference manifests itself in the availability of *af hálfu* phrases, where most speakers find *af hálfu* more natural with *brennsla* than with *bruni*; and in fact, *bruni* is generally judged quite bad with *af hálfu*.

(95) a. * brun-i   ruslsins   af hálfu Jóns
               burn-NMLZ trash.the.GEN by part   John.GEN
               INTENDED: 'the burning of the trash by John'

      b. ? brenn-sla   ruslsins   af hálfu Jóns
               burn-NMLZ trash.the.GEN by part   John.GEN
               'the burning of the trash by John'

A similar contrast involves agentive contexts such as the following (where prohibiting something implies that an agent can choose to do something or not).

(96) a. Brenn-sla á bókum er stranglega bönnuð
              burn-NMLZ on books is strictly   prohibited
              'Burning of books is strictly prohibited.'

      b. ?? Brun-i   á bókum er stranglega bönnuð
              burn-NMLZ on books is strictly   prohibited

The data overall seem to suggest that the agentive, CEN reading based on the verb is not really available with *bruni*, but is the more salient reading with *brennsla*.

My interpretation of this data is that *bruni* is in fact a root nominalization, and *brennsla* is derived from the verb. This explains the fact that the special meaning of 'burn' is needed for (what resembles) argument structure with *bruni*, as shown in (92) above. The argument structure is not inherited by the verb, but built directly on the root and the nominalizer; speakers vary as to what readings the complement may have, and the genitive is often read as a possessor (which, of course, can encompass a variety of relations). True agent readings, then, are quite limited, perhaps impossible with *bruni*. With *brennsla*, however, the nominal is built on the verb, and true agent readings are possible—and in fact the most salient. As discussed further in the next section, speakers vary with different verbs and nouns as to whether the unaccusative reading, agentive reading, or both are available.[20] Whatever the explanation is for this fact, it does not in itself entail that Voice is present in the nominalization of either *brennsla* or *bruni*, and there is no evidence from the morphological form in favor of there being a Voice head in the structure.

2.4.2 Passive vs. Unaccusative Readings

We have already seen with *rotna* 'rot' that unaccusative readings are available in principle. A related question is whether a nominalization of a verb that can be either transitive or unaccusative gets a passive or an unaccusative reading. Consider first the nominalization of the verb *opna(st)* 'open'.

(97) a. Guðrún   opnaði hurðina.
              Guðrún.NOM opened door.the.ACC
              'Guðrún opened the door.'

---

[20] Possibly the existence of *bruni* leads to (a certain amount of) blocking of the unaccusative reading of *brennsla*. In the present theory, this would have to be blocking at the level of 'use' rather than grammar, in the sense discussed in Embick & Marantz (2008).

    b.   Hurðin   opnaði-st.
        door.the.ACC opened-ST
        'The door opened.'

(98) skyndileg opn-un   hurðarinnar
      sudden   open-NMLZ door.the.GEN
      'the sudden opening of the door'

    a. ✓ Passive reading (implicit agent)

    b. ✓ Unaccusative reading (door opens on its own)

As shown in (97), this verb can be transitive or unaccusative, and the unaccusative is marked with the *-st* morpheme. When it is nominalized, as shown in (98), it can refer either to the transitive/passive reading (with an implicit agent) or an unaccusative reading.

    We find a similar situation with 'explode'. As shown in (99), 'explode' can be transitive or intransitive, and there are different stem forms for each.

(99) a. Einn tilræðismannanna [. . .] sprengdi bílinn   þar.
        one attackers.the.GEN   exploded car.the.ACC there
        'One of the attackers blew up the car there.'[21]

    b. Bíllinn   sprakk þar.
        car.the.NOM exploded there
        'The car exploded there.'

However, both forms can be nominalized as *sprenging* 'explosion'. At first blush, some speakers find that the passive reading is more natural, and have a hard time interpreting the sentences in (100) as describing an explosion that happened on its own. Other speakers consider both readings available.

(100) a. spreng-ing-in   á bílnum
         explode-NMLZ-the on car.the
         'the explosion of the car'

        i. ✓ Passive reading (implicit agent)

        ii. % Unaccusative reading (car explodes on its own)

    b. spreng-ing   bílsins
         explode-NMLZ car.the.GEN
         'the explosion of the car'

        i. ✓ Passive reading (implicit agent)

        ii. % Unaccusative reading (car explodes on its own)

However, this effect is likely a matter of salience rather than the unaccusative reading being ruled out by the grammar. This is because it is possible to say (101), where it is much less likely that there is an agent.[22]

(101) spreng-ing   eldfjallsins
      explode-NMLZ volcano.GEN
      'the explosion of the volcano'

    a. ✓ Passive reading (implicit agent)

    b. ✓ Unaccusative reading (volcano explodes on its own)

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[21] http://www.ruv.is/frett/sjalfsmordsaras-a-knattspyrnuvelli, Jan. 16, 2019

[22] This observation came in the context of a discussion of a result reading of *sprenging* which refers to volcanic eruptions. For this, however, one has to use a plural and an 'in' PP, as in *sprengingar í eldfjöllunum* 'lit. the eruptions in the volcano'.

Thus, either the passive or unaccusative reading is available in principle with *sprenging* 'explosion', but one or the other may be more salient for a particular example.

In both of the examples discussed so far, the causative alternation is marked morphologically (with *-st* and stem changes, respectively). In connection with this, it is worth noting that *stækka* 'enlarge' does not—both the transitive and intransitive take the same set of forms. When nominalized, *stækkun* 'enlargement' is ambiguous, and may have the transitive/passive reading or the unaccusative one.

(102) a. Þau stæ-kk-uðu holuna.
           they large-KA-ed hole.the.ACC
           'They enlarged the hole.'

       b. Holan   stæ-kk-aði.
           hole.the large-KA-ed
           'The hole enlarged / got bigger.'

(103) stæ-kk-un   holunnar
       large-KA-NMLZ hole.the.GEN
       'the enlargement of the hole'

        i. ✓ 'Passive reading' (implicit agent)
       ii. ✓ 'Unaccusative reading' (hole got bigger on its own)

(104) stæ-kk-un-in   á holunni
       large-KA-NMLZ-the on hole.the.GEN
       'the enlargement of the hole'

        i. ✓ 'Passive reading' (implicit agent)
       ii. ✓ 'Unaccusative reading' (hole got bigger on its own)

Note, however, that at least two speakers found the passive reading much more salient than the unaccusative reading in (104). Speakers generally found both readings available (103), although some find the passive reading more salient, others the unaccusative reading.

Alexiadou (2017a) takes the ambiguity in Greek to signal that Voice may be absent, and when it is, the ambiguity arises. Applying the same reasoning to Icelandic suggests that Voice may be absent in Icelandic as well. It is less clear, however, whether the transitive/passive reading entails the presence of Voice. What the data in this subsection show is that Voice can be absent in nominalizations; it is still an open question whether Voice is always absent or whether it is sometimes present.

2.4.3 Self-Action Reading

Alexiadou (2017a) argues that Voice can be diagnosed by the presence of a 'self-action' restriction.[23] According to her, English *ing-of* nominals have such a restriction, whereas *-ation* nominals don't.

(105) a. The children were being registered.
            i. * Theme = Agent: The children registered themselves.
           ii. ✓ Theme ≠ Agent: The children were registered by someone.
       b. The report mentioned the painfully slow **registering** of the children.
            i. * Theme = Agent: The children registered themselves.
           ii. ✓ Theme ≠ Agent: The children were registered by someone.
       c. The report mentioned the painfully slow **registration** of the children.

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[23] See also Alexiadou et al. 2013, among others.

      i. ✓ Theme = Agent: The children registered themselves.

     ii. ✓ Theme ≠ Agent: The children were registered by someone.

Like the passive/unaccusative ambiguity above, this fact suggests that English *-ation* nominals **may** lack VoiceP—either always, or they are ambiguous between VoiceP and vP. Icelandic seems to pattern like English *-ation* nominals in this respect.

(106) Í skýrslunni var minnst   á
         in report.the was mentioned on

         skelfilega hæggenga skrá-ning-u   nemenda.
         painfully slow   register-NMLZ-ACC students
         'The report mentioned the painfully slow registration of students.'

    a. ✓ Theme = Agent: The students registered themselves.

    b. ✓ Theme ≠ Agent: The students were registered by someone.

This data point suggests that Icelandic nominalizations may lack Voice, and is compatible with the idea that they always lack Voice.

2.4.4 Restrictions on the subject

English nominalizations are subject to the 'direct participation effects', so that indirect causers are not possible subjects (Harley & Noyer, 2000):

(107) a. { The judge / adultery } separated Jim and Tammy Faye Bakker.

      b. { The judge's / *adultery's } separation of Jim and Tammy Faye Bakker.

Icelandic patterns like this as well. Although the agent reading is not perfect for all speakers, it is clearly a possible form, whereas the indirect causer 'adultery' is not.

(108) a. { Dómarinn / framhjáhald } aðskildi Brján og Maríu.
         { judge.the / adultery   } separated Brjánn and María

      b. Aðskilnaður { ?dómarans   / *framhjáhaldsins } á Brjáni og Maríu.
         separation   { ?judge.the.GEN / *adultery.the.GEN } on Brjánn and María
         '{ ?The judge's / *adultery's } separation of Brjánn and María.'

For English *-ation* nominals, Alexiadou et al. (2013, 90fn13) suggest that the restriction stems from the fact that the English subject is a possessor and not an argument of Voice. If so, this suggests that in Icelandic, too, the genitive is not an argument of Voice, but is rather a possessor.

2.4.5 Agentive modifiers

One final consideration that has played a role in the question of the presence or absence of Voice in a given structure, including nominalizations, involves a variety of modifiers that target the agent semantically (Alexiadou 2009; Bruening 2013). These modifiers include the following:

- Passive agent phrases
- Purpose clauses
- commitative PPs, instrument PPs

- manner/agent PPs
- *without* phrases
- Adverbs as in 'their eating of the cake politely'

As mentioned earlier, agentive by-phrases are quite impossible in Icelandic.

(109) a. eyðilegg-ing borgarinnar (*af óvininum)
           destr-NMLZ city.the.GEN (*by enemy.the.DAT)
           'the city's destruction by the enemy'

       b. eyðilegg-ing-in á borginni   (*af óvininum)
           destr-NMLZ-the on city.the.DAT (*by enemy.the.DAT)
           'the destruction of the city by the enemy'

However, it was also noted above that the agent can be introduced by an *af hálfu* phrases.

(110) eyðilegg-ing   borgarinnar af hálfu óvinarins
       destroy-NMLZ city.the.GEN by part   enemy.GEN
       'the destruction of the city by the enemy'

One could argue that *af hálfu* phrases necessarily pick out the VoiceP layer. After all, they do require a sentient agent, and they are not compatible with nominals that do not take agentive external arguments.

(111) a. * rot-n-un   laufblaðanna af   hálfu raka
             rot-NA-NMLZ leaves.the.GEN from part   humidity.GEN

       b. * rot-n-un   laufblaðanna af   hálfu garðyrkjumannsins
             rot-NA-NMLZ leaves.the.GEN from part   gardener.the.GEN

However, it is not clear why the more complex circumlocution is necessary in nominalizations but not verb phrases if the same projection is being targeted in both cases. The fact that ordinary by-phrases are impossible could be explained if Voice is absent in nominalizations, and Icelandic passive by-phrases really do need to attach to Voice. English would be different, then, in that its by-phrase is not so restrictive, and may attach to VoiceP or whatever nominal projection is responsible for introducing agents in nominals (e.g. PossP as suggested below).

   Turning to purpose clauses, they are quite possible, as we saw earlier.

(112) Söfn-un   sýna   til að skrásetja hvarf   sveppagróðurs.
       collect-NMLZ samples.GEN for to document disappearance mushrooms.GEN
       'The collection of samples to document the disappearance of mushrooms.'

However, this might be more diagnostic of an implicit argument, perhaps even an agentive one, without that argument necessarily being in or related to Voice. In my analysis in chapter 4, I will show how agentive semantics can be brought into the structure in a way that is similar to a Voice head, but without having an actual Voice head connected to a verb. Thus, some diagnostics might be connected not to Voice per se, but to external argument semantics.

   Relatedly, Bruening (2013) also discusses comitative PPs, instrument PPs, manner/agent PPs, and *without*-phrases, all of which he takes to be diagnostic of a Voice projection. Some of his examples from English are presented below:

(113) a. Darwin's observation of finches with his assistant   (comitative)
       b. the detection of the sound with an amplifier   (instrument)
       c. the Republicans' recognition of that fact without really registering its significance   (*without* phrase)

Icelandic seems to pattern like English in this respect, as shown in the following examples.

(114)   Comitative

      a.   athug-un   Darwins   á fuglunum með aðstoðamanni sínum
            observe-NMLZ Darwin.GEN on birds.the   with assistant   REFL.POSS
            'Darwin's observation of the birds with his assistant'

      b.   söfn-un   Darwins   á sveppum   með aðstoðamanni sínum
            collect-NMLZ Darwin.GEN on mushrooms with assistant   REFL.POSS
            'Darwin's collection of mushrooms with his assistent'

      c.   rannsók-n   málfræðingsins á hv-framburði   með aðstoðamönnum sínum
            investigate-NMLZ linguist.the.GEN on hv-pronunciation with assistant   REFL.POSS
            'the linguist's investigation of hv-pronunciation with his assistant'

(115)   Instrument

      a.   Viðgerð á   bílum með vitlausum verkfærum er slæm hugmynd
            repair   on cars   with wrong   tools.the   is bad   idea
            'The repairing of cars with the wrong tools is a bad idea.'

      b.   Viðgerð Guðrúnar   á bílnum mínum með sleggju   var mjög slæm hugmynd
            repair   Guðrún.GEN on car.the my   with sledge.hammer was very bad   idea
            'Guðrún's repairing of my car with a sledge hammer was a very bad idea.'

(116)   'Without'-phrase

      a.   samþykk-i   Repúblikana   á staðreyndinni án   þess að átta sig á mikilvæginu
            accept-NMLZ Republicans.GEN on fact.the   without it   to recognize importance.the
            'the Republicans' acceptance of the fact without recognizing its significance'

As above, however, I will suggest that this might actually relate more to external argument semantics than to the syntactic Voice position itself. I return to this issue in chapter 4.

    Finally, some linguists, most notably Fu et al. (2001), have argued that English nominalizations allow adverbs, and claimed that this fact supports the presence of a VP inside nominalizations. At least some of the adverbs brought up are the agentive sort, such as 'politely', which would suggest a Voice layer as well. Some of there examples are reproduced below.

(117)   a.   (While) the removal of evidence purposefully (is a crime), the removal of evidence unintentionally (is not).

        b.   His transformation into a werewolf so rapidly was unnerving.

However, any adverbs of this sort are quite unthinkable in Icelandic, whether agentive or not.

(118)   a.   algjör   eyðilegging þeirra á borginni
            complete destroy-NMLZ their   on city.the
            'their complete destruction of the city'

        b.   eyðilegging   þeirra á borginni (*algjörlega)
            destroy-NMLZ their   on city.the (*completely)
            'their destruction of the city (*completely)'

(119)   a.   át-Ø   Jóns   á kökunni (*kurteisislega)
            eat-NMLZ John.GEN on cake.the (*politely)
            'John's eating of the cake (*politely)'

        b.   ummynd-un   hans í varúlf   (*svo skyndilega)
            transform-NMLZ his   in werewolf.ACC (*so suddenly)
            'his transformation into a werewolf (*so suddenly)'

It is not clear why English and Icelandic seem to differ in this way. Even in English, such adverbs are quite marginal for many speakers, and rarely perfect; the correspond adjective is invariably better. Given the other similarities between Icelandic and English, I would tentatively suggest that the contrast is related not to nominalizations per se, or the presence of Voice, but to the licensing of the adverbs themselves.[24] At any rate, Icelandic certainly provides no extra support for a Voice layer (or even a vP layer, as argued below) on the basis of adverbs.

2.4.6 Summary

Overall, I conclude that there is little evidence in favor of a Voice head inside Icelandic nominalizations. The morphological evidence is inconclusive, there is positive evidence that Voice can be absent (the passive/unaccusative ambiguity, the self-action reading), and at least two arguments that Voice is generally absent (restrictions on the subject, impossibility of by-phrases). The best arguments in favor of Voice stem from the availability of agentive modifiers, as discussed in the previous section. However, all of these seem to be targeting semantic agency, and will be argued in chapter 5 to be compatible with the absence of Voice, as long as there is some head introducing agency.

2.5 Summary

In this chapter I have taken a detailed look at the properties of Icelandic nominalizations in the context of a broad theoretical background. I have shown that they are in most ways very similar to English *-ation*-type nominals. There are a variety of overt nominalizers, like English *-ment, -ation, -al, -ance*, etc. More importantly, they have the general ambiguity between complex event, simple event, and referring nominal readings. The complex event nominals are similar enough to English that arguments pertaining to English should affect our analysis of Icelandic, and vice-versa. It seems highly unlikely that English and Icelandic would exhibit these properties for fundamentally different reasons. Finally, we saw clear evidence that Icelandic nominalizations may include a v head, and still get the ambiguity. However, we saw little reason to assume the presence of a Voice head. At best, Voice is optional, but in the absence of compelling evidence to the contrary, we will proceed with the assumption that Voice is generally not present inside nominalizations.

The next chapter will build on the conclusion that Icelandic nominalizations are like English nominalizations. There, I will present Icelandic-specific evidence against the view that complex event nominalizations are built on verb phrases. Instead, I will propose that nominalizations are built by combining heads together without any arguments. The structure proposed will be identical for all readings, accounting for the ambiguity in a fundamental way. In chapter 4, I provide further support for the complex heads analysis by looking at the locality conditions for conditioning allosemy on roots, with a focus on various patterns of prepositional prefixing. In chapters 5 and 6, I work out the details of how the ambiguity of derived nominals is analyzed in terms of contextual allosemy of roots and functional heads. Chapter 5 focuses on CENs and argument structure inheritance, while chapter 6 focuses on SEN, RNs, and idiosyncratic root meaning.

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[24] Mark Norris (p.c.) informs me that there is a similar contrast in Estonian, where otherwise fully nP-like nominalizations license adverbs.

Chapter 3
Phrasal layering vs. complex heads

This chapter builds on the results from the previous chapter, starting with the conclusion that nominalizations contain at least a v head, but may or may not contain a voice head. It then compares two ways of accomplishing this. The first is to nominalize a verb directly at the head level, before the verb combines with anything. I call this the complex head analysis. The second is to nominalize a verb phrase, complete with its arguments. I call this the phrasal layering analysis. I show that Icelandic raises problems for the phrasal layering analysis that are not raised for the complex head analysis, and argue in favor of the latter.

3.1 Case-licensing and case-marking

The first and primary problem discussed in this chapter involves case-marking patterns. I will show that under a phrasal layering analysis, we would expect Icelandic nominalizations to inherit case-marking patterns from their verbal sources, which they in fact do not. The primary focus will be on dative themes, because they are most distinctive of Icelandic (in contrast to related languages with rich case-marking systems) and given that themes can easily be inherited by nominalizations, they constitute the clearest example of the problem from case-marking. I will describe dative direct object themes first, and then dative subjects. I will then discuss some other non-canonical case frames, and show that they too cannot be inherited.

3.1.1 Dative objects

Recall that the Parallel Structures analysis, where noun and verb are independently derived from the same, category-neutral root, faces the challenge that arguments are not really 'optional', and that argument structure seems to be inherited—obligatorily so, when event structure is inherited. Moreover, they face the problem that some nominalizations have overt realizations of v, indicating that they must have been derived from a verbal source. These problems holds for Icelandic just as much as for English, so we will set aside the Parallel Structures analysis for the time being.

The alternative has generally been some version of the Phrasal Layering analysis, where what is nominalized is a full verb phrase, with any number of functional projections above it. For example, the structure of a complex event nominal according to Alexiadou (2017b) is along the lines of (120) (although there she put the theme in SpecvP).

(120)   *the collection of mushrooms*

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                      nP
                  ╱        ╲
                n          AspP
              -tion      ╱      ╲
                       Asp      VoiceP
                              ╱       ╲
                          Voice        vP
                                     ╱    ╲
                                    v      DP
                                  ╱  ╲   mushrooms
                            √COLLECT  v
```

However, it is worth pointing out right away that a phrasal layering analysis need not necessarily involve all of the functional structure seen in (120). Alexiadou (2017a) argues that for CENs, n must attach at least as high as vP in order to inherit argument and event structure. When the agent is present, Voice will be in the structure as well. The minimal Low Attachment analysis of inheritance, then, would involve a nominalizer on top of a vP, as in (121).

(121)   nP
```
                  ╱        ╲
                n           vP
              -tion      ╱      ╲
                        v        DP
                      ╱  ╲    mushrooms
                √COLLECT  v
```

According to this analysis, we would expect certain case marking patters to be inherited by a nominalization. In this section we first consider dative object themes. Consider NOM-DAT verbs like *bjarga* 'rescue' and *aka* 'drive'. Both of these verbs assign dative to the theme object.

(122)   a.   Þau   björguðu sjómanninum.
               they.NOM rescued   sailor.the.DAT
               'They rescued the sailor.'

         b.   Guðrún   ók   leigubílnum.
               Guðrún.NOM drove taxi.the.DAT
               'Guðrún drove the taxi.'

(123a–b) illustrate the well-known fact that this dative case is preserved under passivization, unlike the accusative case on accusative themes.

(123)   a.   Sjómanninum var bjargað (af þeim).
               sailor.the.NOM was rescued (by them)
               'The sailor was rescued (by them).'

         b.   Leigubílnum var ekið   (af Guðrúnu)
               taxi.the.DAT was driven (by Guðrún)
               'The taxi was driven by Guðrún.'

Since assignment of dative to a theme is at least somewhat lexically idiosyncratic (see discussion below), the vast majority of researchers put the feature leading to dative case on direct objects within the verb phrase domain, on either v or Voice (if not the lexical verb root itself). (See, for example, Svenonius 2002, 2005, 2006; Sigurðsson 2012b; Jónsson 2013b; Alexiadou et al. 2014; Wood 2015 for v; and Schäfer 2008 and

Sigurðsson 2017a, 54 for Voice.) Thus, the structure of the verb phrase, up to VoiceP, is uncontroversially something like (124).

(124)

```
                    VoiceP
                   /      \
            Voice(DAT)     vP
                          /  \
                    v(DAT)    DP
                    /   \    leigubíll
                 √AK   v(DAT)  'taxi'
                'drive'
```

Putting the dative feature this low means that further operations, such as attaching a passive head on top of VoiceP, or entering into the Agree-domain of T, will have no effect on the case-marking. Case-marking is determined low, and maintained for the rest of the derivation.

Turning to nominalizations, we can now see that the Phrasal Layering analysis, all of the vP-internal material needed to determine dative case is present.

(125)

```
            CEN
            nP
           /   \
          n     AspP
        -stur   /   \
             Asp     VoiceP
                    /      \
             Voice(DAT)     vP
                           /  \
                     v(DAT)    DP
                     /   \    leigubíll
                  √AK   v(DAT)  'taxi'
                 'drive'
```
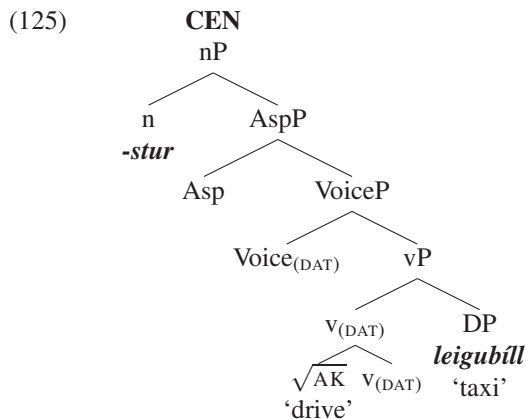
The nominalizer attaches on top of AspP, above VoiceP, and would not generally be expected to override the assignment of dative. Instead, we would expect to find dative on the theme of a noun derived from a dative-assigning verb.

This is not what we find: the thematic argument of such verbs can be inherited, as shown by Maling (2001), but it cannot be dative. What we find is that nominalizations seem to take the same set of forms no matter what the source verb's case frame would be. This is shown in (126) and (127) for nominalizations of *bjarga* 'rescue' and *aka* 'drive', respectively.

(126) a. björg-un   sjómannsins
           rescue-NMLZ sailor.the.GEN
           'the rescue of the sailor'

       b. * björg-un   sjómanninum
           rescue-NMLZ sailor.the.DAT
           INTENDED: 'the rescue of the sailor'

(127) a. ak-stur   leigubílsins
           drive-NMLZ taxi.the.GEN
           'the driving of the taxi'

       b. ak-stur   Guðrúnar   á leigubílnum
           drive-NMLZ Guðrún.GEN on taxi.the.DAT
           'Guðrún's driving of the taxi.'

   c. * ak-stur   leigubílnum
       drive-NMLZ taxi.the.DAT
       INTENDED: 'the driving of the taxi'

(128) shows another example, from Jóhannsdóttir (1995), with the verb *loka* 'close' (128d) is added here).

(128)   Lögreglan   lokaði spilavítinu.
       police.the.NOM closed casino.the.DAT
       'The police closed down the casino.'

    a.   Lok-un   spilavítisins   vakti deilur   manna.
       close-NMLZ casino.the.GEN woke arguments people.GEN
       'The closing of the casino made people argue.'

    b.   Lok-un-in   á spilavítinu   vakti deilur   manna.
       close-NMLZ-the on casino.the.DAT woke arguments people.GEN
       'The closing of the casino made people argue.'   (Jóhannsdóttir, 1995, 72)

    c. * Lok-un(-in) spilavítinu   vakti deilur   manna.
       close-NMLZ casino.the.DAT woke arguments people.GEN

One might be tempted to take these examples to suggest a return to the Parallal Structures analysis, where the nominalizations are built not on verbs, but on roots. The example in (129), however, speaks against this. There, we see an overt verbalizer, *-ga*, which is contained in the nominal. This example is transparently built on the verb, and not a category neutral root.

(129)   Addamshjónin   fjöl-g-uðu   börnunum.
       the.addamses.NOM increase-GA-PAST children.the.DAT
       'The Addamses had more children.'

    a.   Fjöl-g-un   barnanna   vakti athygli.
       increase-GA-NMLZ children.the.GEN drew attention
       'The increasing of the children drew attention.'

    b.   Fjöl-g-un-in   á börnunum   vakti athygli.
       increase-GA-NMLZ-the on children.the.DAT drew attention
       'The increasing of the children drew attention.'   (Jóhannsdóttir, 1995, 72)

    c. * Fjöl-g-un   börnunum   vakti athygli.
       increase-GA-NMLZ children.the.DAT drew attention

Further examples from Maling (2001, 449) are given in (130)–(136), where in each case we see a dative-assigining verb that takes a genitive argument under nominalizations.

(130) a. Ég   breytti fundartímanum   b. breyt-ing   fundartímans
       I.NOM changed meeting.time.the.DAT   change-NMLZ meeting.time.the.GEN
       'I changed the time of the meeting.'   'the changing of the time of the meeting'

(131) a. Hann eyddi skjalinu   óvart.   b. eyð-ing   skjalsins
       he.NOM deleted file.the.DAT accidentally   delete-NMLZ file.the.GEN
       'He accidentally deleted the file.'   'the deletion of the file'

(132) a. Hann frestaði   fundinum.   b. frest-un   fundarins
       he   postponed meeting.the.DAT   postpone-NMLZ meeting.the.GEN
       'He postponed the meeting.'   'the postponement of the meeting'

(133) a. Hún   lokaði versluninni   kl. 9.
           she.NOM closed store.the.DAT 9 o'clock
           'She closed the store at 9 o'clock.'

       b. lok-un   verslunarinnar
           close-NMLZ store.the.GEN
           'the closing of the store'

(134) a. Þeir úthluta   verðlaununum eftir mótið
           they distribute prizes.the.DAT after the.meet
           'They distribute the prizes after the meeting.'

       b. úthlut-un   verðlaunanna
           distribute-NMLZ prizes.the.GEN
           'the distribution of the prizes'

(135) a. Íslendingar útrýmdu   geirfuglinum.
           Icelanders   exterminated the.great.auk.DAT
           'Icelanders exterminated the great auk.'

       b. útrým-ing   geirfuglsins
           exterminate-NMLZ the.great.auk.GEN
           'the extermination of the great auk'

(136) a. Þeir   útskúfuðu morðingjanum.
           they.NOM banished   murderer.the.DAT
           'They banished the murderer.'

       b. útskúf-un   morðingjans
           banish-NMLZ murderer.the.GEN
           'the banishment of the murderer'

This is a general problem for a Phrasal Layering analysis. Even if n Case-licenses the object, this is considered a *structural* case; it would not be expected to manifest as genitive if dative had already been determined. Dative on direct objects is retained in passives, so the presence of passive Voice would not make a difference to the morphological case properties.[1]

Lack of case inheritance follows on the present proposal: there are no arguments within the domain of verbal heads that would determine case marking. Even if the DAT-assigning feature is on v, there are no DPs local enough to it to receive dative case.

Instead, the DPs involved are arguments of the nP, and are therefore marked however arguments of nP are marked, such as with genitive case or within a PP.

3.1.2 Dative themes of unaccusatives

As mentioned above, some analyses of Icelandic case-marking take dative direct objects to be assigned dative by a special Voice head, rather than a v head (Schäfer 2008; Sigurðsson 2017a, 54). If this is always the case, the data above might be interpreted as a showing that nominalizations lack a Voice layer, a proposal with independent plausibility, as we have seen. This would mean that the reason that dative is not retained although argument structure is inherited stems from the absence of the dative-assigning Voice head in nominalizations.

---

[1] See Ingason (2016, 71) for a related point about non-inheritance of case-marking patterns by nominals, with a different nominal construction.

However, if the proposal that dative is assigned by Voice is correct for some cases, it cannot be right for all cases. To see why, it is worth discussing what motivated the placement of the dative feature on Voice to begin with. The proposal stems from work by Svenonius (2001, 2002, 2005, 2006), drawing on generalizations by Maling (2001, 2002a,b), and the idea is that the licensing of the dative object connects directly to the way that the external argument is involved in the event. Consider the examples with *moka* 'shovel' in (139).

(139) a. Guðrún   mokaði **tröppurnar**.
           Guðrún.NOM shoveled steps.the.ACC
           'Guðrún shoveled the steps.'

       b. Guðrún   mokaði **snjónum**.
           Guðrún.NOM shoveled snow.the.DAT
           'Guðrún shoveled the snow.'

Here, we see that *moka* 'shovel' assigns accusative when the theme is *tröppurnar* 'the steps', but dative when the theme is *snjónum* 'the snow'. I note in passing that either of these kinds of arguments can occur as the genitive in nominals, as shown by the following attested examples.[2]

(140) Þrjátíu björgunarsveitarmenn unnu   við mok-stur   snjós   út úr   húsunum.
       thirty rescue.team.workers   worked with shovel-NMLZ snow.GEN out out.of house.the.DAT
       'Thirty rescue team workers worked on the shoveling of snow out of the house.'[3]

(141) Verklagsreglur í tengslum við mok-stur   gatna   og sölt-un   verða því yfirfarnar…
       procedure.rules regarding   shovel-NMLZ streets.GEN and salt-NMLZ will.be thus reviewed
       'The procedural rules in connection with the shoveling and salting of streets will therefore be reviewed…'[4]

Why does *moka* 'shovel' assign dative sometimes and accusative other times? The idea is that dative is assigned when the event continues without the external argument being involved. That is, the external argument is only involved in the initiating sub-event. So, for example, when Guðrún stops moving, the steps instantly stop being involved in the shoveling, so the steps are accusative. However, even when Guðrún stops moving, the snow may continue flying through the air, so the snow is dative. Since the generalization about the dative object involves properties of the external argument, so the reasoning goes, the dative feature should be on Voice, which introduces this special kind of external argument.

There are a number of problems with encoding such a generalization directly into the grammar, most of which will not concern us here. See Jónsson (2010, 2013a,b) and Wood (2015, 137–138) for some discussion. What is particularly relevant for present purposes is that dative can also be assigned to internal arguments of unaccusatives with no external argument at all, and such arguments can still be genitive in nominalizations.[5] Consider the examples in (142)–(145).

(142) a. **Menningunni**   hefur hnig-na-ð.
           culture.the.DAT has   declined-NA-PTCP
           'The culture has declined.'

       b. hnig-n-un   **menningarinnar**
           decline-NA-NMLZ culture.the.GEN
           'the decline of the culture'

(143) a. **Vélinni**   sein-ka-ði.
           plane.the.DAT late-KA-ed
           'The plane delayed.'

---

[2] One also finds both as the nonheads of synthetic compounds, as in *snjómokstur* 'snow-shoveling' and *götumokstur* 'street-shoveling'.

[3] http://www.visir.is/g/2005501040411, Jan. 24, 2019

[4] https://www.kopavogsbladid.is/yfirfara-verklagsreglur-vegna-snjomoksturs/
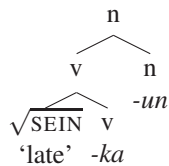
[5] The example in (143b) comes from Maling (2001, 449).

b.   sein-k-un   **vélarinnar**
          delay-KA-NMLZ plane.the.GEN
          'the delay of the plane'

(144)   a.   **Íbúum**   Reykjavíkur   hefur fjöl-ga-ð.
           residents.DAT Reykjavík.GEN has   increase-GA-PTCP
           'The population of Reykjavík has increased.'

      b.   fjöl-g-un   **íbúa**   Reykjavíkur
           increase-GA-NMLZ residents.GEN Reykjavík.GEN
           'increase of the population of Reykjavík'

(145)   a.   **Sjúklingum** hefur fæ-kka-ð   á þessu sjúkrahúsi.
           patients.DAT have decrease-KA-PTCP at this   hospital
           'The number of patients has decreased at this hospital.'

      b.   fæ-kk-un   **sjúklinga**   (á þessu sjúkrahúsi)
           decrease-KA-NMLZ patients.GEN (at this   hospital)
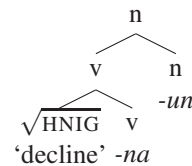   'the decrease of patients (at this hospital)'

Dative in the (a) examples cannot be attributed to a dative feature on Voice. Either there is no Voice present, or if it is, it would be a defective, expletive Voice that has no external argument semantics. Certainly, one cannot, in these examples, point to a special initiator involved only in the initiating subevent to explain dative case on these themes; as far as can be told, there is no initiator here. The example in (142) with *hnigna* 'decline' is particularly telling, since it is marked with the *-na* morpheme, which only shows up in the absence of an external argument, possibly in the absence of any Voice head. So the *-na* morphology tells us that v is there, but Voice (or its argument) is not.[6] This means that the feature must be on v or lower.[7] Despite this, it can assign dative as a verb, but not as a derived noun.

Moreover, the cases above all have overt verbalizing morphology, such as with *-ka*, *-ga* and *-na*.

(146)   *sein-k-un* 'delay'

             n
          ╱ ╲
         v   n
       ╱ ╲ *-un*
    √SEIN v
    'late' *-ka*

(147)   *fjöl-g-un* 'increase'

             n
          ╱ ╲
         v   n
       ╱ ╲ *-un*
    √FJÖL v
    'many' *-ga*

(148)   *hnig-n-un* 'decline'

             n
          ╱ ╲
         v   n
       ╱ ╲ *-un*
    √HNIG v
    'decline' *-na*

(149)   *fæ-kk-un* 'decrease'

             n
          ╱ ╲
         v   n
       ╱ ╲ *-un*
    √FÆ v
    'few' *-kka*

This means that we cannot try to account for the above data by arguing that they are really root-attaching nominals (and thus irrelevant to the question of case-inheritance). They are overtly derived from the *verbal* form, so from a layering perspective, there must be at least a vP (cf. Harley 2009b; Alexiadou 2009).

---

[6] Thus, one cannot, for this verb, try to posit a silent external argument responsible for the event, as is sometimes done for accusative subject constructions (Haider, 2001; Platzack, 2006; Schäfer, 2008, 2012; Wood, 2017); the morphology is telling us that there is no external argument there, and this is different from accusative subject constructions (Wood, 2017).

[7] It could, in principle, be connected to the root or the structure of the complement. I will assume that the feature is on v, for the reasons discussed in Wood (2015, 135–138).

(150)   **Phrasal Layering Analysis, vP only**

```
                    nP
                   /  \
                  n    vP
                -un   /  \
                  v_DAT    DP
                 /   \   menningarinnar
           √HNIG  v_DAT  'culture.the.GEN'
           'drive'  -na
```

However, this should be enough to assign dative, which, as we have seen, is in fact not possible. Again, the present account does not face this problem, even if v does have a dative-assigning feature. Either the genitive is the complement of n or it is in SpecPossP.

(151)
```
                    nP
                   /  \
                  n    DP
                 / \  menningarinnar
             v_DAT  n  'culture.the.GEN'
            /   \  -un
       √HNIG  v_DAT
       'decline'  -na
```

(152)
```
                    PossP
                   /     \
                  DP      Poss'
           menningarinnar  /   \
           'culture.the.GEN' Poss  n(P)
                              /  \
                          v_DAT   n
                         /   \   -un
                    √HNIG  v_DAT
                    'decline'  -na
```

Either way, the DP is too far away from the dative v to be assigned dative.

3.1.3 On DP-internal datives

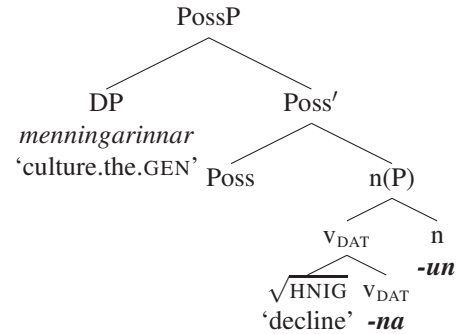One possible response to the empirical facts above might be to lay the blame on the licensing of dative case. One might think that for some principled reason, dative DPs are generally not possible inside nPs. It is therefore worth pointing out that there are some constructions showing that this is not the case in general. Certain kinds of body-part possession can be expressed with an nP-internal dative, as in the slogan of the coffee shop Kaffitár.

(153)   Leggur heiminn   að **vörum þér**.
         puts   world.the.ACC to lips   you.DAT
         'Puts the world to your lips.'

This kind of DP-internal dative is only possible when the DP is contained within a PP. However, it does show that there is no general ban on dative case inside a DP.[8]

Ingason (2016) discusses another construction where a dative DP appears inside an nP. This construction is presented in (154).

---

[8] Ingason (2016) points out that although many examples of this construction sound poetic or bookish, "they are nevertheless common enough to have a fairly robust status in the modern grammar" (Ingason, 2016, 82).

(154) Þeir dönsuðu til skemmt-un-ar   stelpunum.
       they danced   for entertain-NMLZ-GEN girls.the.DAT
       'They danced for the girls' entertainment.'

Ingason (2016, 82) argues that this construction is distinct from the dative possessor construction above, but shows that the dative DP in (154) is internal to the nP. He also argues that the dative is not inherited from any verb (despite the fact that this construction is very frequently based on nominalized verbs), nor is it assigned or licensed by the preposition *til* 'for'. This shows that if some aspect of a construction assigns dative to a DP, there is nothing in principle stopping that DP from realizing its dative case nP-internally.

One could stipulate that the dative feature of the v head is deleted by impoverishment in the context of an n head. Such an impoverishment rule is in fact motivated for *-st* anticausatives in the verbal domain (Wood 2015). Then one could take the genitive to be the unmarked 'elsewhere' case inside an nP. However, this alternative has no independent motivation, and it would not be able to extend to the other case frames discussed in section 3.1.4, and it would also not help with the problem of *á*-PPs discussed in section 3.2.[9] The independent motivation for assuming such an impoverishment rule in the case of verbs comes from the cases where it does not apply—datives that are not licensed by v. But as we will see in the next section, even these fail to realize their dative case in nominalizations, so one would have to posit a series of unrelated morphological rules, which all have the effect of removing any morphological evidence that there is a verb phrase inside nominalizations.

3.1.4 Other case frames

The previous sections showed that verbs with dative themes can be nominalized, and their theme argument inherited, but the dative case is lost. This is the most empirical robust domain showing noninheritance of case, because themes are so robustly inherited as arguments of nominalizations. However, we pointed out in the previous subsection that there are some ways of accounting for the dative theme facts alone. Therefore, it is important to point out that it is not just dative theme verbs that do not pass their case properties on to the nominal. In fact, verbal case information, robust as it is in Icelandic, is never inherited by the deverbal nominal.

First, consider the verb *vanta* 'need', which takes an accusative subject and an accusative object. When this verb is nominalized, however, we see the same pattern that we saw above: the derived nominal can take a genitive and/or an *á*-PP corresponding to its verbal arguments.

(155) Fyrirtækið   vantaði gott starfsfólk.
       company.the.ACC needed good employees.ACC
       'The company needed good employees.'

   a. vönt-un   góðs starfsfólks
       need-NMLZ good employees.GEN
       'the need of good employees' (ambiguous)

   b. vönt-un   fyrirtækisins   á góðu starfsfólki
       need-NMLZ company.the.GEN on good employees.DAT
       'the company's need of good employees'

Note that as above, the genitive can correspond to the subject or the object, with the subject reading being unambiguous is if the object is expressed as an *á*-PP. We find the same pattern for other accusative-subject verbs like *skorta* 'lack/need' and *langa* 'want', which are nominalized as *skortur* and *löngun*, respectively.

---

[9] In fact, it would only sharpen the problem with *á*-PPs. If the default realization of a caseless DP inside an nP is genitive case, then it only underlines the implausibility of any sort of "*á*-insertion" rule.

As above, all analyses of accusative subject verbs have the accusative status of the subject determined within the VoiceP domain. If a nominalizer attached on top of VoiceP, we would expect accusative-accusative to be inherited, contrary to fact. If a nominalizer attached lower than VoiceP, such as on vP, at least one analysis, that of Wood (2017), would make a different prediction. There, it is claimed that both accusatives are in fact structural, and conditioned under Dependent Case theory by the presence of a silent external argument clitic in SpecVoiceP. Under that analysis, depending on our other assumptions, nominalizing on vP but not VoiceP would lead us to expect either NOM-ACC, GEN-GEN, or perhaps even some combination of NOM-GEN, GEN-ACC, etc. (depending on what the rules are for 'elsewhere' genitive inside a noun phrase). However, none of these patterns are possible. The best we could do is try to say that you end up with GEN-GEN, but that is ruled out for morphological reasons, so you insert *á* on the second argument, and (re)assign it dative. This is clumsy at best, and the *á*-insertion rule is problematic, as discussed below. Probably even more problematic is the fact that it gets a special status in this construction, as a kind of morphological repair, which is not motivated for *á*-PPs elsewhere, as discussed below.

Another problem for the phrasal layering analysis concerns the readings available in (155a), where there is only one genitive. There we see that the genitive can correspond to the experiencer without the stimulus being present. But in the case of the verb, this is quite impossible. The verb *vanta* can take one or two accusative arguments, but when it takes one, the meaning is 'lack' and the argument is not an experiencer.

(156) a. Guðrúnu   vantaði gott starfsfólk.
           Guðrún.ACC needed good employees.ACC
           'Guðrún needed good employees.'

       b. Starfsfólkið   vantaði.
           employees.the.ACC lacked
           'The employees were missing/absent/lacking.'
           ≠ 'The employees felt a need.'

If the nominalizer attached on top of a vP, we would expect that the 'theme'-like argument (or stimulus) would always be present, with the experiencer being optional. We would not expect the experiencer to be present without the 'theme'-like argument (or stimulus). In the present analysis, the range of meanings available for the genitive will stem from the general interpretation options for genitive possessors and/or complements of the noun.

We find a similar set of issues, which manifest slightly differently in the details, with dative-nominative verbs like *misheyrast* 'mishear'. When this verb is nominalized, as above, we see the same, general nominalization pattern: the derived nominal can take a genitive and/or an *á*-PP corresponding to its verbal arguments.

(157) Þér   hafa víst misheyr-st orð mín!
       you.DAT have surely misheard-ST words my
       'You have surely misheard my words!'

       a. misheyr-n   Jóns   olli vandræðum
           mishear-NMLZ John.GEN caused problems
           'John's mishearing caused problems'

       b. misheyr-n   Jóns   á orðum mínum olli   vandræðum
           mishear-NMLZ John.GEN on words my   caused problems
           'John's mishearing of my words caused problems'

The experiencer can be expressed in *misheyrn* as a genitive, and the stimulus can be expressed as an *á*-PP. The same pattern can be found with *vanþóknast* 'dislike/displease'.[10]

(158) a. María   vanþóknaðist Guðrúnu.
           María.NOM displeased   Guðrún.DAT
           'María displeased Guðrún.'

----

[10] With this verb, the nominative is frequently the subject, but I take the underlying argument structure to be the same as a dative-nominative verb like *mislíka* 'dislike'. See Wood & Sigurðsson (2014).

b. Guðrún   hefur vanþókn-un   á   Maríu.
Guðrún.NOM has   displease-NMLZ on María.DAT
'Guðrún has a dislike of María.'

c. vanþókn-un   Guðrúnar   á   Maríu
displease-NMLZ Guðrún.GEN on María.DAT
'Guðrún's dislike of María'

As above, every analysis of dative-nominative verbs has the dative case determined internal to the VoiceP, usually internal to the vP. Although some treat the nominative as being lexically selected as well, there are very good reasons to treat the nominative as a structural, elsewhere case (Wood & Sigurðsson, 2014). Most frequently, the dative experiencer is considered the specifier of an Appl head (McFadden, 2004; Sigurðsson, 2012b; Wood & Sigurðsson, 2014; Wood, 2015; Ingason, 2016; Sigurðsson, 2017a), and Wood (2015) argues that it is a low Appl head. If a nominalizer attached on top of VoiceP or vP, one would expect the dative case to be inherited, and the nominative to either show up as nominative or as genitive. This is, as we see, not what happens.

It is important to recognize that the dative here is not assigned by a dative v, so any explanation of the dative theme facts connected to dative v would not apply here. This is shown by the fact that in the verbal domain, *misheyrast* 'mishear' is an *-st* verb, and as discussed in the previous subsection, *-st* triggers deletion of the dative feature on v. The fact that the dative case survives here shows (and was in fact one of the motivating facts to show) that this dative is not assigned by v, and *-st* does not trigger deletion of the dative-assigning property of Appl. So if we are to assume a deletion of this kind for nominals, it would have to be a separate rule.

But even if we assume such a rule, we run into problems. First, we would have to explain why the experiencer could not be expressed as an *á*-PP. As explained elsewhere, the phrasal analysis really requires this as a general option. Instead, only genitive is possible.

(159) a. Misheyr-n   Guðrúnar   (olli   vandræðum)
mishear-NMLZ Guðrún.GEN (caused problems)
'Guðrún's mishearing caused problems.'

b. * Misheyr-n-in   á   Guðrúnu   (olli   vandræðum)
mishear-NMLZ-the on Guðrún.DAT (caused problems)
INTENDED: 'Guðrún's mishearing caused problems.'

Second, we would have to explain why the *á*-PP is the only natural option for the stimulus: the genitive is quite marked, though perhaps not fully out, as the thing that is misheard.

(160) a. ?? Misheyr-n   orða   minna   (olli   vandræðum)
mishear-NMLZ words.GEN my.GEN (caused problems)
INTENDED: 'The mishearing of my words caused problems.'

b. Misheyr-n-in   á   orðum   mínum   (olli   vandræðum)
mishear-NMLZ-the on words.DAT my.DAT (caused problems)
'The mishearing of my words caused problems.'

If the genitive is the default elsewhere case, then under any analysis of the nominative we expect it to be able to be genitive in the nominalization; but it cannot be.

One might try to account for *misheyrn* by assuming that the dative is introduced in an ApplP, and perhaps Appl is not possible inside nominalizations. The claim would then be that the experiencer is in fact not inherited by the nominalization, and the apparent experiencer is really a possessor. It can only be genitive, and not an *á*-PP, because *á*-PPs are not introduced as possessors. However, it is not clear why, theoretically, an ApplP inside a vP would be disallowed in a nominalization. Moreover, it is not obvious that there is a total ban on Appl datives in nPs to begin with. Ingason (2016) argues that there is a systematic construction in Icelandic that involves an nP-internal ApplP. He shows that this ApplP is not inherited from any verbal

construction. His analysis the suggests that there is not any outright ban on ApplP datives inside nPs, so it is a mystery why inheritance of Appl dative should be impossible on the phrasal layering analysis. Moreover, a ban on inheriting vPs containing Appl would only account for the experiencer. The stimulus is clearly a possible inherited argument, as shown by the fact that it can occur as an *á*-PP. But then we would expect it to have an alternative realization as a genitive, and as shown above, such a realization is highly marked at best.

   The Phrasal Layering analysis would have to account for all of these case alternations, and in one direction. By contrast, the present analysis predicts the uniform nP syntax, where the case-marking properties of verbal heads will not be relevant.[11]

(161)

In chapter 5, I will discuss in more detail how the relation between n and its complement is interpreted, such that the experiencer reading is not available there, and the *á*-PP is the only option.

3.1.5 Should we even expect case patterns to be inherited?

Whether we expect case patterns to be inherited by a derived nominal of course depends on what our theory of case and nominalization is. However, I would like to emphasize that this question of architecture really should matter from almost any theoretical perspective.

   First of all, we will see in some detail in chapter 4 that derived nominals can select the same PP that the verb selects. The explanation there is basically a semantic one, but nevertheless—given the close functional connection between case-marking and prepositions, and the way they are analyzed, it is not unreasonable to wonder why case is not inherited but P-selection can be. This fact suggests quite strongly that case, at least of the Icelandic sort, is something different from a hidden PP—the kind of selection that governs choice of PP is distinct from the kind of selection that governs the choice of case. It is not obvious that this fact falls out of all analyses of case and selection. Moreover, many researchers are happy to treat all non-accusative DPs as "hidden" PPs, which may be true sometimes, but in Icelandic is problematic for a number of reasons; this difference in inheritance can be added to that list of reasons.

   Even more strikingly, if we set aside the PP selection issue, research on Icelandic case has always connected case-marking patterns closely to the argument structure, however that is represented in a given theory. At the same time, research on nominalization has long argued that derived nominals inherit the argument structure of the verbs they are derived from. It is thus of substantial architectural interest—for any model of grammar—that argument structure is inherited when case-marking cannot be.

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[11] I actually assume that the *mis-* prefix adjoins to the root, but it could also adjoin to v. I gloss over this here.

3.2 The problem of *á*-PPs

The second main problem arises, for both Phrasal Layering and Parallel Structures when we consider the *á*-PP expression of the theme. Since a PP expression of the theme is found in English, with *of* (and other languages in a similar way), it may not be obvious at first glance why this is a problem. In order to see why, consider first how English works. In a Parallel Structures analysis, the root must take the theme as a complement, and is dominated by an n head for nominalizations and a v head for verb phrases.

(162)   John destroyed the city.

```
        VoiceP
       /      \
   John       /  \
          Voice   vP
                 /  \
                v    /  \
            √DESTR-   the city
```

(163)   John's destruction of the city.

```
         DP
        /  \
   John's   / \
           D   nP
              /  \
             n    /  \
              √DESTR-  the city
```

Since the root+complement structure is built independent of category, it must be the case that the higher structure determines whether *of* is present or not. For example, we might say that n cannot assign Case, and therefore *of* must be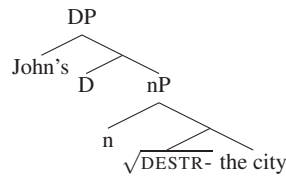 inserted into the structure post-syntactically; alternatively, n assigns structural genitive case, which in English is realized as *of*.[12]

The same set of possibilities arises on a layering analysis. There, the full verb phrase is constructed under the nominalizer, leading to the case problems mentioned earlier in the chapter. But even setting those aside, the structure still has to determine when the theme can be an *á*-PP and when it cannot, and that is determined by whether or not the vP is embedded inside a nominalizer. In either the Parallel Structures or the Phrasal Layering analysis, the theme is introduced within the verb phrase, wherever direct objects normally go. Then, some higher head at the NP level determines that the theme must be licensed for Case, and it gets assigned genitive, which is realized as *of*, or else it is saved by *of*-insertion.

Whether or not this analysis is viable for English, it is very hard to imagine that Icelandic could work this way. There is no reason to think that structural genitive assigned by n should be realized as a preposition *á*, and one that assigns dative at that. Icelandic has a morphological genitive, and surely that would be a more natural realization of abstract genitive case. (And since genitive is in fact possible in such environments, it is not as though we can try to rule out that option somehow.) Moreover, treating *of* as a genitive marker makes some sense for English, which uses *of* to express many canonical possessive relations. This is not so for Icelandic *á*, which is not a possessive marker like English *of* is.[13]

Beyond being an unlikely candidate for realizing an abstract case relation, there is no reason to think that Icelandic needs anything like *á*-insertion. It has no shortage of actual case-markers to realize case-relations. In fact, even if we assumed *á* is inserted post-syntactically, we would then still have to say how it assigned dative to its complement. (So extra case-marking is still needed.) In English, we see *of* showing up in a diverse set of environments, some of which seem like the kinds of environments where case-licensing is needed, so *of*-insertion is triggered, including not just nouns but adjectives as well. But unlike *of*-marking, *á*-marking is not so general. Adjectives, for example, can take case-marked DP complements (Sigurðsson, 2012a, 327–328).

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[12] These options for *of* are forced in a Parallel Structures analysis if we assume that the root takes a complement. It would not arise if one assumed that the root was adjoined to n from the start. However, we have already seen that little v is present in nominalizations, so a parallel structures analysis, in order to avoid being a layering analysis, would have to assume that the root adjoined to v and then this complex v adjoined to n, which is basically the analysis pursued in this work. However, these facts have generally led to layering analyses, as in Harley (2009b).

[13] The only cases where *á* seems to having anything resembling a possessive use are in part-whole expressions like *þakið á húsinu* 'the roof on the house' and body-part possession like *hárið á henni* 'the hair on her'. However, this is more semantically contentful than English *of*, and not simple possession; the preposition *í* 'in' is also used in these functions when that makes sense, such as *hjartað í þér* 'the heart in you'. (Examples from Thráinsson 2007, 94–96.)

(164) a.   Hann var börnunum   góður.
            he   was children.the.DAT kind
            'He was kind to the children.'

       b.   Hann var verður verðlaunanna.
            he   was worthy prizes.the.GEN
            'He was worthy of the prizes.'

Moreover, non-deverbal nouns can take genitive complements, as seen with *hluti* 'part' in (165).

(165) hluti lýsingarorðsliðarins
       part adjective.phrase.the.GEN
       'part of the adjective phrase'

This reinforces the conclusion that there is no structural need for anything like *á*-insertion in the context of a noun.

For another example, English uses *of* to mark partitive expressions like *most of the cars*. In Icelandic, there are at least three basic ways of constructing partitives (see Wood et al. 2015 and references therein), and none of them involve *á*:

(166) a.   Flestir   **bílanna**   hafa aldrei verið keyrðir.
            most.M.NOM the.cars.M.GEN have never been driven
            'Most of the cars have never been driven.'

       b.   Flestir   **bílarnir**   hafa aldrei verið keyrðir.
            most.M.NOM the.cars.M.NOM have never been driven
            'Most of the cars have never been driven.'

       c.   Flestir   **af bílunum**   hafa aldrei verið keyrðir.
            most.M.NOM of the.cars.M.DAT have never been driven
            'Most of the cars have never been driven.'

In the first case, we see the partitive as a genitive DP. In the second, we see a full DP that agrees in case with the quantifier. In the third, we do see a preposition, but it is *af* 'of/by/from' not *á*. A similar situation is found with pseudopartitives, as pointed out to me by Halldór Sigurðsson (p.c.).

(167) a.   ? Þrjár flöskur   víns   voru á borðinu.
              three bottles.NOM wine.GEN were on table.the
              'Three bottles of wine were on the table.'

       b.   * Þrjár flöskur   vín   voru á borðinu.
              three bottles.NOM wine.NOM were on table.the
              INTENDED: 'Three bottles of wine were on the table.'

       c.   Þrjár flöskur *(af) víni   voru á borðinu.
            three bottles *(of) wine.DAT were on table.the
            'Three bottles of wine were on the table.'

                                                                                                    (Sigurðsson, 2003)

Here, the genitive is marked, and case-concord is impossible; the only fully natural option is to use a PP. But that PP is headed by *af* 'of/by/from' not *á*. Once again, this undermines any notion that Icelandic resorts to *á*-insertion for a general, dummy preposition.

Furthermore, both the *of*-insertion and the genitive-*of* analyses depend on the notion that the preposition serves a purely formal function, and cannot be sensitive to the interpretation of the nominal, the verb it contains, or the theme. However, *á* is arguably sensitive to the thematic interpretation of the object. Jóhannsdóttir (1995) notes that not all direct objects are possible, the way they are with English.

(168)   Kaiafas freistaði Júdasar.
        Kaiafas tempted Judas
        'Kaiafas tempted Judas.'

    a.   ? Freist-ing   Júdasar   er nú   alþekkt.
            tempt-NMLZ Judas.GEN is now well.known
            'The temptation of Judas is now well known.'

    b.   * Freist-ing-in   á Júdasi er nú   alþekkt.
            tempt-NMLZ-the on Judas is now well.known

(Jóhannsdóttir, 1995, 73)

(169)   Lögfræðingurinn varði   sakamanninn.
        lawyer.the   defended criminal.the
        'The lawyer defended the criminal.'

    a.   Vör-n   sakamannsins   var umdeild.
            defend-NMLZ criminal.the.GEN was debated
            'The defense of the criminal was debated.'

    b.   * Vör-n-in   á sakamanninum var umdeild.
            defend-NMLZ-the on criminal.the   was debated

(Jóhannsdóttir, 1995, 73)

Jóhannsdóttir (1995, 73) suggests a reason that connects directly the the present proposal: "Icelandic has no semantically neutral preposition like English *of* which can be used in a wide connection. Most prepositions in Icelandic have a rather limited interpretation, so that it is not unlikely that in some cases no preposition comes close enough to describe the relations between the nouns."

We saw a similar situation earlier in the discussion of nominals like *misheyrn* 'mishearing' and *vöntun* 'need'. In both cases, the experiencer cannot be expressed by an *á*-PP, although it can be a genitive. In the case of *misheyrn* 'mishearing' (but not *vöntun* 'need'), the stimulus/theme was preferably an *á*-PP, and the genitive was marked. This sensitivity to the semantics is not expected with an *á*-insertion analysis, and Jóhannsdóttir's intuition is that *á* really is different from English *of* in the relevant respects. The overall picture presents a clear contrast between Icelandic *á*-PPs and English *of*-PPs, and suggests that unlike *of*, Icelandic *á* is doing some semantic work, or is only semantically Ø under certain conditions. Either way, it is not a likely case for a post-syntactic insertion rule.

Finally, many languages that use an *of*-like PP to express the object allow it to express a subject reading as well, in certain cases, as shown in (170a) for English. This is not so with Icelandic *á*, as shown in (170b):

(170)   a.   the jump(ing) of the cows

    b.   # stökk-ið á { kúnum   / kindunum }
            jump-the on { cows.the / sheep.the }
            ≠ the cows jumping

Relatedly, in German, according to Alexiadou (2001, 81), *von*-PPs can express internal arguments, and *durch*-PPs can express external arguments.

(171)   a.   der Angriff der serbischen Ziele   durch die NATO
            the attack   the Serbian   targets.GEN by   the NATO

    b.   der Angriff der NATO   von serbischen Zielen
            the attack   the NATO.GEN of   Serbian   targets

However, she notes that this *von* can be used to express an owner in result nominal:

(172)   die Beobachtungen von Vögeln
        the observations   of birds
        'The birds' observations'

This too is different from Icelandic *á*, which cannot express the owner in a result nominal.

(173)   a.   # skoðanirnar   á   fuglum
                 observations.the on birds.DAT
                 ≠ 'the birds' observations'

        b.   skoðanir   fuglana
                 observations.the birds.GEN
                 = 'the birds' observations'

This all suggests that *á* is not a last resort Case licensor, or a realization of genitive Case the way that *of* has been claimed to be. But if not, then it must somehow be present from the start, selected by the head that combines with it. In either the Phrasal Layering or Parallel Structures analysis, this creates a lookahead problem: a verb only selects *á*-PPs if it will eventually be embedded in nominalized structure. This is not how selection is generally thought to work. In Bruening's (2013:31) phrasal layering analysis of nominalizations, he explicitly changes the verb's selectional feature from [S:N] (to select an NP) to [S:P] to select a PP. But this information is gone as soon as the verb combines with the PP to form a verb phrase. The Voice head then combines with this VP is the same one (with the same features) that combines with VPs that are not destined to be nominalized. There is nothing in the system stopping the structure from continuing to project up to Aspect, Tense, etc., to form sentences like *They destroyed of the town*. Bruening (2013) does not seem particularly bothered by this, writing in a footnote that "It may be that the complement of the verb here is still of category N, with *of* functioning as a case marker. Because this is not important to the analysis, I simply change the selectional feature of the verb to [S:P]." The point here is that changing the selectional feature overgenerates, and the alternative that Bruening (2013) invokes is not a plausible analysis of Icelandic.

In the present analysis, on the other hand, it can be connected to the general rule allowing nouns to take PP complements. There is nothing unusual about it. The only thing that remains is to specify explicitly which preposition can serve to introduce the theme, and how this is accomplished semantically. In chapter 5, I will claim that like many functional heads, the preposition *á* can be semantically Ø in certain contexts, namely in the context of a noun with a certain interpretation. Since the Ø interpretation of *á* must be explicitly restricted particular syntactic and semantic contexts, restrictions on this use of *á* can be understood as part of the system of allosemy that determines when the Ø interpretation is available. Moreover, it can serve as the locus for particular, special interpretations in special contexts. See chapter 5 for more discussion of how the PP complement is interpreted.

3.3 Nominalizations of *-st* verbs

A final issue with the phrasal layering analysis has to do with the nominalization of *-st* verbs. In Icelandic, *-st* is a morpheme that seems to mark the absence of an expected argument slot. Wood (2015) has argued that this is because it is an argument expletive, which is syntactically a clitic, that fills an argument slot syntactically but gets no semantic interpretation. It moves into one of two clitic licensing positions in the inflectional field. Wood (2015) noted that *-st* does not appear in derived nominals, but did not emphasize the fact that nominals derived from *-st* verbs are quite possible. This is particularly striking for verbs that might be thought of as "deponant" *-st* verbs: verbs that only occur with *-st* when they remain verbs. Consider the following examples.

(174)   a.   Guðrún dá-ði-st   að Maríu.
                 Guðrún admired-PST-ST at María
                 'Guðrún admired María.'   (adapted from Sigurðsson, 1989, 262)

        b.   að-dá-un   Guðrúnar   á Maríu
                 at-admire-NMLZ Guðrún.GEN on María.DAT
                 'Guðrún's admiration of María.'

(175)   a.   Drengurinn undra-ði-st   mannfjöldann.
             boy.the.NOM marveled-PST-ST crowd.the.ACC
             'The boy marveled at the crowd.'

        b.   undr-un   drengsins
             marvel-NMLZ boy.the.GEN
             'the boy's marvelment'   (Jóhannsdóttir, 1995, 68)

        c.   undr-un   drengsins á mannfjöldanum
             marvel-NMLZ boy.the.GEN on crowd.the
             'the boy's marvelment at the crowd'

        d.   # undr-un   mannfjöldans
             marvel-NMLZ crowd.the.GEN
             'the crowd's marvelment'
             * 'the marvelment (of someone) at the crowd'

(176)   a.   Þér   hafa víst   misheyrst orð   mín!
             you.DAT have surely misheard words my
             'You have surely misheard my words!'

        b.   misheyr-n   Jóns   á orðum mínum olli   vandræðum
             mishear-NMLZ John.GEN on words my   caused problems
             'John's mishearing of my words caused problems'

The verb *dá* does exist without *-st*, but it means 'adore' (not 'admire') and it does not take an *að*-PP argument. The nominalization in (174b) is clearly nominalizing the use in which *-st* is obligatory for the verb, since the *að* is prefixed to the nominal; see chapter 4 for a detailed discussion of such prepositional prefixing. The verb *undrast* 'marvel' does not exist without *-st*, and yet it can be nominalized as in (175b). The verb *misheyrast* 'mishear' does not occur without *-st*, and yet it can be nominalized as shown in (176b).

The issue is that to analyze these *-st* verbs, something has to be said about the building of verb phrases that requires the *-st* clitic to be part of the verb phrase. If nominalizations are built on top of verb phrases, *-st* should be an obligatory part of those nominalizations. The same reasoning applies to the anticausative reading of *opnun* 'opening', since with the verb, the anticausative takes the *-st* morpheme. Consider (177)–(178) (repeated from (97)–(98) in chapter 2).

(177)   a.   Guðrún   opnaði hurðina.   (178)   skyndileg opn-un   hurðarinnar
             Guðrún.NOM opened door.the.ACC   sudden   open-NMLZ door.the.GEN
             'Guðrún opened the door.'   'the sudden opening of the door'

        b.   Hurðin   opnaði*(-st).   a.   ✓ Passive reading (implicit agent)
             door.the.ACC opened*(-ST)
             'The door opened.'   b.   ✓ Unaccusative reading (door opens on
                                                                  its own)

In order to get the unaccusative reading, the verb phrase requires *-st*, which would lead us to expect the *-st* morpheme in the unaccusative reading in the nominalization.

One way out of this conundrum would be to suppose that nominalizations are built on vPs and not VoicePs, which as we have already seen, is independently plausible. According to the analysis in Wood (2015), at least *opnast* '(unaccusative) open', *misheyrast* 'mishear', and possibly also *undrast* 'marvel' (see Wood 2015, 242), are built with *-st* in SpecVoiceP. The logic of that system is explicitly such that if Voice is present, *-st* must be in its specifier, but nothing necessarily goes wrong is Voice is not present at all (see Wood 2015, section 3.5.3, 152–155).

However, Wood (2015) argues that *-st* is merged lower, within the vP, in cases like (174a), as well as in cases like (179a) below. And yet, they too can form derived nominals, with no *-st* clitic.

(179) a.   að troða-st   gegnum skóginn
             to squeeze-ST through woods.the
             'to squeeze through the woods'

       b.   Víða   var enginn troð-ningur   gegnum skóginn
             widely was no   squeeze-NMLZ.NOM through forest

             'Throughout there was no squeezing through the forest.'[14]

       c.   troð-ningur   gegnum skóginn
             squeeze-NMLZ through woods.the
             'squeezing through the woods'

       d.   troð-ningur   þeirra   gegnum skóginn
             squeeze-NMLZ their.GEN through woods.the
             'their squeezing through the woods'

Similarly, the verb *annast* 'take care of' does not exist without *-st*, and yet it can be nominalized as shown in (180b).[15]

(180) a.   Hún anna-ði-st   (um) barnið.
             she take.care-PST (of) child.the
             'She took care of the child.'

       b.   um-önn-un-in   á barninu
             of-take.care-NMLZ-the on child.the.DAT
             'the taking care of the child'

       c.   um-önn-un   barnsins
             of-take.care-NMLZ child.the.GEN
             'the taking care of the child'

For this verb, *-st* is not merged in SpecVoiceP, as shown by the fact that it can be passivized:

(181) Það   var anna-st   um barnið.
       EXPL was taken.care-ST of   child.the
       'The child was taken care of.'   (Thráinsson, 2007, 255)

Since *-st* is not merged in SpecVoiceP, it is merged lower in the verb phrase. This suggests that it is not enough to say that the absence of *-st* in the nominalized form is due to n attaching before *-st* would have merged.

   Another response might therefore be to say that *-st* cannot be merged because it cannot be licensed without the necessary functional structure. But this is rather problematic, as it implies either a fair amount of lookahead (the verb phrase has to "know" that it will be nominalized, and avoid *-st* as a result), or a rather complex transderivational comparison. That is, one would have to somehow say that *-st* is required to merge for the appropriate verb meaning to arise only when it will be licensed; otherwise, the verb phrase can be happily built without *-st* and achieve the relevant meaning. It is not clear to me how to execute this kind of analysis, especially since in the analysis of Wood (2015), *-st* does not *directly* condition verb meaning, and even if it did, it would be a challenge to work out how the relevant meanings are computed with reference to the possibility of *-st*, whether it is merged or not.

   Suffice it to say that the nominalization of *-st* verbs at least raises some nontrivial challenges for the phrasal layering analysis. These challenges do not arise on the present approach. In the present analysis, the complex head is built directly, and there is never a slot to insert *-st* to begin with. Under the view that *-st* does not influence the meaning of the verb directly, but only indirectly via the properties of functional heads in the verb phrase, *-st* is not necessary to derive the appropriate meaning of a deverbal nominal either. The present

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[14] http://timarit.is/view_page_init.jsp?pageId=960927&lang=i, Ret. Jan. 9, 2019

[15] Note that most speakers prefer to leave the preposition *um* out with *annast* as in (180), and some find *um* better with a verb phrase like *annast um málið* 'take care of the issue'. This is not relevant here, but see further discussion in chapter 4.

approach straightforwardly predicts that it is possible to build nominalizations of *-st* verbs, as well as the fact that *-st* will not appear in such nominalizations.

3.4 *Marg-* 'many' and *Endur-* 're-' prefixation support complex heads

Further support for the complex heads analysis comes from the availability of modifiers that can only occur at the level of the complex head. Corresponding phrasal modifiers with similar meanings are not possible. Here I consider two such prefixes, *marg-* 'many' (which adds iterative meaning) and *endur-* 're-'. As mentioned in chapter 2, *marg-* 'many' may occur on derived nouns as long as those nouns get a CEN reading. An attested example discussed there is repeated here:

(i) það kostar miklu meira vesen   sem   tekur allan sparnað burt.. eins og **marg-þvo-ttur**   **á**
     it   costs much more trouble which takes all   savings away like   many-wash-NMLZ on
     blettunum óneitanlega gerir
     stains   undeniably does
     'it causes much more of a hassle which takes all the savings away… like the repeated washing of stains undeniably does'[16]   https://danjensen.blog.is/blog/danjensen/entry/563317/ (11/13/18)

What is relevant here is that this kind of modification is only possible with a prefix; adding a vP phrasal modifier such as an adverb that has the same meaning is impossible. If nominalizations are built on vPs, however, one would expect such vP modifiers to be possible, and stranded by the head-movement of the verb to the nominalizer. According to the complex heads view, this fact makes sense, since modification within a complex head can only occur through head adjunction.

The prefix *endur-* 're-' makes this point more sharply. First of all, we can repeat the point from above with *marg-* prefixation. The prefix *endur-* can modify nominalizations in a way that vP adverbs like *aftur* 'again' or *á ný* 'again' cannot; *prentun aftur* 'printing again' or *prentun á ný* 'printing again' cannot be used to refer to the result of a reprinting event. However, we can go further than this, because unlike *marg-*, *endur-* does allow RN and SEN readings. Wood (2009b) adopted Marantz's (2009a; 2009b) analysis of English *re-*, and proposed that it attaches syntactically to the direct object, and moves by head-movement to the verb. Sigurðsson (2015) provided further support for this view from facts about particle prefixing. In contrast, I will assume here that both prefixes adjoin at the complex head level. I do not aim to solve all of the problems associated with this shift, as that goes beyond the scope of this study.

However, I would like to make at least one point regarding the *re-* prefix, which, as we will see, extends to Icelandic *endur-*. Marantz's (2009a; 2009b) argument that English *re-* must attach to the object had to do with its semantic scope. Specifically, he argued that *re-* scopes only over the end state of a change of state verb, not the activity that causes the change of state. If it attached to the verb, we would expect it to scope over the activity. Moreover, direct objects are generally obligatory with *re-*, even when they aren't without *re-*. This could be extended to the present account for CENs quite naturally. In fact, Marantz (2009a,b) specifically argues that *re-* attaches to the *of*-PP in nPs like *rebirth of the idea*, which are headed by nouns that are not derived from any verb. Thus, we could say that *endur-* attaches to the PP or genitive DP in this same way. However, the challenge to this view relevant here comes from the fact that while direct objects may generally be obligatory with verbs, they are not with nominalizations, in particular with the SEN interpretation. We will see below that *re-* and *endur-* are possible with SEN and RN readings of nominalizations, and in those cases, there is generally no object, either syntactically or semantically. I therefore instead propose that *endur-* attaches directly to the complex head. But this analysis is only possible if the direct building of complex heads is supported to begin with.

Recall again that *þvo* 'wash' can be nominalized as a CEN (356a–b), an SEN (356c), or an RN (356d).

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[16] https://danjensen.blog.is/blog/danjensen/entry/563317/ (11/13/18)

(182) Guðrún   þvoði   fötin.
       Guðrún.NOM washed clothes.the.ACC
       'Guðrún washed the clothes.'

    a.   þvo-ttur   Guðrúnar   á   fötunum
           wash-NMLZ Guðrún.GEN on clothes.the.DAT
           'Guðrún's washing of the clothes'   (CEN)

    b.   þvo-ttur   fatanna
           wash-NMLZ clothes.the.GEN
           'the washing of the clothes'   (CEN)

    c.   Þvo-ttur-inn   tók   langan tíma.
           wash-the-NMLZ took long   time
           'The washing took a long time.'   (SEN)

    d.   Þvo-ttur-inn   á   að fara í   vélina.
           wash-the-NMLZ ought to go in machine.the.ACC
           'The washing (=laundry, clothes to be washed) should go into the washing machine.'   (RN)

The verb *þvo* 'wash' can also be prefixed with *endur-* 're-', and when it is it can still be nominalized as *endurþvottur* 'rewashing'. However, this nominal *endur-* is compatible with both a CEN reading and an SEN reading, but not with an RN reading.

(183) Ég   endur-þvoði fötin.
       I.NOM re-washed   clothes.the.ACC
       'I rewashed the clothes.'

    a.   endur-þvo-ttur Guðrúnar   á   fötunum
           re-wash-NMLZ Guðrún.GEN on clothes.the.DAT
           'Guðrún's rewashing of the clothes.'

    b.   endur-þvo-ttur fatanna
           re-wash-NMLZ clothes.the.GEN
           'the rewashing of the clothes'

    c.   Endur-þvo-ttur-inn tók   langan tíma.
           re-wash-the-NMLZ took long   time
           'The rewashing took a long time.'

    d. * Endur-þvo-ttur-inn á   að fara í   vélina.
           wash-the-NMLZ   ought to go in machine.the.ACC
           'The rewashing (=laundry, clothes to be rewashed) should go into the washing machine.'

However, it is not the case that *endur-* is never compatible with a concrete, RN reading. It is possible in examples such as the following:

(184) **Context**
       Ég prentaði reglurnar fyrir hana í gær, en nú finnur hún ekki prentunina. Ég þarf að endurprenta reglurnar í dag.
       'I printed the rules for her yesterday, but now she can't find the print out. I need to reprint the rules today.'

       Ég vona að   hún týni   ekki endur-prent-un-inni.
       I   hope that she loses not   re-print-NMLZ-the
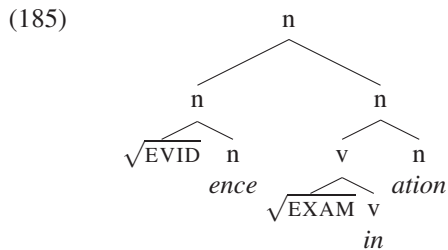   'I hope she doesn't lose the reprinting.'

Here, *endurprentun* 'reprint' refers to the physical object, the piece of paper, that was produced in a reprinting event.[17] Later, I will suggest that the difference between *endurþvottur* 'rewashing' and *endurprentun* 'reprinting' is rooted in the fact that the RN reading of the latter is built off of the verbal, eventive meaning, whereas the RN reading of the former is not (and may not even contain a v head).

Here, the point is that in the SEN reading of *endurþvottur*, and the RN reading of *endurprentun*, there is no evidence of any direct object. Moreover, recall from 2 that the object of *þvottur* is obligatory with *marg-* in a way that it is not with *endur-*; the means that we cannot simply explain the facts away by assuming that *þvo* 'wash' allows silent syntactic objects for the prefix *endur-* to attach to. Therefore, we must conclude that *endur-* attaches to the complex head directly. But in order to do that, the complex head must be syntactically available to begin with. In chapter 6, I will provide an account of the distribution of these prefixes within the framework developed there. For now, the basic point is that the complex head analysis accounts for why modifiers are available only as prefixes, not as vP phrases: there is no vP phrase for a phrasal modifier to attach to.

3.5 Synthetic compounds

In this section, I briefly discuss synthetic compounds, and show that they face similar challenges to the nominalizations seen so far, especially with respect to case inheritance. In particular, nonheads seem capable of bearing case, but when they do, it is genitive, rather than the case the the verb would have assigned, such as dative. I agree with Alexiadou (2017b) that synthetic compounds have most of the properties of complex event nominals, with differences to be explained in the following chapter. I argue that this is problematic for the same reason; given how synthetic compounds have been proposed to work, we would expect the nonhead to be able to be dative, contrary to fact.
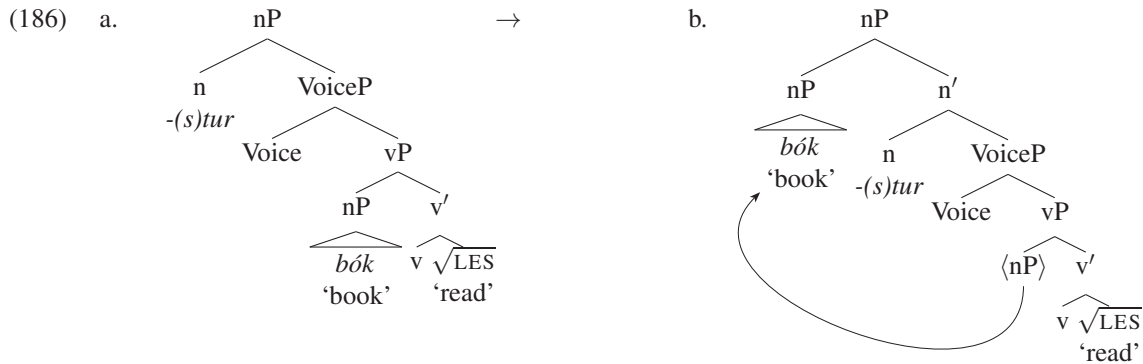
I propose that compounds, whether synthetic or not, are built with adjunction of the nonhead to the head (as proposed by Harðarson (2016, 2017, 2018) for primary compounds). The structure for *evidence examination* would then be as in (185).

(185)

The only difference between a synthetic compound and a primary compound, according to this view, is that the head of a synthetic compound has the meaning of the verb it is derived from. In chapter 5 below, I will discuss differences between synthetic compounds and primary compounds, on the one hand, and between synthetic compounds and non-compound argument-structure nominals, on the other. In this section, I turn to the phrasal layering analysis of synthetic compounds, and argue that Icelandic synthetic compounds raise problems for that analysis.

The phrasal layering analysis of synthetic compounds from Alexiadou (2017b) and Iordăchioaia et al. (2017) is shown in (186), for the Icelandic compound *bóklestur* 'book-reading'.

---

[17] Likewise, it is possible in English to say *The resubmission that I wanted you to look at is on the table.* Here, *resubmission* refers to the entity that came into existence as a result of an event of resubmitting.

(186)   a.   nP   →   b.   nP

                      n   VoiceP   nP   n′
                   -(s)tur   ‾‾‾‾
                              Voice   vP   bók   n   VoiceP
                                                                      'book'   -(s)tur
                                        nP   v′   Voice   vP
                                      ‾‾‾‾
                                      bók   v √LES   ⟨nP⟩   v′
                                   'book'   'read'
                                                                                                       v √LES
                                                                                                        'read'

According to this analysis, the nonhead is an nP that originates in the direct object position of the verb (here,
SpecvP, but it could just as well be the complement of v or the root). Because it is an nP and not a DP, it
cannot be case-licensed in situ, but must move to SpecnP for licensing.

> *If the non-head were a DP, it would either receive accusative case from the verb, or genitive case from the nominalization*
> *(like in ASNs such as in (4b)). But as a nP, the non-head cannot be marked for case and is illicit in this argumental*
> *position (cf. Longobardi 1994), so it has to move.*   *(Iordăchioaia et al., 2017, 65)*

This analysis solves the classic bracketing paradox of synthetic compounding in languages like English. The
nonhead is an argument of the verb because it merges where verbal arguments merge, combining first with
the verb. However, we do not force the existence of a verbal compound *to book-read*, because it is merged as
a phrasal argument, and at any rate the nonhead cannot stay in that position; it must move to SpecnP, which
would not be available outside of the nominalizing environment.

    The problem that Icelandic raises is by now familiar: by including a full verb phrase structure, we expect
the nonhead to be able to be dative, when the verb assigns dative. For example, recall that *aka* 'drive' takes a
dative object, as illustrated in (187a). The nonhead of a synthetic compound, however, takes genitive and not
dative, as illusrated in (187b-c).

(187)   a.   Jón   ók   leigubílnum
             John.NOM drove taxi.the.DAT
             'John drove the taxi.'

        b.   leigubíla-ak-stur   Jóns
             taxi.GEN-drive-NMLZ John.GEN
             'John's taxi-driving'

        c.   * leigubílum-ak-stur   Jóns
             taxi.DAT-drive-NMLZ John.GEN

Now we are led to ask whether we really would have expected dative case at all. One possibility is that the
nP is too small to receive any case, and this is the reason that we do not see dative. This might be connected
to the fact that the nP has to move to SpecnP for (Case) licensing.

    However, there are reasons to think that the nonhead is not too small to receive case. As for the licensing
movement, this cannot be connected to morphological case marking, since it is well known that Case licensing
(governing the distribution of arguments) is distinct from morphological case marking; Icelandic is in fact one
of the clearest cases where this holds. A dative theme, for example, must still move for licensing in the same
way that a nominative theme must (under passivization, for example). So we can disregard the idea that
movement to SpecnP would be expected to affect the morphological marking of the moving nP.

    As for the idea that the nP is too small to receive morphological case, this is undermined by the fact
that the nonhead very often shows up in the genitive. It is important to emphasize here that it is generally
argued that genitive nonheads really are genitive; the genitive morpheme is not simply a linking element
that happens to look genitive, as can be observed in other languages (Indriðason, 1999; Harðarson, 2016,

2017). Icelandic also has linking elements in some compounds—these are distinct from genitive marking on nonheads. Harðarson (2016, 2017) argues that genitive nonheads are structurally larger than bare nonheads, but nonheads with linking morphemes are essentially the same as bare nonheads.

   Harðarson (2016, 2017) observes that in a three-word compound, when both lefthand words are genitive, or when both are bare, the constituency is ambiguous.
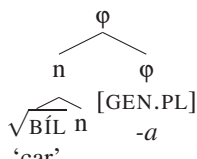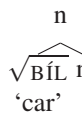
(188)　a.　eink-a　　　#bíl-a　　　#stæði　　　　b.　járn　　　#stól　　　#fótur
　　　　　　private-GEN #car-GEN #space　　　　　　　　iron.STEM #chair.STEM #leg
　　　　　　'parking spot that is private'　　　　　　　'iron leg of a chair'
　　　　　　'(parking) spot for private cars'　　　　　'leg of an iron chair'

However, when only one of the first lefthand words is inflected, the structure is unambiguous: if the 1st word is uninflected, only left branching is allowed; if the 2nd word is uninflected, only right branching is allowed.

(189)　a.　karl-a　　#hest　　　#vagn　　　　b.　karl　　　#hest-a　　#vagn
　　　　　　man-GEN #horse.STEM #wagon　　　　　man.STEM #horse-GEN #wagon
　　　　　　'a horse carriage for men'　　　　　　　≠ 'a horse carriage for men'
　　　　　　≠ 'a carriage drawn by male horses'　　'a carriage drawn by male horses'

He establishes this generalization by generating nonce examples, and by studying a corpus of attested examples.[18]
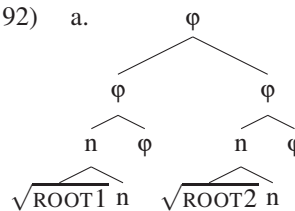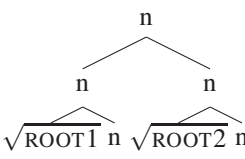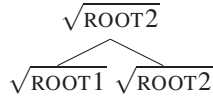
   Harðarson derives this generalization in the following way. First, he proposes that the inflected elements are not just morphological decorations, but reflect a more complex structure. An inflected noun, such as *bíla* 'cars.GEN' in *einkabílastæði* 'private car spot (parking spot)', would have the structure in (190a). An uninflected noun, such as *bíl* 'car' in *einkabílstjóri* 'private car-driver (i.e. 'chauffeur')', would have the structure in (190b).

(190)　a.
```
            φ
           / \
          n   φ
         / \   [GEN.PL]
     √BÍL  n    -a
     'car'
```
　　　　　b.
```
            n
           / \
       √BÍL  n
       'car'
```

Second, he proposes that compound formation is subject to the Matching Condition:

(191)　*The Matching Condition*
　　　　Compounding merges elements of the same syntactic type

Given the structure above, The Matching Condition would allow compounds of three types:[19]

(192)　a.
```
             φ
           /   \
          φ     φ
         / \   / \
        n   φ n   φ
       / \   / \
   √ROOT1 n √ROOT2 n
```
　　　b.
```
          n
         / \
        n   n
       / \   / \
  √ROOT1 n √ROOT2 n
```
　　　c.
```
        √ROOT2
        /    \
   √ROOT1  √ROOT2
```

<hr/>

[18] There are some counterexamples, which Harðarson analyzes in various ways. Note that most of the counterexamples are established words. The generalization seems to hold firmly in novel, online compound formations. There are various ways one could analyze established words (e.g. an inflectional genitive developing into something like a linking element) that would not be plausible for novel formations.
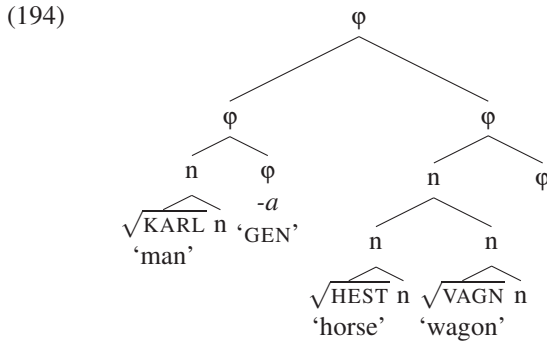
[19] Note that what is important here is the topmost category of each constituent; they could differ in their internal structure.

We can now see how the Matching Condition derives the branching generalization above. Consider *karl-a-hest-vagn* 'man-GEN-horse-wagon', which has genitive on the first word and only allows the right branching structure.
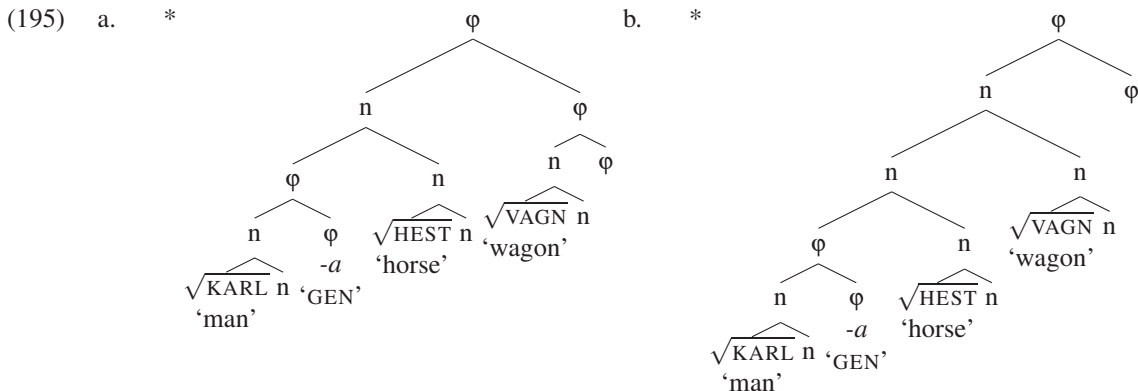
(193)   a.   karl-a   #hest   #vagn
             man-GEN #horse #wagon
             'a horse carriage for me'
             ≠ 'a carriage drawn by male horses'

    b.

```
              _____                              *         _____
             /        \                                      /            \
        karl-a      ____                                  ____            vagn
       'man-GEN'   /    \                                /    \          'wagon'
                 hest   vagn                         karl-a   hest
             horse.STEM 'wagon'                     'man-GEN' horse.STEM
```

Since the leftmost word must be at least a φ, it must combine with a φ. Therefore, the only structure consistent with the Matching Condition is the structure in (194).

(194)

```
                              φ
                       _____|_____
                      /               \
                     φ                 φ
                   __|__             __|__
                  n     φ           n     φ
               __/|    -a         __|__
              √KARL n  'GEN'     n     n
              'man'           __|    |__
                             √HEST n √VAGN n
                             'horse'  'wagon'
```

Any kind of left branching structure would necessarily involve a violation of the Matching Condition.

(195)   a.   *

```
                          φ
                    _____|_____
                   /             \
                  n               φ
               __/ \__          __|__
              φ       n        n     φ
            __|__   __|       __|
           n     φ √HEST n   √VAGN n
         __/|   -a  'horse'  'wagon'
        √KARL n 'GEN'
        'man'
```

    b.   *

```
                          φ
                    _____|_____
                   /             \
                  n               φ
               __/ \__
              φ       n
            __|__   __|
           n     φ √HEST n    √VAGN n
         __/|   -a  'horse'   'wagon'
        √KARL n 'GEN'
        'man'
```
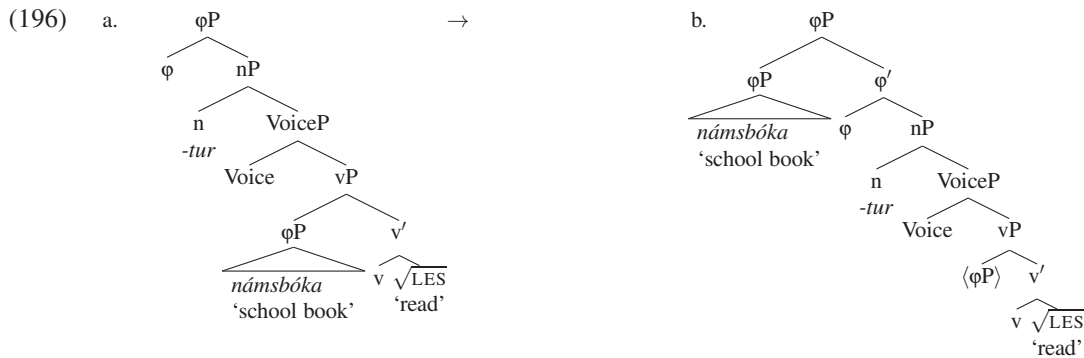
The reverse goes for *karl-hest-a-vagn* 'man-horse-GEN-wagon': it can only by left branching. However, when both lefthand words are bare, or both are genitive, they are free to be ambiguous because they are all of the same size, so the Matching Condition will allow them to combine in any order.

Returning to the main point, we are interested in the question of whether the matching condition holds in synthetic compounds, and more specifically whether we would expect dative case to be possible on the nonhead of a compound. First, the Matching Condition does seem to hold in synthetic compounds. Consider, for example, the compound *bóklestur* 'book reading'. This is a stem compound, since *bók* is uninflected. However, Harðarson (2017) points out that if you make the nonhead into a compound, and put inflection on that compound's nonhead, then you also have to put inflection on the head as well, as in *nám-s-bók-a-lestur*

'study-GEN-book-GEN-reading' (='school book reading'); *nám-s-bók-lestur, with no genitive on 'book', is ungrammatical.
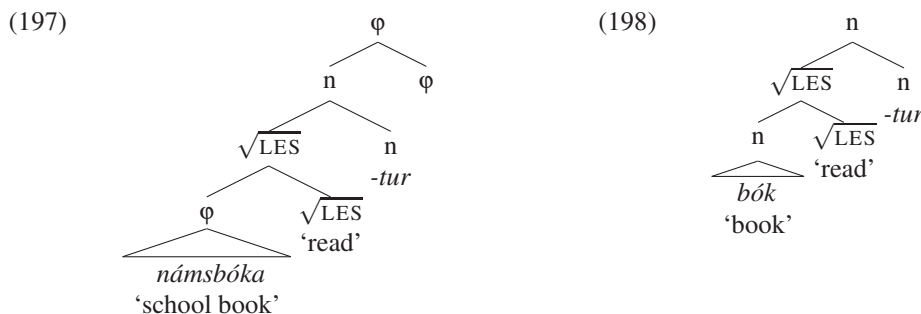
The analysis in Alexiadou (2017b) and Iordăchioaia et al. (2017) could be made to incorporate the Matching Condition. Recall that in their analysis, the nonhead is an nP in the object position, which raises to SpecnP for special (Case) licensing. We could assume that in Icelandic, a stem nonhead would work exactly like English. If, however, you merge a φP (an inflected nonhead), then it can't move to SpecnP—it won't be licensed there. Instead, the nominalizer has to project its own φP, and the nonhead will move to the specifier of that.

(196)   a.

This seems to be in the general spirit of their analysis as well; in other cases, the structural size of the internal argument will force more or less structure in the head to license it.

However, the general picture points to the conclusion that we would expect dative on the nonhead for compounds headed by nominals derived from dative-assigning verbs. The φ layer is syntactically relevant, and expresses contextually determined case features. And recall that we are interested here in morphological case, not licensing. There is no reason to think that the nonhead nP is "too small" to express morphological case—we see that it can in fact do exactly that.

I have focused here on the specific layering analysis of synthetic compounds in Alexiadou (2017b) and Iordăchioaia et al. (2017), but the same applies to other analyses as far as I am aware. For example, Harley's analysis, which is much closer to the Parallel Structures kind of analysis in some respects, relies on complex head formation, with each head incorporating its complement. She assumes that the verbal root takes the direct object complement. Under this analysis, it is hard to see how the matching analysis could be derived in the first place. One would have to say that a root taking a φP complement will somehow ultimately be forced to project up to φP.

(197)   (198)

This analysis would not automatically predict dative case, since there is no verb. But as we saw earlier, there are some nominalizations that are derived from verbs with overt verbalizing morphology; such cases would have to have a verb in the structure, so once again, we would expect dative case to be possible.

These problems would not arise in Borer's (2012) analysis, since she essentially takes synthetic compounds to be at the root level, below any functional structure. The entire compound would be formed below

the verb, and conditions on that formation would be independent of the structure of synthetic compounding per se. However, the problem is that this analysis does not seem to make any predictions at all, and we do see substantial generalizations in the form and meaning of synthetic compounds which suggest that there must be some structure, and that that structure should contain morphosyntactic features of the relevant sort. Moreover, Alexiadou (2017b) provides numerous compelling arguments that synthetic compounds in fact do behave by and large like Complex Event Nominals, which is at odds with Borer's analysis.

The present analysis does not face these problems, because, as above, the nonhead is not local to the case-determining head. The Matching Condition applies to synthetic compounds just as it does to primary compounds because both kinds of compounds are formed, structurally, in the same way. What is different about synthetic compounds is solely the interpretation of the deverbal head. I will discuss in more detail in chapter 4 exactly how this accounts for the differences between synthetic and primary compounds, and how we can also derive differences between phrasal CENs and synthetic compounds.

3.6 Summary

In this chapter, I have raised several Icelandic-specific morphosyntactic problems with the Phrasal Layering analysis of Icelandic nominalizations. First, the fact that nominalizations inherit argument structure but not any case-marking patterns is a major challenge to the phrasal layering analysis. We see this most sharply with dative themes, but problems arise with other case patterns as well. Second, the realization of the theme as an *á*-PP is particularly problematic, especially since it cannot plausibly be analyzed the way that English *of* is often analyzed. Third, the fact that verbs requiring the *-st* clitic can be nominalized, but that the clitic is no where to be seen, raises problems if we assume that verb phrases are nominalized. Finally, I showed that the same kinds of problems extend to synthetic compounds. I argued that the nonheads of such compounds have enough structure to show morphological case, and we would therefore expect them to be able to exhibit case-marking determined by the verb. It is fairly straightforward to see that these problems do not arise on a complex head analysis. However, it remains to show that the complex head analysis can account for the basic patterns of argument structure inheritance and ambiguity. This is the topic of chapters 5 and 6. First, however, I provide in chapter 4 another argument in favor of the complex head analysis, which is connected with an understanding of prepositional prefixing that the complex head analysis makes possible, which would be hard to account for under a phrasal layering analysis.

Chapter 4
Prepositions and prefixes

The discussion so far has focused primarily on verbs that take DP objects, whether those objects are nominative, accusative or dative. However, we have already encountered, in passing, some cases where a verb takes a PP complement. It turns out that such cases are quite interesting, theoretically, and form the basis of another argument in favor of the complex head analysis. This argument is somewhat more involved than the previous ones, however, in that it is connected to a range of patterns that we find in the nominalizations of PP-selecting verbs, and the analysis of these patterns that the complex head analysis allows. As I will discuss below, it is not clear how these patterns could be accounted for on a phrasal layering analysis.

When a verb that selects for a preposition is nominalized, we see at least three patterns, and these are illustrated in (199)–(201). Notice that for each of these cases, prefixing is not possible for the non-nominalized verb itself.

(199)   **Pattern 1** (Prefixing and Doubling)

    a.   að {*um}-**ræða**   {**um**} þetta
           to {*about}-discuss {about} this
           'to discuss this'

    b.   **um-ræð**-a   **um** þetta
           about-discuss-NMLZ about this
           'discussion about this'

(200)   **Pattern 2** (Prefixing Only, No Doubling)

    a.   að {*við}-**gera** {**við**} bílinn
           to {*with}-do {with} car.the
           'to repair the car'

    b.   **við-ger**-ð   { á bílnum   / bílsins   / ***við** bílinn }
           with-do-NMLZ { on car.the.DAT / car.the.GEN / *with car.the }
           'repair of the car'

(201)   **Pattern 3** (No Prefixing, PP only)

    a.   að {*um}-**hug-s**a **um** þetta
           to think-VBLZ   about this
           'to think about this'

    b.   **hug-s**-un   Guðrúnar **um** þetta
           think-VBLZ-NMLZ Guðrún.GEN about this
           'Guðrún's thinking about this'

In the first pattern, the P selected by the verb gets prefixed to the nominalization, and may be repeated as the head of a PP to introduce the argument. In the second pattern, the P selected by the verb gets prefixed to the

nominalization, but the argument it would have introduced is introduced by some other means (usually one of the more general strategies for themes). In the third pattern, there is no prefixing, and the noun selects the same P that the verb would have.

Why do we find these three patterns, and how do we understand the apparent inheritance of P-selection for the cases where that seems to happen? A phrasal layering analysis would straightforwardly lead us to expect that the derived nominal would select the same preposition that the verb selects for. It is less clear, at first glance, what to expect on a complex head analysis of the sort pursued in this book. Should selectional patterns be inherited by the n head when a v head adjoins to it? I would like to propose that we can understand this puzzle if we recast c-selectional restrictions as alloseme selection on roots (Harley, 2014; Wood, 2016, 2017). The idea is that a PP complement can simultaneously do two things. First, it can make its own semantic contribution. Second, it can have a constraining effect on the interpretation of the root. Within a verb phrase, the P head can usually do both things at the same time. However, we see the functions split up in nominalizations: the prefix is involved in root alloseme selection, whereas the complement PP is contributing to the overall event phrase semantics.

The basic intuition guiding the general proposal is thus that these patterns reflect the "dual role" of prepositions for verb meaning. On the one hand, prepositions may have their own semantics (so 'to' means something different from 'at' or 'from'), or not (so some prepositions may serve a purely formal purpose). On the other hand, prepositions may condition allosemy on the root. For example, *pick* means something different in *pick on someone* and *pick someone*; in the former case the meaning is something like 'tease', whereas the latter it is 'choose'. I will propose that in nominalizations, a prefixed P serves the latter function, whereas a P heading a PP complement serves the former function. I will derive this pattern by proposing that prefixed prepositions adjoin to the derived, complex n head, and that this adjunction creates a locality domain for special meaning different from complementation (cf. Harðarson, 2016). When the preposition is in the complement of the derived nominal, it is too far away from the root to condition special meaning. This explanation entails that deverbal nominals can be built as complex heads directly, without any phrasal structure, as I am proposing in this book. As we will see, it is unclear how a phrasal layering analysis can capture these patterns, since the locality between the root and the preposition would be identical for all cases.

It may be worth noting at this point that in Icelandic, many verbs are built by prefixing a preposition to them. An example is presented in (202) below, and we will see further examples in section 4.2.
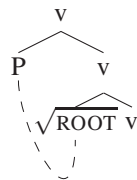
(202)   Þeir **að**-laga meðferðina   **að** sjúklingunum.
          they to-adapt treatment.the.ACC to patient.the.DAT
          'They adapt the treatment to the patient.'

A common analysis of P-prefixing cross-linguistically claims that such prefixes originate in the complement of the verb, and attach to the verb by movement (e.g. Svenonius 2004; Biskup 2007; Acedo-Matellán 2010; Myler 2011, 2013; Biskup & Putnam 2012; Wood 2015). However, while such cases will play a role in what follows, the primary interest in this chapter is in examples like (199)–(201), where the verb cannot take a prefix, while the noun derived from it must. For those cases, I will argue that a movement account is undesirable, as it is unable to explain why we find the patterns of (non)prefixation and (non)doubling that we find (cf. McIntyre 2018).
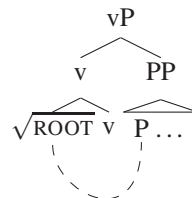
4.1 Proposal: Structural constraints on allosemy

The basic picture that I propose is one where adjunction to a complex head and complementation to a complex head create different locality domains for the conditioning of special meaning. First, I will present the basic claim schematically. Consider the verb structures in (203):
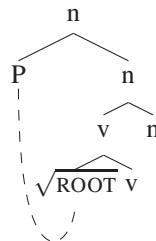
(203)   a. **P in Complex Head**   b. **P in Complement**

```
        v                                    vP
      /   \                                /    \
     P     v                              v      PP
         /   \                          /   \    /\
       √ROOT  v                       √ROOT  v  P ...
```
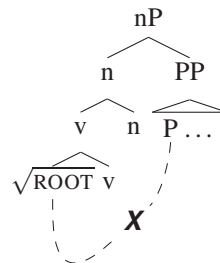
In (203a), P is adjoined to the complex v head, whereas in (203b), P heads a PP complement of the complex v head. In both of the structures in (203), P can condition special meaning on the root—whether it is adjoined to the complex v head or heads the complement PP. Now consider the derived nominal structures in (204).

(204)   a. **P in Complex Head**   b. **P in Complement**

```
        n                                    nP
      /   \                                /    \
     P     n                              n      PP
         /   \                          /   \    /\
        v     n                        v     n  P ...
      /   \                          /   \
    √ROOT  v                       √ROOT  v
                                            X
```

In (204), P can condition special meaning on the root only when it is in the complex head, not when it heads the complement PP.[1] Let us try to flesh out why this is.

Assume that adjunction creates segments of a category, and that, following Kayne (1994, 16), segments do not enter into c-command relations. We define c-command as follows:

(205)   X c-commands Y iff X and Y are categories and X excludes Y and every category that dominates X dominates Y. (Kayne, 1994, 16)

Given this, the crucial difference between (204a) and (204b) is that n c-commands P in (204b) but not in (204a).

(206)   a. **C-command relations in (204a)**
           P » $\sqrt{\text{ROOT}}$ » v » n
           $\sqrt{\text{ROOT}}$ » v » P
    b. **C-command relations in (204b)**
           $\sqrt{\text{ROOT}}$ » v » n » P

If we assume that v and n are both phase heads, there are two phase heads intervening between $\sqrt{\text{ROOT}}$ and P in (204b) but only one in (204a) and (203b). Why should this matter? Let us now turn to our assumptions about special meaning.
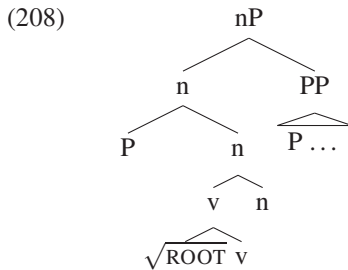
---

[1] As currently formulated, a truly denominal or deadjectival verb should not be able to get a special meaning conditioned by a PP complement; I have not examined this prediction closely.

First, we assume that the complement of a verb must be able to affect the meaning of the verb root. This seems to be a basic empirical fact that any theory must be able to reckon with. Second, we assume that special meaning is subject to some kind of phase locality (Marantz, 2013a), and that n and v are phase heads. As for the nature of the phase locality, Embick (2010) argues that a morphological dependency may cross no more than one phase head, and I assume that allosemy should work the same way. We can now see why one vs. two phase heads matters. In (203b) and (204a), only v intervenes between P and the $\sqrt{\text{ROOT}}$, so allosemy is possible. In (204b), v and n intervene between P and the $\sqrt{\text{ROOT}}$, so allosemy is not possible. Adjoining P to n means that n does not c-command P, and thus does not intervene between P and the $\sqrt{\text{ROOT}}$.

The empirical consequences of this proposal are as follows. First, when P and $\sqrt{\text{ROOT}}$ must be visible to each other for conditioning root meaning, prefixing will be obligatory in nominalization. If (207a) is not an option, (207b) will be required.

(207) a.

```
              n
           /     \
          v       n
        /   \
       P     v
           /   \
     √ROOT      v
```

b.

```
              n
           /     \
          P       n
                /   \
               v     n
             /   \
       √ROOT      v
```

Second, (204b) will only be possible when P makes its own semantic contribution, and does not condition special meaning on the root. Third, doubling will arise when P makes its own semantic contribution *and* conditions special meaning on the root. This involves separate uses of the same P.

(208)

```
                    nP
                 /      \
                n        PP
             /    \     /  \
            P      n   P ...
                 /   \
                v     n
              /   \
         √ROOT     v
```

I now turn to a brief discussion of prefixing to verbs, in order to set the stage for the argument for taking P to adjoin to the n head directly.

4.2 Prefixing to verbs

I first note that Icelandic does not freely or productively prefix prepositions to verbs. Moreover, prepositional prefixing is not "separable" in the Germanic sense; once something is a prefix, it stays with the verb. It is a very common phenomenon, but it is also very "lexicalized"—whether it happens depends on the particular verb and preposition in a rather unpredictable manner. Consider the following examples, adapted in part from Bjarnadóttir (2005, 119).

(209) **Prefixing Obligatory**

aðfrævast	*frævast að	'pollinate'
afbaka	*baka af	'distort'
afeitra	*eitra af	'detoxicate'
framreikna	*reikna fram	'extrapolate'
tileinka	*einka til	'dedicate'
umbera	*bera um	'tolerate'

Prefixing Optional

aðgæta	gæta að	'examine'
aðlaga	laga að	'adapt'
afgirða	girða af	'fence off'
framreiða	reiða fram	'serve'

Prefixing Impossible

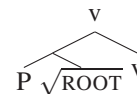|		
*aðdást	dást að	'admire'
*aðfinna	finna að	'criticize'
*afganga	ganga af	'remain'
*framdraga	draga fram	'emphasize'
*tilslá	slá til	'agree to do'
*umræða	ræða um	'discuss'

All of these verbs require prefixing in some deverbal form (whether it is a deverbal noun, adjective, etc.). However, as for the verbs themselves, we see examples where prefixing to the verb itself is obligatory, optional, or impossible. In this chapter I will be particularly interested in cases of the third sort (where prefixing to the verb is impossible), but the other two classes will inform the discussion as well.

I suggest two basic structures for prefixing of prepositions to verbs, which are shown in (210). Drawing inspiration from the analysis of Greek synthetic compounds in Iordăchioaia et al. (2017), I assume that these structures correspond to specific properties, which are listed below each structure.

(210) a.

```
          v
         / \
        P   v
           / \
       √ROOT  v
```

b.

```
          v
         / \
        P   \
       √ROOT  v
```

- An independent verb will exist, without the prefix.
- The independent verb will belong to the same inflectional class and show the same (ir)regular inflectional paradigm.
- P may condition a special (unpredictable) meaning of the root.

- There may be no independently existing verb, without the prefix.
- If there is an independent verb, it may not belong to the same inflectional class and show the same (ir)regular inflectional paradigm.
- P may condition a special (unpredictable) meaning of the root.

To the extent that (210a) and (210b) are distinguishable, I will mostly stay away from (210b), noting that this essentially involves the creation of a morphologically complex root. We will see some examples of prefixing to verbs in what follows. Two examples are shown, along with their nominalizations, in (211)–(212). Unsurprisingly, the P that is prefixed to the verb is also present in the nominal derived from the verb.

(211) a. Pósturinn   af-henti frúnni   pakkann.
        postman.the.NOM off-tossed lady.the.DAT package.the.ACC
        'The postman delivered the package to the lady.'

b. Af-hend-ing pakkans   fór   fram í gær.
    off-toss-NMLZ package.GEN went forth yesterday
    'The delivery of the package happened yesterday.'   (Jóhannsdóttir, 1995, 65)

(212) a. Konan   á-sakaði   manninn   (um framhjáhald).
           woman.the.NOM on-blamed man.the.ACC about adultery
           'The woman accused the man (of adultery).'

       b. Á-sök-un   konunnar   var réttmat.
           on-blame-NMLZ woman.the.GEN was rightful
           'The woman's accusation was rightful.'   (Jóhannsdóttir, 1995, 66)

One question that arises is whether the structures in (210) are base-generated, as I am proposing for nouns, or derived from head movement of a P in the complement of v. I will not take a strong stance on this here, although it is quite possible that both options exist. Considerations bearing on the issue would take us far outside the scope of the present work. I will mention here only two. First, if a P is prefixed by movement from a complement, we might expect it to assign the same case to its complement that it would have in the absence of such movement. Second, the presence of P heading a phrase might be motivated if its specifier (or a specifier in its extended projection) is needed to provide a syntactic slot for some argument. A brief discussion of these issues as they pertain to Icelandic can be found in Wood (2015, 283–290).

However, the primary point of interest will be cases where prefixing is only possible in nouns derived from verbs. In these cases, movement from a phrasal position is not motivated, as we will see. Moreover, the considerations mentioned above do not, as far as I know, motivate movement from a phrasal PP complement. We do not see cases where, say, a dative assigning P is prefixed to a noun and conditions the case on the complement of the noun. We also do not see constructions where the derived noun takes two arguments (or an argument and an -*st* clitic), with one of them corresponding to the specifier of a PP. For these reasons, I leave open the possibility that some verb prefixes might be derived by head movement, while still claiming that prefixes in derived nominals are not.

In principle, a large number of prepositions—maybe all simplex ones—can be prefixed at least sometimes. Some examples are presented in (213) below:

(213)

			Verb Prefix		Deverbal Only	
a.	*að*	'to/at'	*að-vara*	'warn'	*að-dáun*	'admiration'
b.	*af*	'from'	*af-henda*	'deliver'	*af-lestur*	'reading'
c.	*á*	'on'	*á-kveða*	'decide'	*á-bending*	'indictation'
d.	*eftir*	'after'	*eftir-láta*	'leave behind'	*eftir-vænting*	'expectation'
e.	*frá*	'from'	*frá-biðja*	'reject'	*frá-saga*	'story'
f.	*fyrir*	'for'	*fyrir-bjóða*	'forbid'	*fyrir-lestur*	'lecture'
g.	*upp*	'up'	*upp-fylla*	'fulfull'	*upp-lestur*	'recital'
h.	*um*	'about'	*um-orða*	'paraphrase'	*um-fjöllun*	'discussion'
i.	*úr*	'out of'	*úr-elda*	'decommission'	*úr-felling*	'omission'
j	*við*	'with'	*við-hafa*	'use'	*við-ræða*	'conversation'
k.	*yfir*	'over'	*yfir-drífa*	'exaggerate'	*yfir-drottnun*	'dominancy'

I now turn to the patterns we find in nominals derived from verbs that take PP complements.

4.3 Prefixing to derived nominals

4.3.1 Pattern 1: Prefixing and doubling

We turn to the first pattern mentioned above. In this pattern, a verb takes a PP complement. In the noun derived from this verb, the preposition must be prefixed to the noun. The preposition may then be doubled to

express the argument of the original PP. Consider the verb *benda*, which has a compositional meaning 'point at' (physical gesture) and a more idiosyncratic meaning 'indicate/point out'.

(214) a. Það er dónalegt að **benda á** ókunnugt fólk
　　　 it　is rude　　 to point　on unknown people.ACC
　　　 'It is rude to point at strangers.'[2]

　　 b. Nemandinn　　 **benti á** skekkjuna.
　　　 student.the.NOM pointed on mistake.the.ACC
　　　 'The student pointed out the mistake.'

The physical gesture meaning can occur with or without *á*, but the non-gesture meaning requires *á*. In (215), without the preposition, the meaning can only refer to the gesture.

(215)　 Ekki benda!
　　　 not　point
　　　 'Don't point!'
　　　 = 'Don't make the pointing gesture'
　　　 ≠ 'Don't make observations'

The preposition cannot be prefixed to the verb, whether we repeat it or not.

(216)　 * Nemandinn　　 **á-benti** (á)　skekkjuna.
　　　 student.the.NOM on-pointed (on) mistake.the.ACC
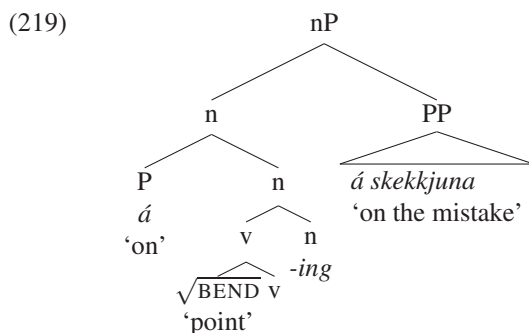　　　 'The student pointed out the mistake.'

According to the view adopted here, this means that neither of the structures in (210) can be contained in the derived nominal structure.

　　 When the verb is nominalized, the non-gesture meaning requires the preposition to prefix to the nominal.

(217)　 * **Bend**-ing-in　á skekkjuna　　 kom sér　vel fyrir kennarann.
　　　 point-NMLZ-the on mistake.the.ACC came REFL well for　teacher.the

(218)　 **Á-bend**-ing-in　á skekkjuna　　 kom sér　vel fyrir kennarann.
　　　 on-point-NMLZ-the on mistake.the.ACC came REFL well for　teacher.the
　　　 'The pointing out of the mistake was good for the teacher.'

<div align="right">(Jóhannsdóttir, 1995, 71)</div>

　　 I propose the structure in (219) for the noun phrase in (218):

(219)

The prefixing conditions the appropriate meaning of the root. Without the prefix, the noun *bending* exists, but it refers to a gesture, as in (220).

---

[2] Example from snara.is.

(220)   meintar bend-ing-ar   hans til áhorfenda
        alleged point-NMLZ-PL his   to viewers
        'his alleged gestures to the audience'[3]

(221)   Guðrún benti   á kennarann.
        Guðrún pointed to teachter.the.ACC
        'Guðrún pointed at the teacher.'

(222)   % bending Guðrúnar   á kennarann   (kom á óvart)
          pointing Guðrún.GEN to teachter.the.ACC (came on surprise)
        'Guðrún's pointing at the teacher (was surprising).'[4]

As shown in the above examples and represented in the structure in (219), the prefixed preposition can also be repeated. This is because it also contributes its own (directional) meaning. The meaning is vague enough that doubling is not obligatory for all speakers. Some require it, but others allow the argument to be expressed in the genitive.[5]

(223)   % Á-bend-ing   skekkjunnar   kom sér vel fyrir kennarann.
          on-point-NMLZ mistake.the.GEN came REFL well for   teacher.the
        'The pointing out of the mistake was good for the teacher.'

Some other cases of doubling, where prefixation cannot have a verbal source, are shown in (224)–(227):

(224)   a.   að {*um}-**ræða**   {**um**} þetta
             to {*about}-discuss {about} this
             'to discuss this'

        b.   **um-ræð**-a   **um** þetta
             about-discussion-NMLZ about this
             'discussion about this'

(225)   a.   að {*við}-**bregðast** {**við**} þessu
             to {*with}-react   {with} this
             'to react to this'

        b.   **við-brögð**-Ø   **við** þessu
             with-react-NMLZ with this
             'reaction to this'

(226)   a.   að {*í}-**kveikja** {**í**} húsinu
             to {*in}-ignite   {in} house.the
             'to set the house on fire'

        b.   **í-kveikj**-a   **í** húsum (er stranglega bönnuð)
             in-ignite-NMLZ in houses (is strictly   prohibited)
             'setting of houses on fire (is strictly prohibited)'

(227)   a.   að {*að}-**hlynna** {**að**} sjúklingnum
             to {*to}-attend   {to} patient.the
             'to attend to the patient'

        b.   **að-hlynn**-ing **að** sjúklingnum
             to-tend-NMLZ to patient.the
             'tending to the patient'

---

[3] Example from RMH.

[4] Note that some speakers find this CEN use of *bending* to be perfectly acceptable, but other speakers find it a odd or degraded.

[5] Halldór Sigurðsson points out that for him, *ábending á skekkjuna* "awkward, but maybe just stylistically," but that he doesn't find that it is clearly better than *ábending skekkjunnar* (as in (223)).

For related version of this doubling pattern, consider the verbs in (228):

(228)   a.   Þeir **laga** sig   ***(að)** breytingunum.
             they adapt REFL.ACC *(to) changes.the.DAT
             'They adapt to the changes.'

        b.   Þeir **að-laga** sig   **(að)** breytingunum.
             they to-adapt REFL.ACC (to) changes.the.DAT
             'They adapt to the changes.'

In this case, we see that the P must be overtly realized somewhere, but it needn't be prefixed to the verb. If it is not prefixed, it is obligatorily overt as the head of a separate PP. If it is prefixed, it may or may not also be realized overtly as the head of a separate PP. Now consider what happens if it is nominalized, as illustrated in (229).

(229)   a.   **að-lög**-un   ***(að)** breytingunum
             to-adapt-NLMZ *(to) changes.the.DAT
             'adaptation to the changes'

        b.   * **lög**-un   **(að)** breytingunum
             to-adapt-NLMZ (to) changes.the.DAT

        c.   * **lög**-un   breytinganna
             to-adapt-NLMZ changes.the.GEN

Here, in the nominal—unlike the verb—we see that prefixing *and* doubling is obligatory: the only acceptable structure is the one with the prefix and the overt PP head. Why might this be? Consider the structure of the verb phrase without prefixing:

(230)

In this structure, the preposition *að* determines/conditions the meaning of the root $\sqrt{\text{LAG}}$. Without *að*, the root $\sqrt{\text{LAG}}$ can still form a verb, but with the meaning 'fix/repair'.
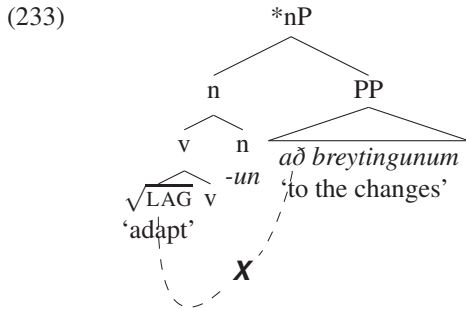
(231)   Hjólið   er bilað, geturðu lagað það   fyrir mig?
        bike.the is broken can.you fix   it.ACC for   me
        'The bike is broken, can you fix it for me?'[6]

Likewise, the nominal *lögun*, without prefixing, is possible, but it means 'fix/repair', not 'adapt'. The 'adapt' meaning is impossible in the nominal without the prefix.
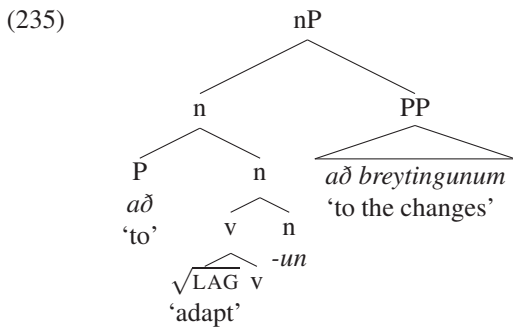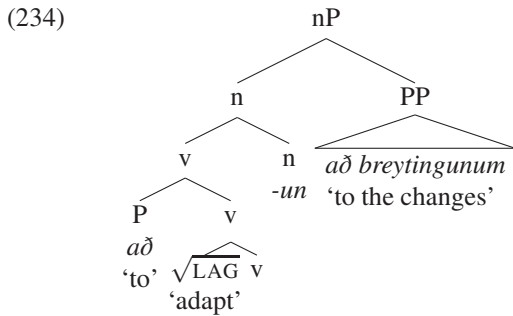
(232)   lög-un-in   á stólnum
        fix-NMLZ-the on chair.the.DAT
        'the fixing of the chair'

Consider what the structure would look like, according to the present proposal:

---

[6] Example from snara.

(233)   *nP

                          n   PP

                    v   n   *að breytingunum*
                              -un   'to the changes'
              √LAG v
              'adapt'

                              X

In this structure, the preposition is too far away from the root to condition the 'adapt' meaning. In contrast, adjunction—either to v as in (234) or to n as in (235)—brings it close enough.[7]

(234)   nP

                          n   PP

                    v   n   *að breytingunum*
                              -un   'to the changes'
              P   v
              að
              'to'   √LAG v
                      'adapt'

(235)   nP

                          n   PP

                    P   n   *að breytingunum*
                    að   'to the changes'
                    'to'   v   n
                                   -un
                        √LAG v
                        'adapt'

Once again, the preposition can be doubled in the PP because *að*, in addition to conditioning special meaning, has clear directional meaning of its own. In this case, the directional meaning is important enough to the overall meaning that as far as I know, the argument of P cannot be expressed without the preposition.

(236)   * að-lög-un   breytinganna
           to-adapt-NLMZ changes.the.GEN

4.3.2 Pattern 2: Prefixing only

In the second pattern, we also see cases where the nominal forces prefixation, but doubling does not occur. In these cases, the preposition's sole (semantic) purpose is to condition the interpretation of the root. Consider the examples in (237):

---

[7] Since v is an option, (234) may seem the most likely option. However, since prefixing to v is not obligatory, (235) is just as possible, and it is also possible that the word is arbitrarily ambiguous between the two structures.

(237) a. Guðrún **gerði við** bílinn.   b. * Guðrún **við-gerði (við)** bílinn.
           Guðrún did   with car.the.ACC   Guðrún with-did with car.the.ACC
           'Guðrún repaired the car.'   INTENDED: 'Guðrún repaired the car.'

Here the verb *gera* 'do', when combined with the preposition *við* 'with', means 'repair/fix'. This meaning is only available with the preposition, and the preposition cannot be prefixed to the verb. As in Pattern 1, however, in the nominalization, prefixation of the preposition is obligatory for this meaning to obtain.

(238) a. * ger-ð   { á bílnum   / bílsins   / við bílinn }
           do-NMLZ   { on car.the.DAT / car.the.GEN / with car.the }
           INTENDED: 'repair of the car'[8]
       b. við-ger-ð   { á bílnum   / bílsins   / *við bílinn }   tók langan tíma
           with-do-NMLZ { on car.the.DAT / car.the.GEN / *with car.the }   took long   time
           'Repair of the car took a long time.'

Unlike in Pattern 1, however, the preposition may not be doubled. Instead, its argument can be expressed in one of the "default" nominalization ways, such as with semantically vacuous *á*-PP or with a genitive DP (for some speakers).[9] According to the present proposal, this is because *við* does not contribute anything semantically in *gera við* 'fix'; rather, it conditions the meaning of the verb(al root). As before, the nominal *gerð* is well-formed with other meanings, such as 'make (of a car)', 'design', 'structure', 'version', 'act', etc.

To emphasize the main point, the head of a complement PP is close enough to the root in the vP structure to have this meaning effect, but not in the nominal.

(239) a. P may condition root meaning   b. P may not condition root meaning

Adjunction of P to n, as shown in (240), brings P close enough to the root to condition special meaning.

(240)   P may condition root meaning

In effect, the present proposal says that there is no P doubling, and when prepositional selection seems to be inherited in a complement PP, that is only because the P is contributing some meaning of its own. This leads us to expect that in some cases, we will simply see distinct prepositions. And in fact we find this. Consider the examples with *á-bending* 'indication' from above.

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[8] This string may be grammatical with other readings.

[9] Not all speakers accept the genitive here, but some do, and attested examples can be found.

(241)   **á-bend**-ing-in   **á**   skekkjuna
        on-point-NMLZ-the on mistake.the.ACC
        'the pointing out of the mistake'

Einar Freyr Sigurðsson (p.c.) points out to me that for him, while (241) is possible, another option is (242), with the distinct preposition *um* 'about'.

(242)   **á-bend**-ing-in   **um**   skekkjuna
        on-point-NMLZ-the about mistake.the.ACC
        'the pointing out of the mistake'

This makes sense, because if the P *á* 'on' is prefixed, then *á* isn't strictly necessary in the PP for the purposes of constructing verb meaning. Nevertheless, the *prefixing* of *á* 'on' is necessary, and *um* 'about' cannot serve this function.

(243)   * { bend-ing   / um-bend-ing   } um   skekkjuna
        { point-NMLZ / about-point-NMLZ } about mistake.the

What this shows is that the P *um* can serve the secondary, semantic role of introducing the argument, but it is not involved in conditioning root meaning.

   Two more examples of this pattern involve the verbs *dást að* 'admire (to)' and *annast um* 'take care of', which are nominalized as *aðdáun* and *umönnun*, respectively.[10] For both, P must be prefixed to the noun, but cannot be repeated in the complement of the derived noun.

(244)   a.   Guðrún {*að-}dáðist   {**að**} Maríu.
             Guðrún {*to-}admired {to} Mary
             'Guðrún admired Mary.'

        b.   **að**-dá-un   Guðrúnar   { á   / ***að** } Maríu
             to-admire-NMLZ Guðrún.GEN { on / *to } Mary
             'Guðrún's admiration of Mary.'

        c.   * dá-un   Guðrúnar   { á   / að } Maríu
             admire-NMLZ Guðrún.GEN { on / to } Mary

(245)   a.   Hún {***um**-}**ann**-að-ist   (**um**) barnið.
             she {*of-}take.care-PST (of)   child.the
             'She took care of the child.'

        b.   **um**-**önn**-un-in   { á   barninu   / ***um** barnið   }
             of-take.care-NMLZ-the { on child.the.DAT / *of   child.the.ACC }
             'the taking care of the child'

        c.   * **önn**-un-in   { á   barninu   / **um** barnið   }
             take.care-NMLZ-the { on child.the.DAT / of   child.the.ACC }

        d.   **um**-**önn**-un   barnsins
             of-take.care-NMLZ child.the.GEN
             'the taking care of the child'

        e.   * **önn**-un   barnsins
             take.care-NMLZ child.the.GEN

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[10] Note that most speakers prefer to leave the preposition *um* out with *annast*, and some find *um* better with a verb phrase like *annast um málið* 'take care of the issue'. Some report a possible meaning difference, where the event is more of an activity when the preposition is present. One possibility is that the preposition is actually always present syntactically, but sometimes null, as proposed for certain other transitive *-st* verbs by Wood (2015, 285–290); see especially the discussion of the NOM-ACC verbs *forðast* 'avoid', *undirgangast* 'undertake', *umgangast* 'associate with' and *áfellast* 'blame' (Wood, 2015, 289). The judgments of the nominal form *umönnun* are consistent across speakers.

4.3.3 Pattern 3: Nominal selects the same PP

In the final pattern that we see, the derived noun selects the same preposition that the verb it is based on selects, but there is no prefixing at all. In such cases, the preposition only contributes meaning of its own, and does not condition any special meaning on the root. We see an example of this pattern with the verb *hugsa* 'think' in (246).

(246) a. Guðrún hug-sa-ði   **um** þetta.
           Guðrún think-VBLZ-PAST about this
           'Guðrún thought about this.'

       b. hug-s-un   Guðrúnar   **um** þetta (í   tvo tíma) (truflaði vin   hennar)
           think-VBLZ-NMLZ Guðrún.GEN about this   (for two hours) (bothered friend her)
           'Guðrún's thinking about this (for two hours) (bothered her friend)'

       c. hug-s-un-in   **um** þetta
           think-VBLZ-NMLZ-the about this
           'the thinking about this'

The verb *hugsa* 'think' may select a PP headed by *um* 'about', like *ræða* 'discuss' above. But unlike *ræða* 'discuss', when *hugsa* 'think' is nominalized, the preposition need not be prefixed to the derived noun.[11] The reason is that the preposition, in this context, is not needed to condition any special meaning on the verb. The meaning of the preposition *um* 'about' in this use, is quite general, found with many verbs and nouns, in uses corresponding fairly well to the English preposition 'about'. Moreover, *hugsa* 'think' can occur without the preposition and happily retain its basic meaning.

(247) Guðrún er ennþá að hug-sa.
       Guðrún is still   to think
       'Guðrún is still thinking.'

Similar observations can be made about other examples. The verb *færast* 'move' may select a directional preposition like *í* 'into', with a predictable meaning. When nominalized, this preposition may head the complement of the derived nominal without prefixing to it.

(248) a. Ákveðniliðir   færast í   frumlagssæti.
           determiner.phrases move into subject.position
           'Determiner phrases move into subject position.'

       b. fær-sla   ákveðniliða   í   frumlagssæti
           move-NMLZ determiner.phrases.GEN into subject.position
           'the movement of determiner phrases into subject position'

As above, the verb has no special meaning that depends on the preposition. The same holds for *traðka* 'trample' with locative *á* 'on'.

(249) a. Þeir tröð-ku-ðu   á   vilja þingsins.
           they trample-VBLZ-PST on will parliament.the.GEN
           'They trampled on the will of the parliament.'

       b. tröð-k-un   á   vilja þingsins   er óþolandi
           trample-VBLZ-NMLZ on will parliament.the.GEN is intolerable
           'Trampling on the will of the parliament is intolerable.'

       c. tröð-k-un   almennings á   vilja þingsins
           trample-VBLZ-NMLZ public.GEN on will parliament.the.GEN
           'the public's trampling on the will of the parliament'

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[11] We will see below that prefixing *um* 'about' is in fact not ungrammatical, but it results in a different meaning.

    d.   tröð-k-un-in   á vilja þingsins
          trample-VBLZ-NMLZ-the on will parliament.the.GEN
          'the trampling on the will of the parliament'

    e. * tröð-k-un   vilja þingsins
          trample-VBLZ-NMLZ will parliament.the.GEN
          INTENDED: 'the trampling on the will of the parliament'

Consider also the case of the verb *langa* 'want'. It may select a PP object headed by *í* 'in'. When it is nominalized, this preposition is retained, along with the same basic meaning of the verb, without any prefixing.

(250) a.   Guðrúnu   langar í vín.
             Guðrún.ACC wants in wine
             'Guðrún wants wine.'

        b.   löng-un   hennar í vín
             want-NMLZ her   in wine
             'her desire for wine'

From an English perspective, this may seem different from the cases above, with the use of *í* 'in' seeming more idiosyncratic. However, it is less surprising within the general system of Icelandic. First of all, note that as above, the *í* 'in' is not necessary for the basic meaning of the verb.

(251)   Guðrúnu   langar að fara.
         Guðrún.ACC wants to leave
         'Guðrún wants to leave.'

This supports the present explanation for why prefixing is not needed: the verb root does not need to 'see' the preposition to get its meaning. Moreover, *í* 'in' is used much more generally in Icelandic than in English to introduce (generally unaffected) themes.

(252) a.   að ná í myndirnar
             to get in pictures.the
             'to get the pictures'   (Hilmisdóttir, 2007, 103)

    b.   að sparka í vegginn
             to kick   in wall.the
             'to kick the wall'

    c.   að pota í einhvern
             to poke in someone
             'to poke someone'

    d.   að hringja í einhvern
             to call   in someone
             'to call someone'

Thus, the preposition *í* 'in' is not getting a special use or meaning conditioned by the verbal root of *langa* 'want'; its use reflects a more general use that is found in the language.

    As mentioned above, prefixing is not necessarily ungrammatical with nominals of this sort. The preposition *um* 'about' can be prefixed to *hugsun* 'thinking', but then it gets a different meaning. Instead of general thinking, it refers to 'pondering'—really thinking, reflecting, taking one's time, etc. The preposition *um* generally cannot be prefixed to the verb, however.[12]

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[12] Sigríður Sæunn Sigurðardóttir has reported encountering examples like (253), and finds herself 'nearly ready to accept them'. All other speakers I have asked reject this, however. Another, for present purposes irrelevant use of *um-* as a prefix is possible, where *umhugsa þetta* would mean 'rethink this'. This use of *um-* is fairly productive, and means something like 'do again in a different way'. Its distribution has not been studied, as far as I know, and I also do not know how widely accepted its use with *hugsa* 'think' is.

(253) a. * Guðrún um-hug-sa-ði   (um) þetta.
         Guðrún about-think-VBLZ-PAST (about) this
         INTENDED: 'Guðrún pondered (about) this.'

      b. um-hug-s-un   Guðrúnar   um þetta
         about-think-VBLZ-NMLZ Guðrún.GEN about this
         'Guðrún's pondering about this'

This reading is possible with a non-nominalized verb phrase *að hugsa sig um*, literally 'to think REFL.ACC about', which means 'to ponder'. Here, *um* is a particle which does not prefix to the verb, and the direct object is a reflexive pronoun.

For examples which do not have an established special meaning, speakers' reactions to the prefixing for derived nouns where it is unnecessary are revealing. Consider first *færsla* 'movement', which as we saw above does not need a prefix. When asked whether prefixing was nevertheless possible, speakers gave a variety of reactions. Some simply rejected it outright. Others said it was weird, but not necessarily impossible. One speaker said they felt like it meant something "more specific," but could not say exactly what. Another said one "could make it mean something new" if one needed to. Yet another, after rejecting it, said it would be "a separate noun" and suggested that maybe it would be better in a separate context.

(254) (?? í)-fær-sla   ákveðniliða   í   frumlagssæti
      (?? in)-move-NMLZ determiner.phrases.GEN into subject.position
      'the movement of determiner phrases into subject position'

Essentially the same range of reactions was found for prefixing of *á* 'on' to *tröðkun* 'trampling' and *í* 'in' to *löngun* 'wanting/desire'. In fact, *í-löngun* is attested and can be found in the dictionary on snara.is. The speakers I consulted found it unusual however, some rejecting it, others saying it was strange but grammatical, etc. This is in sharp contrast from the reactions speakers gave to examples where prefixing is needed to condition special meaning. There, speakers judged examples without the prefix, such as (255a) (repeated from above), as sharply unacceptable.

(255) a. * ger-ð   { á bílnum   / bílsins   / við bílinn }
         do-NMLZ   { on car.the.DAT / car.the.GEN / with car.the }
         INTENDED: 'repair of the car'[13]

      b. við-ger-ð   { á bílnum   / bílsins   / *við bílinn }   tók langan tíma
         with-do-NMLZ { on car.the.DAT / car.the.GEN / *with car.the }   took long   time
         'Repair of the car took a long time.'

This general picture makes sense from the present perspective. From a purely syntactic standpoint, prepositional prefixing is a general option in the language: P may adjoin to n (or v or a, for that matter), and create another n. However, the interpretation of this operation involves the negotiation of root meaning. To put it plainly, there has to be a reason to do it: if there is no established (or computable) root semantics depending on the relation between P and the root, the result will seem strange, superfluous, and even totally unacceptable. This is essentially the same sort of issue revolving around any root-derived word. If a given root adjoins to n, to form a noun, the speaker and the speech community must negotiate what this root+n combination will mean. According to the present proposal, prepositional prefixing is a way of fixing/establishing root meaning, so it is subject to the same kinds of conditions, despite being a generally available syntactic option.[14]

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[13] This string may be grammatical with other readings.

[14] See, for example, the discussion of *thief* versus *stealer* in Embick & Marantz (2008). Embick & Marantz (2008) argue that the existence of *thief* does not directly block the formation of root-derived *stealer*. If there is any interaction, it may be at the level of use, not grammar: syntactically, [n $\sqrt{\text{STEAL}}$ n$_{er}$] is grammatical. However, speakers may have never needed to create such a root nominalization. In fact, I strongly suspect that if one surveyed a variety of English speakers (who have not studied the linguistic literature on the issue) on the acceptability of *stealer*, the range of reactions would be highly similar to the reactions described above for "unnecessary" prefixing (some rejecting, some saying 'weird but possible', some trying give it a special meaning). See also Embick (2016) on "polymorphy" and competition at the level of use.

In contrast, speakers reject the absence of prefixing when it is necessary because there, the system does not generate the appropriate form-meaning pair. Even if speakers can easily figure out what *gerð við þetta* 'repair of this' or *brögð við þessu* 'reaction to this' should mean, the forms are ungrammatical. This is because the prepositions are too far away from the root to condition the appropriate meaning, so the intended meaning is not built.

4.3.4 Mixed Patterns: Doubling optional

I have argued that apparent "doubling" of a preposition indicates that the preposition has two functions. First, it expresses its own meaning, which is realized by heading a PP complement. Second, it conditions special root meaning, which is realized as prefixing of P to the derived noun. It may seem surprising, then, that in some cases, the preposition is only optionally repeated. With *hlynna* 'tend', for example, the preposition may be repeated or the relevant argument can be expressed as a genitive.

(256)   að {*að}-**hlynna** {**að**} sjúklingnum
          to {*to}-attend   {to} patient.the
          'to attend to the patient'

       a.   *(að-)hlynning   **að sjúklingnum**
          *(to-)tend-NMLZ to patient.the.DAT
          'tending to the patient'

       b.   *(að-)hlynn-ing   **sjúklingsins**
          *(to-)tend-NMLZ patient.the.GEN
          'tending to the patient'

But if the argument can be expressed as a genitive in (256b), what meaning could the preposition be contributing in (256a)?

I suggest that that the answer lies in the range of meanings available to the genitive, along with the rather vague (but still meaningful) contribution of the preposition. In short, the two structures arrive at the same or at least substantially overlapping meanings in different ways. Therefore, we find apparent semantic overlap for certain nominals, but not others. First, consider the possibility that there may be subtle semantic distinctions that are hard to pin down. Consider the pair in English:

(257)   a.   tend the patient
          b.   tend to the patient

Speakers tend to report that there is some meaning difference between these two, but it is difficult to say exactly what that is.

It is well-known that the genitive can express a range of relations between two nouns. In this instance, the genitive can express a meaning that comes "close enough" to the relation expressed by the preposition as to resemble optionality.

(258)   a.   **Meaning 1 (Genitive)**
                 'tending activities defined/measured by, or revolving around the patient'
          b.   **Meaning 2 (*að* PP)**
                 'tending activities directed toward the patient'

The situation is reminiscent of the dative alternation, where there is a meaning difference but substantial overlap in the result, resulting in well known pairs like the following:

(259)   a.   send the letter to {them / France}

      b.   send {them / #France} the letter

If this is on the right track, we might expect to find particular examples where the genitive has meanings that the PP cannot, and/or vice-versa. In fact, we find exactly this. First, and most sharply, consider the following contrast.

(260)   a. Fengu þeir **að-hlynn-ingu læknis**   á virkjanasvæðinu.
            got   they to-tend-NMLZ doctor.GEN at power.plant.area.the
            'They were tended to by a doctor at the power plant area.'

       b. #Fengu þeir **aðhlynningu að lækni**   á virkjanasvæðinu
            got   they to-tend-NMLZ to doctor.DAT at power.plant.area.the
            ≠ 'They were tended to by a doctor at the power plant area.'

(261)   a. enda naut   hann **að-hlynn-ingar frábærs starfsfólks** á þessum stofnunum
            and enjoyed he   to-tend-NMLZ great employees.GEN at this   office
            'And he enjoyed being tended to by the great employees at this office.'

       b. #enda naut   hann **aðhlynningar að frábæru starfsfólki** á þessum stofnunum
             and enjoyed he   to-tend-NMLZ to great employees   at this   office
            ≠ 'And he enjoyed being tended to by the great employees at this office.'

When *aðhlynning* is the complement of verbs like 'get', 'need', 'receive', 'have', etc., the genitive is easily and most saliently understood as the argument doing the tending, rather than the ones receiving it. This reading is completely unavailable with the *að*-PP, which can only introduce the people being tended to. Note that this fits with the general genitive meaning suggested above, "tending activities defined/measured by, or revolving around the nursing staff/doctor/etc."

    However, there are more subtle contrasts as well, that point to a non-equivalence of the genitive and the PP. Consider the attested example in (262a), and what happens if the genitive is changed to a PP.

(262)   a.   að því að mistök   hefðu verið gerð við **að-hlynn-ingu hans**
            because   mistakes had   been made with to-tend-NMLZ him.GEN
            'because mistakes had been made with his care/treatment/tending.'[15]

       b. #[?] að því að mistök   hefðu verið gerð við **að-hlynn-ingu að honum**
            because   mistakes had   been made with to-tend-NMLZ to him
            'because mistakes had been made with tending to him.'

A scenario that is compatible with (262a) would be one where the doctors correctly administer a course of treatment, but later determine that that course was a mistake as a whole. For example, they decide on a particular surgery followed by a particular course of medication. They later decide that this course of treatment had been a mistake; they should have chosen a different kind of surgery or a different course of medication. In (262b), however, this scenario is much less likely. In (262b), a more appropriate scenario would be one where the overall course of treatment is not a mistake, but the doctors made a mistake in the process of administering it. For example, they chose the correct surgery, but made a mistake in performing it, or they chose the right medication, but accidentally administered something else. That is, the PP example more saliently brings out the activities directed toward the patient, whereas the genitive emphasizes the event as a whole. In most circumstances, those two readings will overlap enough that they may seem to be equivalent.

    Now compare this with a case where the genitive is not possible:

(263)   Þeir **{að}-laga** sig   **{að}** breytingunum.
          they {to-}adapt REFL.ACC {to} changes.the.DAT
          'They adapt to the changes.'

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[15] Example from RMH.

     a.   að-lög-un   að breytingunum
             to-adapt-NLMZ to changes.the.DAT
             'adaptation to the changes'

     b. * að-lög-un   breytinganna
             to-adapt-NLMZ changes.the.GEN

Evidently, the meaning of the genitive is not able to construct an overlap of the sort seen above. Here, we do not have adapting activities defined, measured by, or revolving around the changes. Rather, the directional meaning is a core part of the change-of-state meaning of the verb, and must be expressed with the PP.

    Finally, there are some cases of speaker variation. Recall that sometimes more than one preposition is possible to express a given idea.

(264)   a.   **á-bend**-ing-in   **á** skekkjuna
             on-point-NMLZ-the on mistake.the.ACC
             'the pointing out of the mistake'

       b.   **á-bend**-ing-in   **um** skekkjuna
             on-point-NMLZ-the about mistake.the.ACC
             'the pointing out of the mistake'

The present proposal would lead us to suspect that the prepositions are doing subtly distinct things, semantically. Interestingly, the genitive is possible here for some speakers, but not others:

(265)   % á-bend-ing   skekkjunnar
         on-point-NMLZ mistake.the.GEN

Jóhannsdóttir (1995, 71) marks (265) as ungrammatical, but Halldór Sigurðsson (p.c.) finds (264a) "awkward, but maybe just stylistically," but not clearly better than (265). I have since found other speakers who accept or reject (265). The emergence of this kind of variation is now expected, since constraints on the use of genitive stem from rather subtle aspects of (de)verbal meaning, which can vary from speaker to speaker, an underspecified set of genitive meanings, which can vary in their salience and availability, and potentially vague/overlapping contributions of the preposition.

    Despite the uncertainty and variation in some cases, there are clear patterns well. Both the patterns and the exceptions to them clarify what factors underlie doubling and its absence. They support the view that what underlies all of this is the semantic relationship between the verb root and its argument, the role that prepositions may play in mediating that relationship, and the role that prepositions may play in determining the verb root's meaning. Ultimately, I argue that the locality of these relationships point to a Complex Head analysis of deverbal nouns rather than a Phrasal Layering analysis.[16]

4.4 Conclusion

This chapter has focused on how Icelandic prepositional prefixing supports three main points. First, prepositions play a dual role in constructing verb meaning. Second, the patterns of prefixation support the complex head theory of deverbal nouns argued for in this book. Third, we should distinguish adjunction from complementation for the purposes of locality.

    As for the first point, specific cases can be hard to distinguish in practice, but there is a clear sense that prepositions (i) may or may not have meaning of their own, and (ii) may or may not condition special meaning

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[16] A related but logically distinct point is that irrespective of the actual contribution of the preposition, what is really important in the present account has to do with the relationship between the preposition and the root/verb. The question is whether we need to know the lexical identity of the root in order to determine the interpretation of the preposition. This distinguishes between allowing (or requiring) a preposition and disallowing one.

on the verb root. We have seen how these distinctions come out in the denominal prefixing patterns.In deverbal nouns, prefixing is connected to special verb meaning, whereas heading a PP is connected with independent P meaning.

This brings us to the second point. The range of patterns in denominal prefixing would be hard to understand if deverbal nominals were built on top of verb phrases. The locality between the root and the preposition would be the same in all cases. When prefixing occurs only on nouns, a movement account would require skipping the verb (possibly violating the HMC), or moving to the verb only when the verb moves further. Even with such stipulations, such movement should not have any effect on the meaning, which seems contrary to fact. Finally, it is not clear why such movement would sometimes but not always involve doubling—again in a way that is connected to meaning. In contrast, the complex head analysis explains why such patterns arise in the first place, and how they connect to lexical semantics.

Finally, if we accept that prefixing really is to the noun, and not the verb, it is clear that we have to distinguish that structure from the complementation structure. The general intuition pursued here is that complex head formation allows P to attach to a noun without the n head intervening between it and the root. It seems that the relation between terminals within a complex head is closer than the relation of those terminals to the complement—but the complement must be visible at least sometimes (e.g. when there is only one category-determining head).[17] This latter point underscores the point that even when we are not building words on top of phrases, we are still doing it in the syntax, with systematic syntactic principles, which cut across the classic word/phrase distinction.

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[17] It is possible that this gives us a handle on synthetic compounds of idioms like *blow the whistle*, *whistle-blowers*, ??*blowers of whistles*, or *break the ice*, *ice-breaker*, **breaker of ice*. If we form synthetic compounds by adjoining the nonhead to the head n directly, it may allow the nonhead and the root to see each other in a way that it not possible in the phrasal counterpart. I leave exploration of this possibility for the future.

Chapter 5
Complex Event Nominals and Inheritance

In this chapter and the next, I present the details of the structural analysis defended in the previous two chapters. Drawing on contextual allosemy, I show how one structure can get multiple readings, accounting for both (partial) inheritance of argument structure on the one hand, and the systematic ambiguity of derived nominals on the other. After briefly introducing how allosemy derives the three basic readings of deverbal nominalizations, this chapter focuses primarily on Complex Event Nominals, where argument structure seems to be inherited. The claim here is that this reading arises when v gets the normal meaning that it gets in the context of a verb phrase, and n is semantically zero (an identity function). If the preposition *á* heads a PP complement of n, it can also be semantically zero. The result is, semantically, as though v combines directly with the DP.

(266)

Thus, the nP is semantically like a vP, and so it seems to inherit argument structure from a vP—at least as far as the internal argument is concerned. However, all n really inherits is the meaning of the verb. Above the nP level, similarities between the verb phrase and noun phrase stem from parallel interpretative principles, not direct inheritance.

5.1 The interpretation of nominals, simple version

In this section, I present a simplified version of the basic idea, showing how allosemy can derive the three basic readings. What I would like to emphasize first, however, is that the proposal I would like to make is independent of the specific semantic formulas I use to execute it. The point of presenting a specific set of denotations in lambda formulas is to show exactly how a theory of allosemy like the one I am proposing works in its details. What is presented in this book, however, is primarily a theory of the interface between syntax and semantics, not a theory of the semantic representations themselves. If the semantics of the verb turn out to be different from what I propose, this would not challenge what I see as the primary thrust of the proposal. If, however, the semantics of the deverbal nominal in a CEN reading turned out to be discretely

distinct from the semantics of the verb it is derived from, this would challenge the present proposal.[1] It seems to me to be possible, for example, to incorporate Discourse Representation Theoretic semantics along the lines proposed by Roßdeutscher & Kamp (2010) and Pross (2019), although the specifics of those proposals would have to be modified because they are built on a Phrasal Layering analysis of the syntax, which is at odds with the proposal here.

In part for this reason, I present two versions of the analysis. The first one uses a relatively simple denotation of the verb, which says that the root is a predicate of events and some entity bears the theme relation to the event. The second involves no theme relation, but builds verb phrase meaning through somewhat simpler allosemes and more complex semantic rules for interpreting syntactic structure. I generally assume that the second approach is on the right track, and assume it for the remainder of this chapter and the next, but I wish to emphasize that that is a distinct issue from the primary issue in this chapter. Therefore, I would like to reiterate what the main, substantive claims I am making are, and distinguish them from the specifics of what follows. The most important claims are:

- The CEN reading is distinct from other eventive readings.[2]
- The CEN reading arises when n is semantically zero, and v gets its ordinary verbal interpretation.
- Because v gets an interpretation, CEN readings cannot involve idiosyncratic meaning relationships between the root and n.
- The CEN reading can be built on top of a plain verb, with no complement; that is, a vP is not required.
- The external argument readings of CENs are computed in parallel, built on the nP, not inherited from the verb.

The exact formulas in the denotations of verbs could change completely, and if they met these conditions, would still be compatible with the primary proposal made here.

5.1.1 A first approximation of the three basic readings

With this background in place, consider again the three basic readings of a derived nominal, illustrated here with the noun *collection*.

(267) a.   Guðrún's constant collection *(of mushrooms) (drove her friends crazy)   (CEN)

     b.   The collection lasted 2 hours.   (SEN)

     c.   The collection is on a table in the other room.   (RN)

Suppose that these three readings of 'collection' are characterized by something like the formulas in (268).[3]

(268) a.   Complex Event Nominal = $\lambda x \lambda e.$ collect(e) & theme(x)(e)

     b.   Referring Nominal = $\lambda x \exists e.$ collect(e) & result(x)(e)

     c.   Simple Event Nominal = $\lambda x \exists e.$ collect(x) & x = e

The complex event nominal has the same meaning the verb would have, expressing a collecting event and a set of entities bearing the theme relation to that event. The referring nominal, in this case, denotes the entity whose existence is a result of a collecting event. The simple event nominal simply refers to the collecting event.

---

[1] Note that verbs may have meanings that do not show up in the derived nominal. What I am claiming is that the meaning of the derived nominal, in a CEN reading, will correspond to a possible meaning of a verb. To put it bluntly, the claim is that if a telicity PP is possible with a nominal, then there will be a morphologically related verb that same meaning.
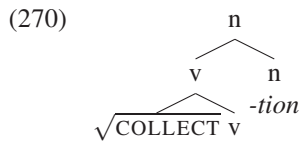
[2] I maintain this although the diagnostics are not always perfect. The most effective diagnostic, which doesn't seem to be counter-exemplified even in Lieber (2017), seems to be telicity PPs.

[3] See section 1.3.2.2 for a discussion of the semantic types I am assuming, along with the identity relation "x = e".)

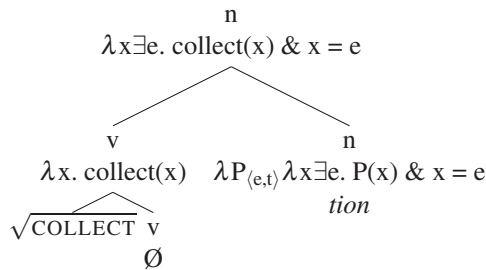The present proposal is derive these three readings with allosemy of functional heads, such as the following.[4]

(269) a. $\llbracket$ v $\rrbracket \leftrightarrow \lambda P_{\langle s,t\rangle}\lambda x\lambda e.\ P(e)\ \&\ theme(x)(e)$

    b. $\llbracket$ v $\rrbracket \leftrightarrow \varnothing$ $(= \lambda x_{\tau}.\ x,\ \text{where}\ \tau\ \text{is any type})$

    c. $\llbracket$ n $\rrbracket \leftrightarrow \lambda P_{\langle e,t\rangle}\lambda x\exists e.\ P(x)\ \&\ x = e$

    d. $\llbracket$ n $\rrbracket \leftrightarrow \lambda P_{\langle s,t\rangle}\lambda x\exists e.\ P(e)\ \&\ result(x)(e)$

    e. $\llbracket$ n $\rrbracket \leftrightarrow \varnothing$ $(= \lambda x_{\tau}.\ x,\ \text{where}\ \tau\ \text{is any type})$

Given these options, we could generate a number of interpretations for the same structure, depending on which allosemes of v and n are chosen. I will illustrate this with the English nominal *collection*, with the structure in (270).

(270)

Beginning with the SEN reading, the v is semantically zero and the n is the alloseme in (269c). These denotations are inserted in the the v and n nodes (in the post-syntactic semantics), deriving a noun that refers to the set of entities that are events of collecting.

(271) **Simple event** ("The collection lasted two hours")

    a. $\llbracket$ v $\rrbracket \leftrightarrow$ -$\varnothing$ $(= \lambda x_{\tau}.\ x)$ (269b)

    b. $\llbracket$ n $\rrbracket \leftrightarrow \lambda P_{\langle e,t\rangle}\lambda x\exists e.\ P(x)\ \&\ x = e$ (269c)

An RN reading is essentially built in the same way, except that the n head does not pick out an event. In this case, it picks out an entity that is the result of a prior event.

(272) **Referring Nominal** ("The collection is on a table in the other room")

    a. $\llbracket$ v $\rrbracket \leftrightarrow$ -$\varnothing$ $(= \lambda x_{\tau}.\ x)$ (269b)

    b. $\llbracket$ n $\rrbracket \leftrightarrow \lambda P_{\langle s,t\rangle}\lambda x\exists e.\ P(e)\ \&\ result(x)(e)$ (269d)
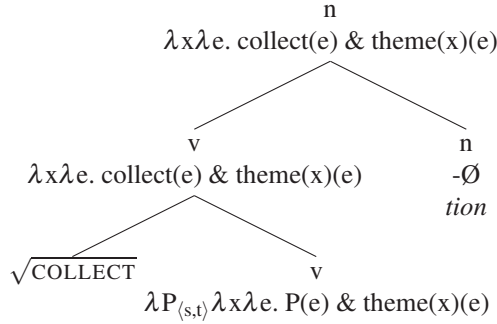

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[4] The following is not meant to be exhaustive; other allosemes are possible. See especially the discussion in section 6.3.

Finally, in the CEN reading, things go the other way. It is the n head that gets a semantically Ø denotation, and the v head gets the normal interpretation it would get in the context of a verb phrase.

(273) **Complex event** ("Guðrún's constant collection of mushrooms")

    a. $[\![\,v\,]\!] \leftrightarrow \lambda P_{\langle s,t\rangle}\lambda x\lambda e.\ P(e)\ \&\ theme(x)(e)$ (269a)

    b. $[\![\,n\,]\!] \leftrightarrow$ -Ø $(= \lambda x_\tau.\ x)$ (269e)

In the CEN derivation, the noun has the same meaning as the verb. When n is semantically null, some argument will have to merge to saturate the internal argument variable, just as it would with the verb. In the next section, I discuss the internal argument in more detail.

5.1.2 The internal argument of complex event nominals

According to the present proposal, the CEN reading is built when the v head gets its ordinary interpretation, and the n head is interpreted as Ø (a type-neutral identity function). This means that the noun has the same interpretation as the verb, so if a theme needs to be expressed, it must be expressed by some constituent of the noun. Assuming that the verb has an entity variable corresponding to the theme, it will be unsaturated. It can be saturated by a complement PP or genitive DP.

(274) a. söfn-un-in   á synum   b. söfn-un   syna
             collect-NMLZ-the on samples.DAT   collect-NMLZ samples.GEN
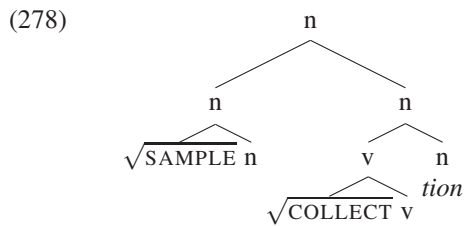   'the collection of samples'   'the collection of samples'

In the case of (276), the n head takes a genitive DP complement, which is something that we know that nouns can do in Icelandic (see (165) in chapter 3). In the case of (275), the noun takes a PP complement, which again is something that we know independently that nouns can do. The only thing extra we have to say is why the preposition *á* is chosen to realize the theme. Recall from chapter 3 that this is not a general 'dummy' preposition in the language. The answer provided here is not a deep one, and arguably should not be. Instead, we appeal to contextual allosemy to stipulate that in the context of an noun, *á* may be interpreted as semantically null.

(277) $[\![P_á]\!] \leftrightarrow$ -Ø $(= \lambda x_\tau. x) / [_{nP}$ n __ ... $]$

This allows *á* to be treated like a dummy preposition, but only in particular, specified contexts, such as that of a noun.[5] The result is that either of the two syntactic structures above allow the denotation of the DP to combine directly with the denotation of the n, which in turn is the same as the verb. Thus there are two syntactic means to the same semantic end, both recreating the semantic object that is created when the verb itself takes a DP theme complement.

Notice that if the theme is not merged as a DP or PP complement, the next DP argument, wherever it comes in syntactically, must be the theme. Poss, for example, cannot introduce an agent relation when the theme variable is still open. Thus, if synthetic compounds like *sample-collection* have a structure like (278), the nonhead will necessarily be interpreted as the theme as well.
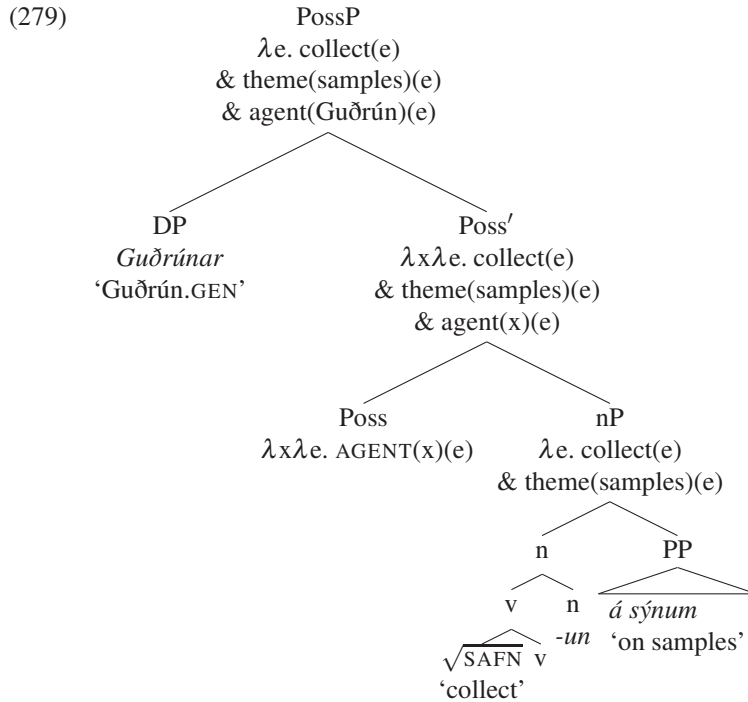
(278)

More needs to be said about compounds, however, so I will set this aside until I have discussed the interpretation of the external argument, and return to this matter in section 5.3.

5.1.3 The external argument of complex event nominals

What about the external argument? Is there any room in the structure for a Voice head? Here, I assume with Alexiadou that even if Voice is present in a nominalization, the external argument is not introduced there. Moreover, I will assume, as discussed in chapter 3, that there is in fact no Voice head in the structure. In the present analysis, the agent can be introduced by the Poss head directly. This is shown in (279).

---

[5] One could add further syntactic and semantic specifications to constrain the use of this alloseme, but I set them aside for now. Of course, this alloseme will only be useable if the noun in question is the sort that can combine with the denotation of a DP semantically.

(279)   PossP
                                          λe. collect(e)
                                       & theme(samples)(e)
                                       & agent(Guðrún)(e)

                          DP   Poss′
                       Guðrúnar λxλe. collect(e)
                     'Guðrún.GEN'   & theme(samples)(e)
                                                       & agent(x)(e)

                                            Poss   nP
                                    λxλe. AGENT(x)(e) λe. collect(e)
                                                                  & theme(samples)(e)

                                                          n   PP
                                                      v   n   *á sýnum*
                                                          -un   'on samples'
                                                 $\sqrt{}$SAFN   v
                                                  'collect'

Previous work has proposed that in verb phrases, Voice is interpreted as introducing an agent whenever it combines with an agentive vP (Wood, 2012, 2015, 2016; Myler, 2014, 2016; Kastner, 2016, 2017; Wood & Marantz, 2017).[6]

(280)   ⟦ Voice ⟧ ↔ λxλe. agent(x)(e) / __ (agentive vP)

Here, I would make a parallel proposal: Poss is interpreted as agentive when it combines with an agentive nP.[7]

(281)   ⟦ Poss ⟧ ↔ λxλe. agent(x)(e) / __ (agentive nP)

However, notice that the context here specifies syntactic information (the category of vP or nP) and semantic interpretation (agentive meaning). Moreover, the syntactic information is predictable and redundant Poss doesn't combine with vPs, and Voice doesn't combine with nPs. Therefore, we might make the context the same for both cases:

(282)   ⟦ {Voice/Poss} ⟧ ↔ λxλe. agent(x)(e) / __ (agentive event)

However, even this seems too redundant: the distribution of Voice and Poss is predictable as well. Myler (2016) and Wood & Marantz (2017) propose that Voice and Poss are really the same head, which Wood & Marantz (2017) call *i**, in two different places. In a sense, then, the external argument really is a possessor, structurally, even if it can be truly an agent in the same way that verbal external arguments are agents. The general rule is just that *i** is interpreted as an agent in the context of an agentive event.

(283)   ⟦ *i** ⟧ ↔ λxλe. agent(x)(e) / __ (agentive event)

This applies when *i** combines with nP or vP. It also allows for *i** to get other, more general possessive readings in addition to the verb-like agent meaning.

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[6] See Kastner (2016, 2017, 2019a,b) for more contexts that can condition an agentive interpretation of Voice.

[7] See Myler (2016, 52) for another example of allosemy with a Poss head.

(284) $\llbracket i^* \rrbracket \leftrightarrow \lambda P_{\langle e,t \rangle} \lambda y. \iota x. \, P(x) \, \& \, \text{possessor}(x)(y) \, / \, \underline{\hspace{1em}} \, nP$

At present, these two rules are in competition as far as contextual allosemy is concerned, but the denotation in (284) will not be useable if the nP has the meaning of an agentive event, since it would be a type clash.

Consider the fact that in English *-ing* gerunds like (285a), the possessor can only be understood as agent, the one who is doing the performing. I assume that this is because *-ing* gerunds are built on a full verb phrase, possibly containing a Voice head (i.e., *i** with a vP complement). In contrast, although the nominalization *performance* as in (285b) can have this reading, it can also refer to other things, like the performance that Guðrún attended, the one she is always talking about, etc.[8]

(285)   a.   Guðrún's performing the song

        b.   Guðrún's performance of the song

However, it is not clear that these other readings are really being built on the CEN reading of the noun. Notice that if one adds a telic PP, as in (286), all these other readings disappear.

(286)   Guðrún's performance of the song in two minutes

Like (285a), (286) can only refer to an event where Guðrún is the agent, the one performing. This suggests that in fact, the other readings of the possessor in (285b) are built on SEN or RN readings of the nP.

Recall from chapter 2 that in general, the genitive DP can only be interpreted as an agent if there is some expression of the theme, either as a PP or as the non-head of a compound. The present analysis explains this asymmetry as follows. If the genitive is introduced as the complement of n, then it must be a theme; no external argument reading will be available, as there is no Poss head in the structure at this point to introduce it. Once this theme genitive is present, it will prevent any other genitive from merging into the structure (since it must move to SpecPossP). The same holds for synthetic compounds, as we will see—the nonhead must be interpreted as expressing the theme relation. So it still cannot be interpreted as an agent. The only way to get an agentive genitive is to build the full event, including the theme, by the nP level (either with the theme as a PP or the theme as a compound nonhead), and introduce the genitive in SpecPossP.

It should be clear by now that according to the present system, argument structure inheritance strictly speaking only pertains to the internal argument. It is the verb's meaning, along with the kind of object the verb is expected to take, that is inherited by the derived noun. The external argument meaning is not inherited from the verb or any phrase that the verb might have projected: it is neither inherited nor obligatory (that is, not automatically). However, there is a sense in which inheriting the verbal meaning is enough, because Poss can then serve the function of Voice, and both treat the object they combine with (the nP or vP, respectively) in the same way. This, then, is where parallelism of the sort found in Chomsky 1970 and Marantz 1997 comes in. The relationship between Voice and a vP operates in the same way as the relationship between Poss and nP: the meaning of the former is negotiated semantically based on the meaning of the latter. When the meaning of an nP is the same as a corresponding vP would be, the result is the same.

Finally, recall that we have seen that the only Voice diagnostics that Icelandic derived nominals pass have to do with agentive modifiers, like purpose clauses, comitative PPs, instrument PPs, manner/agent PPs, and *without*-phrases. The present analysis offers a solution as to why these tests, but not the others, make it seem as though Voice is there. In fact, all that we need to say as that these modifiers can attach to PossP in the way that they can also attach to VoiceP—something that is generally assumed for PPs. Since PossP has the same meaning that a VoiceP would have, the modifiers are interpreted at that level in the same way that they are interpreted at the VoiceP level. The tests that truly diagnose Voice show, or are consistent with, Voice not being there at all.

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[8] Thanks to Julie Legate for bringing this point up in this context.

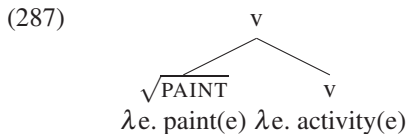## 5.2 The interpretation of nominals, building event structure

I now turn to a somewhat more complex set of assumptions about the basic construction of eventive verbal meaning. To show how the basic system works, I have made certain simplifications to the semantics in section 4.1. This includes the ways that roots are integrated into event structure and the use of a thematic role "theme". If the reader is happy with such simplifications, they may skip this section. However, research on the semantics of roots and event structure leads me to show what the system looks like if these simplifications are abandoned. Specifically, in this section we abandon the theme role, and assume that event structure is constructed. In order to extend this view to nominals, it is necessary to formulate the rules involved in event structure construction in a way that does not refer specifically to verbs, verb phrases, and the like, and this is the task of this section.
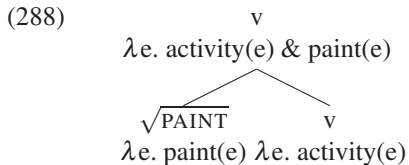
5.2.1 The interpretation of roots and themes

This section will address two related issues. First, the present proposal requires that verbal roots are generally first-merged with v, and not with the complement of v. This is so even with roots that denote end-states like $\sqrt{\text{OPEN}}$ or $\sqrt{\text{CLEAR}}$. While this assumption has been made in some recent work (Marantz, 2013a,b, 2018), it is far from universally accepted, and bears further scrutiny. More commonly, it is assumed that roots denoting end states are merged in the complement of v, such as attached to the DP. I will show how change-of-state semantics can be encoded internally to the complex head, without merging the theme.

Second, various works, but Wood & Marantz 2017 in particular, propose that theme roles do not exist in the way that agent or beneficiary roles do. Rather, what we call the theme is a DP that is part of the construction of the event structure semantically. Wood (2015) proposed that this works by coercing a DP to refer to the state of that DP; v is then interpreted as the event that causes that end state. This section will integrate this basic idea into the semantics of nominalizations, which requires specific technical revisions, which I argue are closer in spirit to the original idea than previous technical implementations of it. In essence, the deverbal noun inherits the activity meaning of the verb, and the juxtaposition of this and the end state denoted by the DP leads to a change of state interpretation (for change of state themes). The results simplify the denotations inserted as contextual allosemes, and shift some of the semantic burden for event construction to the interpretive component.

First, consider verbs with roots denoting the manner of the activity, such as 'paint'. I assume that the normal semantics of little v for such verbs is simply an event variable denoting an activity.

(287)   v
          ╱‾‾‾‾‾╲
     $\sqrt{\text{PAINT}}$ v
   λe. paint(e) λe. activity(e)

The root and v can then combine by simple Predicate Conjunction, to denote an event that is an activity and is a painting event.

(288)   v
          λe. activity(e) & paint(e)

          ╱‾‾‾‾‾╲
     $\sqrt{\text{PAINT}}$ v
   λe. paint(e) λe. activity(e)

When v combines with a direct object DP, there is no automatic way to combine the denotation of v and the denotation of DP. In such cases, the system will by default build a change of state interpretation. This is done

in two steps. First, there is a general state coercion rule that may apply in the grammar when it is needed or triggered.

(289) $[\![\,DP\,]\!] \to \text{STATE}([\![\,DP\,]\!]) = (\lambda x \lambda s.\ \text{state}(s)(x))([\![\,DP\,]\!])$
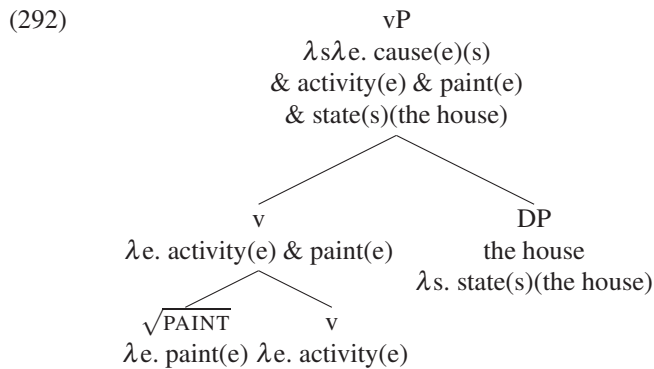
This general rule can be invoked in a specific case, as in (290).[9]

(290)   If α is a branching node, and $\{\beta,\gamma\}$ is the set of α's daughters, and β is of type $\langle s_e,t\rangle$ and γ is of type e, then $[\![\,\gamma\,]\!] \to \text{STATE}([\![\,\gamma\,]\!])$.

Second, there is a default composition rule introducing a cause relation between a set of events and a set of states, which I define as in (291).[10]

(291)   If α is a branching node, and $\{\beta,\gamma\}$ is the set of α's daughters, and β is in $D_{\langle s_e,t\rangle}$ and γ is in $D_{\langle s_s,t\rangle}$, then $[\![\,\alpha\,]\!] = \lambda s\lambda e.\ \text{cause}(e)(s)\ \&\ [\![\,\beta\,]\!](e)\ \&\ [\![\,\gamma\,]\!](s)$

Applying these two rules yields the structure and interpretation in (292).

(292)

```
                        vP
              λsλe. cause(e)(s)
              & activity(e) & paint(e)
              & state(s)(the house)
                  /            \
                 v              DP
      λe. activity(e) & paint(e)   the house
                              λs. state(s)(the house)
            /        \
        √PAINT        v
   λe. paint(e)   λe. activity(e)
```

Finally, the state variable undergoes existential closure, leaving the activity variable as the only lambda bound variable. This gives the vP the denotation in (293).

(293) $[\![\,\text{paint the house}\,]\!] = \lambda e \exists s.\ \text{cause}(e)(s)\ \&\ \text{activity}(e)\ \&\ \text{paint}(e)\ \&\ \text{state}(s)(\text{the house})$

   When the root names the end state of a change of state, the composition will proceed differently, but according to the same principles. First, I assume that the root will be interpreted as a set of states, and that v will still be interpreted as an activity.

(294)

```
              v
           /     \
        √OPEN      v
    λs. open(s)  λe. activity(e)
```
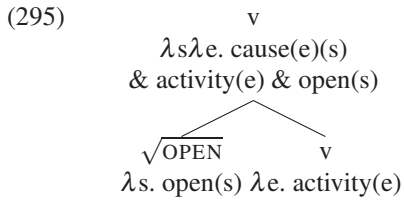
However, unlike above, this does not combine by Predicate Modification. Instead, it meets the structural description for the same cause rule that applied at the vP level above, namely (291). Here, it applies at the v-head level.[11]
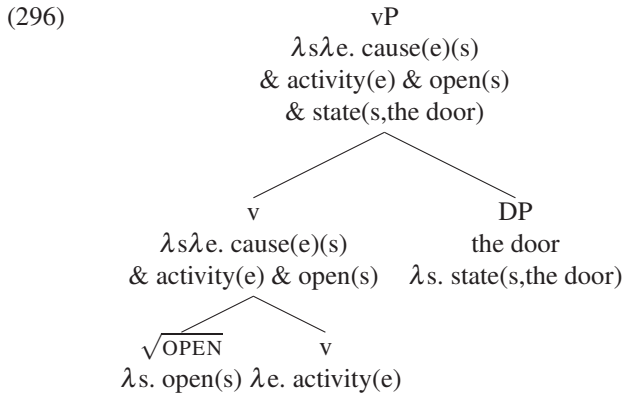
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[9] An alternative to the composition rules proposed here that I have not considered in detail yet would be to insert Dissociated Nodes into the syntactic structure at LF, and tie the interpretations to those nodes, as is proposed for the interpretation of attributive compounds in recent work by Ingason & Sigurðsson (to appear).

[10] Notice that unlike the rule in Wood & Marantz (2017), the formulation of these rules does not make explicit reference to any syntactic category, like v or DP.

[11] This analysis is inspired in part by the discussion of roots in Alexiadou (2009).

(295)   v
                      $\lambda s \lambda e.$ cause(e)(s)
                      & activity(e) & open(s)

                   $\sqrt{\text{OPEN}}$ v
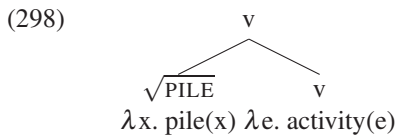 $\lambda s.$ open(s) $\lambda e.$ activity(e)

When this verb combines with a DP, just as above the DP will be coerced to be interpreted as a set of states. This time, however, the DP can combine with the verb by a kind of conjunction rule—what we might call State Identification (on analogy with Event Identification); for more details, see section 1.3.2.3, where this is an instance of what is called "X Identification 2".)

(296)   vP
                          $\lambda s \lambda e.$ cause(e)(s)
                          & activity(e) & open(s)
                          & state(s,the door)

                    v   DP
            $\lambda s \lambda e.$ cause(e)(s)   the door
            & activity(e) & open(s) $\lambda s.$ state(s,the door)

         $\sqrt{\text{OPEN}}$ v
         $\lambda s.$ open(s) $\lambda e.$ activity(e)

As before, the state variable is existentially closed, yielding the vP semantics shown in (297).

(297) $[\![$ open the door $]\!]$ = $\lambda e \exists s.$ cause(e)(s) & activity(e) & open(s) & state(s,the door)

A final kind of root that is worth discussing is a predicate of entities, such as $\sqrt{\text{PILE}}$. When used in a verb phrase, it entails the creation of a pile: if I pile the books, there exist a pile (Levinson, 2007, 2010, 2014; Kastner & Irwin, 2018). The books still point to an end state, however. The books are in a state characterized by the properties of a pile. I assume, following previous work, that roots like $\sqrt{\text{PILE}}$ are predicate of entities, and that v still denotes and activity.

(298)   v

             $\sqrt{\text{PILE}}$ v
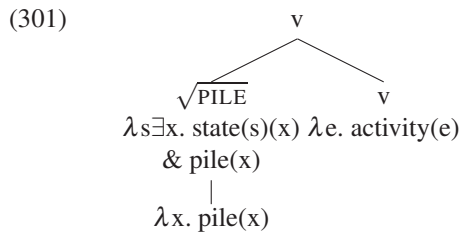 $\lambda x.$ pile(x) $\lambda e.$ activity(e)

As above, these denotations cannot compose directly. However, we already have a state coercion rule applying to DPs, as in (289) above, repeated here:

(299) $[\![$ DP $]\!]$ $\to$ STATE($[\![$ DP $]\!]$) = $(\lambda x \lambda s.$ state(s)(x))($[\![$ DP $]\!]$)
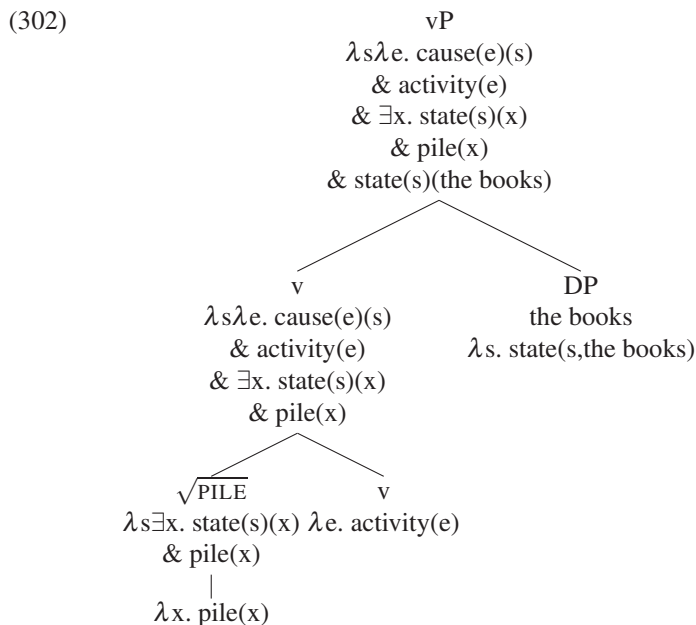
What is needed, I suggest, is to apply the a minimally different rule, with also introduces a state but along with existential closure over the entity variable of the root.

(300) $[\![$ $X_{\langle e,t \rangle}$ $]\!]$ $\to$ STATE($[\![$ $X_{\langle e,t \rangle}$ $]\!]$) = $(\lambda P_{\langle e,t \rangle} \lambda s \exists x.$ state(s)(x) & P(x))($[\![$ $X_{\langle e,t \rangle}$ $]\!]$)

Note that this is formulated to apply not just to roots, but anything of type $\langle e,t \rangle$, and will play a role in the analysis of synthetic compounds below. In the present case, applying this rule to the root $\sqrt{\text{PILE}}$

(301)

```
                    v
              ┌─────┴─────┐
          √PILE            v
   λs∃x. state(s)(x)   λe. activity(e)
        & pile(x)
            │
        λx. pile(x)
```

From here, everything proceeds as above, compositionally. The verb will be interpreted with the causative rule, and can take a DP object, which will also be interpreted as the result state of the causing event.

(302)

```
                            vP
                      λsλe. cause(e)(s)
                         & activity(e)
                         & ∃x. state(s)(x)
                           & pile(x)
                       & state(s)(the books)
              ┌────────────────┴────────────────┐
              v                                  DP
        λsλe. cause(e)(s)                     the books
           & activity(e)                  λs. state(s,the books)
           & ∃x. state(s)(x)
             & pile(x)
        ┌──────┴──────┐
     √PILE             v
 λs∃x. state(s)(x)  λe. activity(e)
      & pile(x)
          │
      λx. pile(x)
```

The only difference from the state roots above is that here it is asserted that there exists a pile which is in state s and the books are in state s—so the books and the pile point to the same state.[12] Again, the state is existentially closed, leading to the following denotation for *pile the books*.

(303)   ⟦ pile the books ⟧ = λe∃s. cause(e)(s) & activity(e) & ∃x. state(s)(x) & pile(x) & state(s)(the books)

With this much in place, we can see how a root adjoined to v can name the manner, result state, or an entity. We can now also see how the same meanings are built in nominalizations. Essentially, everything works the same as long as none of the rules above depend on a structural adjacency between v and DP—and indeed, none of the rules formulated above do. If a deverbal n head has the same denotation as the v head embedded in it, and PP complement has the same denotation as the DP embedded in it, then the semantic composition will proceed exactly as it does in the case of a verb phrase.

5.2.2 Endur- 're-' prefixation and head-internal change-of-state semantics

Recall from chapter 3 that I have argued that *endur*- 're-' attaches within the complex head directly. There it was noted that the alternative analysis, proposed by Wood (2009b) (adopting Marantz's (2009a; 2009b)

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[12] I suspect that this difference can also account for "pseudo-resultative" readings such as "Guðrún piled the books high", where it is the pile—or perhaps the state of the pile—that is high, but I leave this for future research.

analysis of English *re-*), was that *endur-* attaches directly to the direct object, modifying the end-state that that object denotes. Here, I would like to simply point out that if we accept the argument that *endur-* 're-' attaches directly to the head, this supports the view that change -of-state semantics is encoded within the complex head. This is because *endur-* 're-' points to the end-state, as argued by Wood (2009b) and Sigurðsson (2015), and adds the presupposition that this state has held before. If so, then the end-state must be available within the complex head, where *endur-* attaches.

5.2.3 Experiencer verbs and stimuli

We are now able to return to some facts brought up in chapter 3 regarding experiencer verbs, which raise the general question of what kinds of thematic relations can be expressed by the genitive, and what can be expressed by the *á*-PP. Consider first the example of *misheyrast* 'mishear' and its nominalization *misheyrn*. (304) is repeated from (157) in chapter 3.

(304)   Þér   hafa víst misheyr-st orð   mín!
        you.DAT have surely misheard-ST words my
        'You have surely misheard my words!'

    a.   misheyr-n   Jóns   olli   vandræðum
        mishear-NMLZ John.GEN caused problems
        'John's mishearing caused problems'

    b.   misheyr-n   Jóns   á orðum mínum olli   vandræðum
        mishear-NMLZ John.GEN on words my   caused problems
        'John's mishearing of my words caused problems'

First, consider that the genitive can be the experiencer, whether the object is present or not, but is not naturally interpreted as the stimulus, at least for some speakers. Second, consider that the *á*-PP can be the stimulus, but cannot be the experiencer.

What this suggests is that with a nominal like *misheryn*, we do not simply have a relation between a the embedded verb and a DP object that can be computed the way that themes were argued to be computed above. More specifically, this n cannot take a genitive complement at all, presumably because there is no way to interpret it. Instead, any genitive is derived by external merge in SpecPossP. I assume that the verb denotes an experience, and that given that, Poss will introduce an experiencer role, whether the stimulus is expressed in the structure or not.[13]

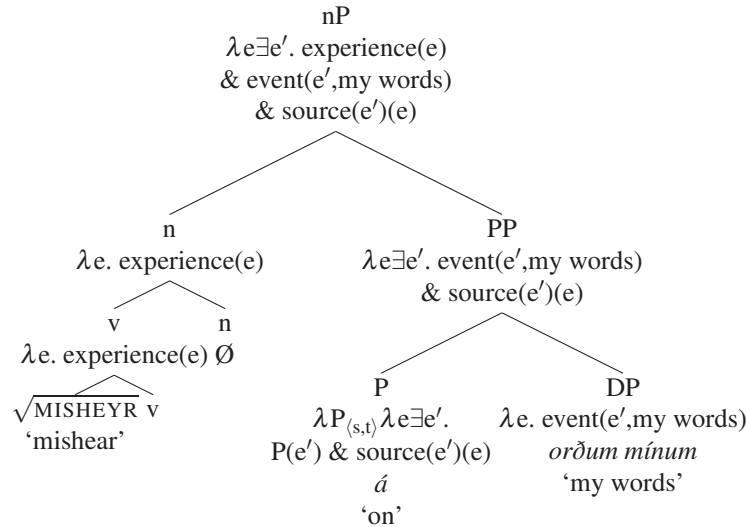(305)   a.   ⟦ Poss ⟧ ↔ λxλe. EXPERIENCER(x)(e) / __ experience event

    b.

---

[13] Note that the stimulus is optional with the verb *misheyrast* as well.

When the stimulus is present, it must be the *á*-PP. I propose that this is because here, *á* is not semantically Ø, but rather is co-opted by the system to introduce stimulus semantics. Wood (2015) tied stimulus semantics to a low Appl head that introduces both the experiencer and the stimulus. Here, I propose that the stimulus is introduced separately, as a contextually determined alloseme of the preposition *á*, as shown in (306). This denotation needs to combine with something of type $\langle s,t \rangle$, so the DP is coerced to be understood as an event. Once it does this, it may combine with the P by Functional Application. The n may then combine with the PP by general Predicate Composition (conjunction).

(306)   a. $[\![\, P_{á} \,]\!] \leftrightarrow \lambda P_{\langle s,t \rangle} \lambda e \exists e'. \, P(e') \, \& \, \text{source}(e')(e)$

         b.

$$
\begin{array}{c}
\text{nP} \\
\lambda e \exists e'. \, \text{experience}(e) \\
\& \, \text{event}(e', \text{my words}) \\
\& \, \text{source}(e')(e)
\end{array}
$$

n
$\lambda e. \, \text{experience}(e)$

PP
$\lambda e \exists e'. \, \text{event}(e', \text{my words})$
$\& \, \text{source}(e')(e)$

v   n
$\lambda e. \, \text{experience}(e) \; \text{Ø}$

√MISHEYR v
'mishear'

P
$\lambda P_{\langle s,t \rangle} \lambda e \exists e'.$
$P(e') \, \& \, \text{source}(e')(e)$
á
'on'

DP
$\lambda e. \, \text{event}(e', \text{my words})$
orðum mínum
'my words'

If Poss merges and takes a specifier, it will introduce the experiencer, just as above.
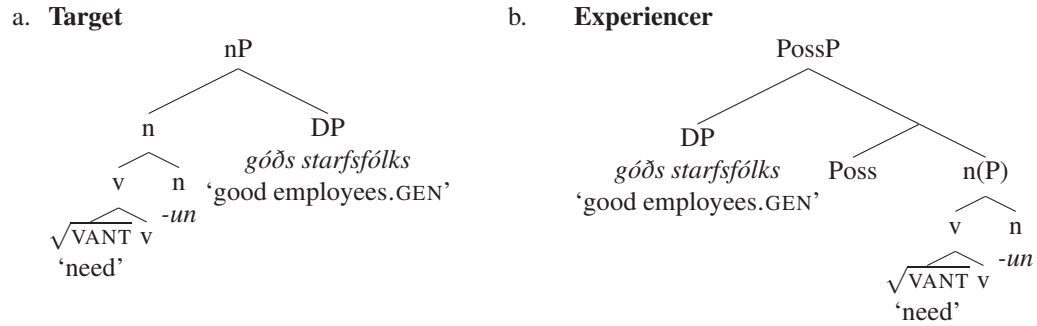
We now return to another case discussed in chapter 3, *vanta* 'need' and its nominalization *vöntun*. The example in (307) is repeated from (155) in chapter 3.

(307)   Fyrirtækið   vantaði gott   starfsfólk.
         company.the.ACC needed good employees.ACC
         'The company needed good employees.'

         a.   vönt-un   góðs starfsfólks
               need-NMLZ good employees.GEN
               'the need of good employees' (ambiguous)

         b.   vönt-un   fyrirtækisins   á góðu starfsfólki
               need-NMLZ company.the.GEN on good employees.DAT
               'the company's need of good employees'

Note here that what I will call the 'target' (the thing needed) can occur either as a genitive or as an *á*-PP. This then suggests a treatment along the lines of themes above: the noun is interpreted as the verb is, the target is computed from the juxtaposition of the the verb meaning and the meaning of the DP. Here, as above, the experiencer cannot be introduced as an *á*-PP. This suggests that when the experiencer is expressed as a genitive, that genitive cannot be a complement of n, but must be introduced in SpecPossP (which is entirely consistent with what was just said above). Thus, the ambiguity of the interpretation of (307a) is in fact a structural ambiguity, along the lines shown in (308).
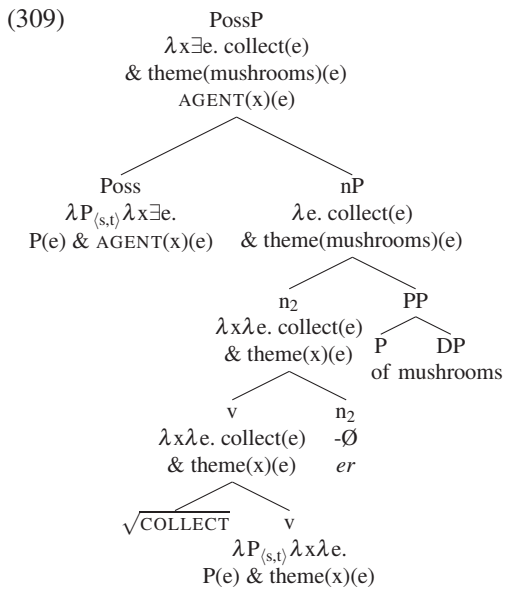
(308)

a. **Target**

```
                    nP
                   /  \
                  n    DP
                 / \   góðs starfsfólks
                v   n  'good employees.GEN'
               /|   |
              / |  -un
         √VANT  v
         'need'
```

b. **Experiencer**

```
                       PossP
                      /     \
                    DP       \
              góðs starfsfólks Poss   n(P)
            'good employees.GEN'      /  \
                                     v    n
                                    /|   -un
                               √VANT v
                               'need'
```

Here, (308a) corresponds to the target interpretation and (308b) corresponds to the experiencer interpretation.

In general, we see here the basic picture of how to understand cases where only the possessor or only the *á*-PP can express a certain relation. In such cases, we do not have the general computation of a verb and its argument with a PP headed by a semantically Ø P or a genitive DP. Rather, the same structure is co-opted with different allosemes to facilitate interpretation. If only a genitive may express a certain relation, it generally means that that relation is expressed as an alloseme of Poss. If only *á* may express a certain relation, it generally means that that relation is expressed as an alloseme of *á*.

5.3 Synthetic Compounds

Before turning to the differences between synthetic and primary compounds, I will say something about the interpretation of agent nominals, since many of the examples of synthetic compounds discussed in the literature involve agent nominals, and otherwise, I have little to say about them in this work. For present purposes, I will assume that agent nominals are built with a syntactically distinct n head, which I will refer to as n_2. Like the n we have seen elsewhere, n_2 can be semantically null or have its own meaning. However, when it is semantically null, it triggers a special interpretation of the Poss head directly above it, along the lines shown in (309).

(309)

```
                       PossP
                  λx∃e. collect(e)
               & theme(mushrooms)(e)
                     AGENT(x)(e)
                    /           \
                Poss             nP
           λP⟨s,t⟩λx∃e.     λe. collect(e)
         P(e) & AGENT(x)(e)  & theme(mushrooms)(e)
                            /            \
                          n₂             PP
                    λxλe. collect(e)    /  \
                      & theme(x)(e)    P    DP
                       /       \       of  mushrooms
                      v         n₂
               λxλe. collect(e)  -Ø
                 & theme(x)(e)   er
                 /        \
            √COLLECT        v
                      λP⟨s,t⟩λxλe.
                     P(e) & theme(x)(e)
```

As discussed below, when Poss combines with (an nP headed by) the eventive n head considered throughout most of this work, it may introduce an agent role that is saturated by a DP in its specifier. What is special
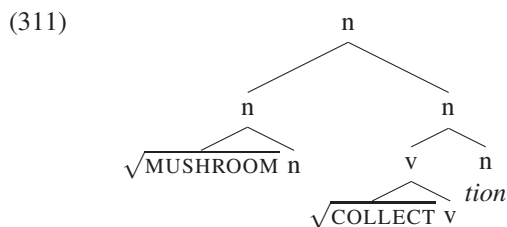
about the "agentive" n_2 head is that it allows Poss to introduce an agent role, but one that serves as the denotation of the whole noun phrase; that is, rather than point to an event that has an agent, it points to the agent. The advantage to this analysis is that up to the nP level, agent nouns and event nouns are built the same, and function the same in the building of phrases and compounds. Support for this view comes from facts discussed by Lieber (2017) (see also McIntyre 2014), namely that in addition to the well-discussed agent and instrument readings of English *-er*, *-er* nominals can refer to an animate patient (310a), inanimate patient (310b), location (310c), measure (310d), or inhabitant (310e).

(310)   a.   I didn't have to think twice about this bear. It was a shooter.
        b.   Dean was in the shower, but he agreed to meet us at the dealership to get us a loaner.
        c.   Powell left the diner with the kids before they even ate.
        d.   All right, let's say it was a bigger turky, let's say you had a 20-pounder, just kind of go with. . .
        e.   Now 53, he considers himself a naturalized New Yorker.

(Lieber, 2017, 67)

This suggests that the agentive meaning of agent nominals should not be directly associated with the n head realized as *-er*. Here, it is associated with that meaning indirectly, by allowing Poss to introduce agentive semantics in a different way.

With this in place, I turn to the structure and interpretation of synthetic compounds. According to the present view, synthetic compounds are formed by adjoining the nonhead to the head, as in the structure in (311).[14]

(311)

Structurally, this is exactly as primary compounds are formed (here, and in Harðarson 2016, 2017, 2018). Thus, any differences between synthetic compounds and primary compounds cannot be accounted for by assuming that they are built in different ways.

Instead, I suggest that the difference involves the interpretation of the head. Agreeing with Alexiadou (2017b), synthetic compounds are headed by CENs. In the present work, this means that the verb gets its ordinary interpretation and the n head is semantically Ø. When another noun is adjoined to that noun, the resulting structure must be interpreted somehow. Semantically, it is as though the noun is adjoined to the verb, even though syntactically, nouns do not productively adjoin to verbs.[15] This restricts the range of possible interpretations of the relation between the head and the nonhead. Building on the verb meaning developed earlier, and assuming that nonheads are nouns denoting properties, the interpretation of the two parts of the compound will be as indicated in (312) and (313) (for *house-painting* and *door-opening*, respectively).

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[14] Actually, what is entailed by the present proposal is only that the noun *mushroom* merges with the nominalized verb *collection*; one could in principle propose that *mushroom* projects an nP, merges as the complement of the noun *collection*, and forms a compound structure in some other way. I do not pursue this alternative here.

[15] This captures the intuition that synthetic compounds resemble incorporation structures in languages that do allow nouns to incorporate into verbs.
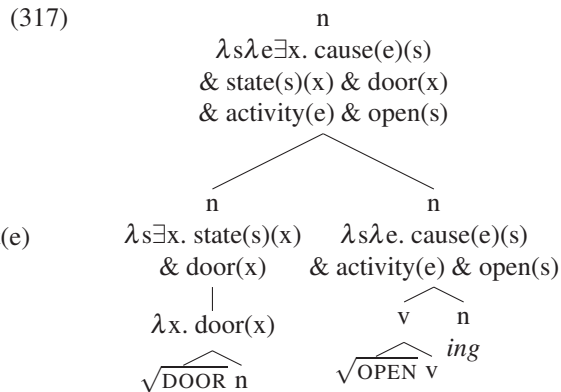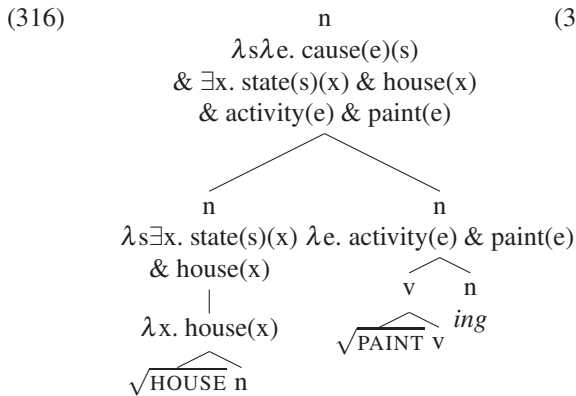
(312)   n   (313)   n
          _____|_____   _____|_____
         | | | |
         n   n   n   n
λx. house(x) λe. activity(e) & paint(e) λx. door(x) λsλe. cause(e)(s)
                                                                                      & activity(e) & open(s)
 √HOUSE n   v   n   √DOOR n   v   n
                                √PAINT v   *ing*   √OPEN v   *ing*

Notice that here, there is no simple composition rule that can put the nonhead and the head together. The nonhead denotes a property of type $\langle$e,t$\rangle$ and the head denotes a function of type $\langle$s,t$\rangle$ or $\langle$s,$\langle$s,t$\rangle\rangle$. What we want is to recreate the verbal meaning, but without the correlates of meaning the correspond to the DP-internal structure. Recall that DPs were assumed to be interpreted as states by a rule like the following:

(314) $[\![$ DP $]\!]$ → STATE($[\![$ DP $]\!]$) = (λxλs. state(s)(x))($[\![$ DP $]\!]$)

In this case, we will invoke a minimally different rule, with also introduces a state but along with existential closure over the entity variable of the nonhead. In fact, we already saw this above with the interpretation of roots like √PILE when adjoined to v. The rule is repeated here:

(315) $[\![$ X$_{\langle e,t\rangle}$ $]\!]$ → STATE($[\![$ X$_{\langle e,t\rangle}$ $]\!]$) = (λP$_{\langle e,t\rangle}$$\lambda$s$\exists$x. state(s)(x) & P(x))($[\![$ X$_{\langle e,t\rangle}$ $]\!]$)

Once this is applied to the nonhead, composition proceeds in the same way as above. The root node in (312) will combine by the cause rule and the root node in (313) will combine by State Identification.
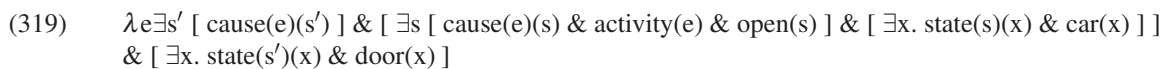
(316)   n   (317)   n
              λsλe. cause(e)(s) λsλe$\exists$x. cause(e)(s)
               & $\exists$x. state(s)(x) & house(x)   & state(s)(x) & door(x)
                  & activity(e) & paint(e)   & activity(e) & open(s)

         n   n   n   n
λs$\exists$x. state(s)(x) λe. activity(e) & paint(e) λs$\exists$x. state(s)(x) λsλe. cause(e)(s)
      & house(x)   & door(x)   & activity(e) & open(s)
         | v   n | v   n
λx. house(x)   *ing* λx. door(x)   *ing*
                           √PAINT v   √OPEN v
  √HOUSE n   √DOOR n

The same processes may apply in the case of entity roots like √PILE.

(318)

$$n$$
$$\lambda s\lambda e.\exists y.\ state(s)(y)\ \&\ book(y)$$
$$\&\ cause(e)(s)\ \&\ activity(e)\ \&\ \exists x.\ state(s)(x)\ \&\ pile(x)$$

$$n$$
$$\lambda s\exists y.\ state(s)(y)$$
$$\&\ book(y)$$
$$|$$
$$\lambda y.\ book(y)$$
$$\sqrt{BOOK}\ n$$

$$n$$
$$\lambda s\lambda e.\ cause(e)(s)$$
$$\&\ activity(e)$$
$$\&\ \exists x.\ state(s)(x)$$
$$\&\ pile(x)$$
$$v\quad n$$
$$\sqrt{PILE}\ v\quad \textit{-ing}$$

Now let us consider how the present perspective accounts for the differences between synthetic and primary compounds discussed in Harðarson (2018). First, Harðarson (2018, 1) points out that "synthetic compounds are restricted in terms of the complexity of right-branching structures, i.e. even where the head of the compound corresponds to a ditransitive verb, only a single argument is possible." Here he cites the fact that a *[book [shelf stacker]]* or a *[shelf [book stacker]]* cannot refer to someone who stacks books on a shelf. On the other hand, primary compounds like *[crocodile [nurse shoes]]* or *[horse [water bottle]]* are perfectly possible. However, most contemporary theories of argument structure, and certainly the present one, do not assume that a verb is semantically specified to take two arguments. A verb phrase like *stack books on the shelves* would be formed by combining *stack* with a small clause pP containing *books on the shelves*. Double object constructions are formed by combining a verb with a low ApplP containing both objects. In short, the verb really only takes one argument. Therefore, one wouldn't expect a right branching structure with a deverbal head at the bottom to have argument relations with both nonheads. One would need to make the nonhead a small clause; but small clauses cannot adjoin to heads, so small clauses cannot be the nonhead of a synthetic compound.

Once we recognize that verbs really only take one argument, this difference between synthetic and primary compounds disappears. *Crocodile nurse shoes* works because a relation is computed between the head *shoes* and the nonhead *nurse*, and then a relation is computed between the head *nurse shoes* and the nonhead *crocodile*. One can build a right-branching structure that contains a synthetic compound. *Field trip mushroom collection* can refer to mushroom collection that takes place on a field trip, and *suburb taxi-driving* can refer to taxi-driving that is done in a suburb. In the most embedded part of the structure, the nonhead combines with a noun with a verbal meaning, so it builds off of the theme relation. After that, *mushroom collection* or *taxi-driving* is simply an eventive noun, so any further nonheads will be fine as long as some relation is computed between the nonhead and that noun. That is, a synthetic compound can feed further primary compounding; it cannot feed further synthetic compounding because verbs only take one argument, and that argument will be saturated at the most deeply embedded level.

However, while we do not expect multiple, distinct argument non-heads in a right-branching structure, we do need still need to rule out multiple "themes", in the sense of further n's that are interpreted as states. For example, as it stands, we could generate *[door [car [opening]]* to refer to an event that simultaneously opened a car and a door—e.g. if I opened the car by opening the door. I therefore assume that existential closure applies to the state variable at the root node of any noun-noun compound. The resulting compound is only a predicate of events. The only way to derive multiple themes would be to have a new, separate state variable and a new, separate cause relation.

(319) $\lambda e\exists s'\ [\ cause(e)(s')\ ]\ \&\ [\ \exists s\ [\ cause(e)(s)\ \&\ activity(e)\ \&\ open(s)\ ]\ \&\ [\ \exists x.\ state(s)(x)\ \&\ car(x)\ ]\ ]$
         $\&\ [\ \exists x.\ state(s')(x)\ \&\ door(x)\ ]$

But then the root would not name the end-state of the higher non-head, as intended; so multiple themes of that sort cannot be derived. The question now is whether this meaning is well-formed in the first place. That

is, whether the same event variable can function as the argument of two separate cause relations with two distinct end-states. I assume for the time being that this is semantically ill-formed, in the same way that one event variable cannot have two separate agents (e.g. in passive by-phrases, where *She was run over by John by a car*).[16]

The second difference that Harðarson (2018) points to is that synthetic compounds always have a phrasal counterpart. Next to *mushroom collection* is *collection of mushrooms*, for example. Primary compounds may sometimes have a phrasal counterpart (such as *nurse shoes* and *shoes of/for nurses*), but not always. There is no phrasal counterpart to *daughter languages* or *motherland*. Some counterexamples to this claim have been discussed by Borer (2012), Alexiadou (2017b), and Iordăchioaia et al. (2017), such as *babysitter*. However, I agree with Alexiadou (2017b) and Iordăchioaia et al. (2017) that the counterexamples have a different analysis from productive synthetic compounds, such as a structure where the nonhead is a root adjoined to the root of the head. I take the general fact to be as Harðarson (2018) says it is.

But the general difference follows from the analysis here. The reason that synthetic compounds have phrasal counterparts is that their heads are open event nominals, which have all the properties necessary to take a phrasal complement. When such a head combines with a nonhead in a compound structure, the nonhead builds on the same part of the meaning that a phrasal complement would. Primary compounds are different, in that the meaning is computed as some general relation between the two parts. That relation may be part of the set of relations that complements can express, but it need not. This is particularly so in the case of modifier-like nonheads, where most phrasal complements are not equipped to express the modifier-like meaning. A *daughter language* points to a kind of language, but the relation isn't one of constitution or possession (as in *language of daughters*), benefaction (as in *language for daughters*). This kind of modification is simply not among the sorts of relations expressed by the available phrasal structures (see Ingason & Sigurðsson to appear for a recent proposal regarding the interpretation of these kinds of compounds).

The third difference that Harðarson (2018) points to is that synthetic compounds are always semantically predictable and compositional, whereas primary compounds are not always semantically predictable and compositional. This follows much in the same way as the second difference. On the one hand, they are not always compositional: *ice-breaker*, for example, has an idiomatic meaning; but it is the same that is found for the phrase, as in *break the ice*. Again, this follows from the fact that synthetic compounds are built on verbs with verbal meaning. Primary compounds need not be compositional either, but they also need not correspond to a possible phrase, as discussed above.

The present analysis thus treats synthetic compounds as CENs, and derives the differences between primary compounds and synthetic compounds on that basis. However, there are some ways in which synthetic compounds are different from canonical CENs. It has been observed that synthetic compounds differ from other CENs in that they cannot license aspectual adverbials, and lack the prior event entailment (Alexiadou & Schäfer, 2010; Alexiadou, 2017b).

(320) **Aspectual**

     a.   the enemy's destruction of the city (in two hours)

     b.   the enemy's city-destruction (*in two hours)

(321) **Prior Event Entailment**

     a.   a driver of trucks   (must have driven a truck before)

     b.   a truck-driver   (might have just been hired, never driven a truck)

Icelandic has similar contrasts, as shown in (322) and (323).

(322) **Aspectual**

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[16] Alternatively, we could propose that a single state variable cannot apply to more than one entity. That is, there can generally only be one "state(s)(x)" predicate at a time. The exception would involve roots like $\sqrt{\text{PILE}}$, but they are arguably principled exceptions, since they point to the same entity in the model as the theme (the pile and the books are the same thing, it is a pile *of* books), where the entity root describes the current status or configuration of the theme (the books form a pile).

    a. eyðilegging borgarinnar (á tveimur tímum)
       destruction city.the.GEN (in two   hours)
       'the destruction of the city in two hours'

    b. borgar-eyðilegging-in   (*á tveimur tímum)
       city.GEN-destruction-the (*in two   hours)
       'the city-destruction in two hours'

(323) **Prior Event Entailment**

    a.   eyðileggj-andi borga
         destroy-NMLZ cities.GEN
         'destroyer of cities'
         → must have destroyed a city before

    b.   borgar-eyðileggj-andi
         city.GEN-destroy-NMLZ towns.GEN
         'city destroyer'
         → could be job title; needn't have destroyed a city before

Alexiadou (2017b) analyzed these contrasts as showing that synthetic compounds lack the Asp head, above Voice, contained in other CENs. Since her explanation requires a phrasal layering analysis, it is not available here.

As for the prior event entailment, it is not clear that this is a general difference that needs to be encoded structurally. McIntyre (2014) shows that in general, synthetic compounds do entail the existence of a prior event. The cases where they do not entail such an event involve "functional" interpretations or dispositional interpretations. Functional interpretations "name entities whose intrinsic or designated purpose or function is to participate in the event named by the affixed V" (McIntyre, 2014, 123). With dispositional interpretations, the "referents have properties predisposing them for participation in particular events" (McIntyre, 2014, 123) (see also Alexiadou & Schäfer 2010; Roy & Soare 2013, 2014). Neither functional nor dispositional inter-pretations are eventive, so there is no entailment of a prior event. Lieber (2017, 161) makes a complementary point, arguing that some synthetic compounds in fact do entail an event. For example, a *child murderer* must have murdered a child.[17] On the other hand, when non-compounds have a dispositional interpretation, they do not entail an event; Lieber cites an attested example of *dispenser of sanitizing towels* which has a clear dispositional meaning and no event entailment.

Thus, the apparent difference regarding the event entailment has to do not with the structural difference between phrases and compounds per se, but with the readings available to each. I suggest that in general, the compound structure is a better fit for functional and dispositional interpretations, so that there are many more salient examples that contrast with their phrasal counterparts. As discussed in detail in chapter 4, the adjunction structure used to form compounds creates a closer locality domain for the purposes of idiosyn-cratic interpretation than the phrasal structure does. Thus, the specialized interpretation of a compound will not necessarily be available in the phrasal counterpart, and the nature of the locality domain is such that spe-cialized interpretations will arise quite easily over time.[18] Moreover, the compound structure involves less structure on the non-head than on its corresponding complement in the phrasal variant. This makes it less likely to be understood as referring to an actual entity or set of entities, making it a good fit for a dispositional or functional interpretation.

Turning to the aspectual difference, Alexiadou (2017b) connects this to the structural size of the theme argument, proposing that a larger theme argument will need to be licensed by an Asp head, whereas a smaller,

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[17] A parallel judgment holds for Icelandic *barnamorðingi* 'child murderer', according to Sigríður Sæunn Sigurðardóttir.

[18] For example, in the interpretation of *coffee-maker*, the structure is such that the roots $\sqrt{\text{COFFEE}}$ and $\sqrt{\text{MAKE}}$ will be spelled out together, and the n head will be sensitive to both of them at the same time. Thus, any idiosyncratically determined meaning pointing to a particular, conventionalized machine, is easy to compute. But in the interpretation of *maker of coffee*, the structure is such that the roots $\sqrt{\text{COFFEE}}$ and $\sqrt{\text{MAKE}}$ will be spelled out separately, so n cannot be sensitive to them both at the same time, making a conventionalized functional reading much less likely.

nP sized argument, cannot be. I propose that the Asp head part of the story is not really necessary, but that the structural size of the theme does matter. When the theme is a DP, it is classified and individuated, allowing it to measure out the event. The noun, say, 'destruction', only denotes an event; the referential DP 'the city' measures out the time of the event by the extent of the city as the subevents of destruction apply to it. In a compound, the nonhead is just an n head, denoting a property (see McKenzie 2018; see also Harley 2010). It must be interpreted as acting as the theme, but it cannot measure out an event in time.

5.4 Summary

In this chapter, I have spelled out the essentials of how a system that embraces allosemy accounts for the facts of nominalization. The basic idea is that one structure can get multiple structural interpretations, because its terminal nodes are compatible with multiple allosemes. After spelling out this basic idea, I discussed in some detail how internal arguments are inherited (or not), how external arguments are computed from the result, and how synthetic compounds are integrated into the system. I abandoned the assumption that verbs take direct arguments mediated by a theme relation, and discussed how event structure could be built dynamically in the nP the way that it has been argued to do so in the vP. This some of the complexity from the allosemes themselves and into the compositional processes that are assumed to take place. This shift included an explanation of cases where only an *á*-PP or genitive were possible, and a distinct analysis of synthetic compounds (and compounds in general).

Chapter 6
Simple Event Nominals, Referring Nominals and Allosemy

This chapter discusses the Simple Event Nominals and Referring Nominals in the context of the theory of allosemy. The basic claim here is that when the v head is Ø (an identity function) the n head combines directly with the root, semantically.

(324)

```
        n           →           n
      /   \                    /   \
     v     n            √ROOT      n
    / \    |                       |
 √ROOT v   |                     ENTITY
       |   ENTITY
       |
       Ø
```

In this case, the alloseme selected by the n head can interact directly with the meaning of the root. The result can look like systematic polysemy or even rather arbitrary idiomaticity. This proposal is supported by the fact that the same locality conditions seem to hold on the morphological side: n can get a root-determined allomorph only when v is morphologically null, so that n combines directly with the root phonologically.

This chapter discusses in some detail the issue of how to distinguish a distinct alloseme of n from 'semantic readjustment' of a root in the context of a particular alloseme. For example, an event can lead to the creation of a concrete entity or an abstract state. Does this distinction correspond to distinct allosemes of n, or does it follow from how we understand the notion of 'result' in the context of a particular root? It is argued that there are several allosemes of n in the context of deverbal nominalizations, but perhaps not as many as one might have expected. A distinction is made between allosemes that operate on an event variable, allosemes that introduce an event variable (without opening it for modification), and allosemes that simply introduce entities with some relation to the root. It is especially the latter kind that may seem to take idiosyncratic meanings.

As I did in the previous chapter, I would like to make it clear at the outset what the core claims of this chapter are, to distinguish them from the specific semantic formulas presented below. I pointed out there that this books is primarily a theory of the interface between syntax and semantics (and morphology), not a theory of lexical semantics in and of itself. In this chapter, I discuss at some length the question of what aspects of meaning should be encoded as an alloseme of n and what should be part of the resolution of a root in the context of a particular meaning. What I am proposing has to do with how such issues are approached, and what the predicted interactions between components of meaning are. Specifically:

- RN and SEN readings are generally not built off of the meaning of the verb, but involve negotiation of the root with the meaning of n.
- Unlike CENs, RNs and SENs allow some interaction between the root and n, but only if (and when) v is semantically Ø.

- Claims about the range of allosemes of n in deverbal contexts must be based on cases where v is phonolog-ically overt (or we have some other reason to be sure that v is present), to be sure that we are not dealing with root-attached n.
- Roots may condition a particular alloseme of n; idiosyncratic allosemes of the roots, however, can gen-erally be understood as 'semantic readjustment', modifying the meaning of the root to fit the meaning of n.
- Event-related prefixes can diagnose layers of meaning inside the complex head of nominalizations, in cases where phrasal modifiers cannot.
- The eventive meaning of SENs is distinct from the eventive meaning of CENs.

I do not fully resolve the issue of how many allosemes of n are needed, or whether 'concrete' vs. 'abstract' needs to be encoded in the semantics. However, I do offer a proposal for how to approach the issue: a separate alloseme is needed for a meaning only if the meaning in question is picked out as root-specific allosemy in a way that is not reducible to that root's inherent lexical semantics.

6.1 The locality of allomorphy

In thinking about the locality of allosemy, it is worth beginning by considering the locality of allomorphy. The default assumption is that the upper bound for locality should be the same at both LF and PF, given that the point of spellout will determine the size of the structure sent to the interfaces. Locality constraints can be smaller than this, but they cannot be larger than this. For example, Embick (2010) argues that for X to condition a special, suppletive allomorph on Y, X and Y must have no more than one phase head intervening between them, and they must be phonologically adjacent. If they meet the phase requirement, but have an overt morpheme between them, they do not meet the conditions for conditioned allomorphy. It is important to consider this point carefully, because it bears on what we consider to be the "same" upper bound at PF and LF. Consider the following structure, and assume that X, Y, and Z are all local as far as the phasehood requirement is concerned.

(325)   Y
           /\
          Z   Y
        /\
       X   Z

Since they are all phase-local, X could in principle condition a special allomorph or alloseme on Y, past Z. However, if Z gets an overt realization in the morphology, then X could not condition a special allomorph on Y, but it could still condition a special alloseme on Y, as long as Y does not get an an "overt realization" (i.e., any meaning other than an identity function) in the semantics. Conversely, if Z gets an "overt" realization in the semantics (some meaningful denotation), then X would not be able to condition special meaning on Y past Z, but it could still condition a special allomorph on Z in the morphology, as long as Y does not get an overt realization in the morphology. This is what it means to say that the same upper bound on locality should apply at both LF and PF, but that the locality domains in practice may be smaller.

We see at least one fairly clear case of a mismatch that may be analyzed along these lines with verbs and tense. We know that the identity of a lexical root can condition special allomorphs of T, past little v (here ignoring other heads, such as Voice and Asp), and that T can condition morphological adjustments to the root (e.g. *saw* as the past tense of *see*).

(326)   T
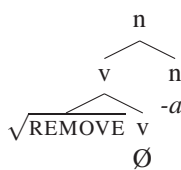   /\
          v   T
        /\
    √ROOT v

However, the root cannot, as far as we know, condition special tense semantics, nor can certain tenses condition special, idiosyncratic meanings of the root. It is not the case, for example, that a root like $\sqrt{\text{DRIVE}}$ can mean something different in the past tense than it means in the infinitive or present tense. This would be the case if *I drove* could mean 'I fell down', but *I drive* or *I want to drive* could not mean 'I fall down' or 'I want to fall down', respectively.

Thus, there is a mismatch. But it is easily explained, if we adopt the assumption that in order for T to be semantically interpreted, v must get an overt interpretation (introducing the event variable). If v gets an overt interpretation, then the root cannot interact in an idiosyncratic way with T, past v. Therefore, the root will not get special meaning from past vs. present T, and the root will not condition special tense semantics on T.

Turning to nominalizations, it would appear that different roots trigger different allomorphs of n. In English, we see *attain-ment* and not *attain-al, but *removal* and not *removement. However, we have reason to think that little v is, or at least can be present in both *attainment* and *removal*, since they can form CENs.

(327)   a.   Guðrún's attainment of her goals in just two minutes

        b.   Guðrún's removal of the vehicle in just two minutes

As we discussed earlier, Borer's Generalization is that CENs are only possible with nouns that are derived morphologically from existing verbs. Our account of this is that CENs require a v head, and more specifically the kind of eventive meaning that a v head can contribute. This means that there must be a v head in *attainment* and *removal*.

(328)   a.

        b.

This in turn suggests that the morphological realization of n can be dependent on the identity of the root, past an intervening v head, provided that the v head is itself morphologically Ø.[1] This is nevertheless consistent with the claim that v and n are both phase heads that serve as boundary points for locality. All that is needed is that the information retained at the point of Vocabulary Insertion includes the lexical identity of the root.

Regardless of how it is executed technically, it seems that we have to conclude that the realization of n can be conditioned by the root, past v. What about the other way round? Certainly, nominalizing affixes can trigger phonological readjustments on the roots they combine with. For example, when *transmit* combines with *-tion* (as in *Guðrún's transmission of the message in just two minutes*), the /t/ at the end of *transmit* is either changed to /ʃ/ or it is deleted. We have seen numerous cases in Icelandic where the vowel in a root is changed or conditioned on the basis of being nominalized, such as *myrð-* 'murder' (IPA = [mɪrð]) for the verb, and *morð-* 'murder' (IPA = [mɔrð]) for the noun. However, it is not clear that a nominalizer can trigger full root suppletion. If it did, then we probably would not have detected Borer's Generalization in the first place. Admittedly, it is hard to know whether this is simply due to the rarity of root suppletion, or whether it is a hard-wired constraint. Still, we know that at least the interaction between the affix and the root can modify the phonology of the root.

6.2 The locality of allosemy: the three basic readings

We now turn to the locality of allosemy, first focusing on the three basic readings. The presentation above provided various denotations of v and n heads. It is proposed that either v or n can be semantically zero, and

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[1] See, however, Embick (2016) for an alternative approach, where the exponents of n are not conditioned allomorphs, but are essentially in free variation, as far as the grammar is concerned.

that this is a general option for functional heads, certainly for argument introducing heads, that may not need to be stipulated. Beyond that, v has its eventive meaning, and n has at least a simple event and result meaning.[2] As far as has been shown so far, there are no restrictions on when each can be used: every combination of the different allosemes of v and n is possible, as long as the result is semantically interpretable.

However, it is actually not true that all options are always available. Just as allomorphy can be contextual, so that different suppletive allomorphs of n are available with different roots, so too is allosemy contextual. The existence of a zero alloseme of v may be a general fact, but that doesn't mean that this alloseme can occur with all roots. The existence of simple event and result allosemes of n may be a general part of the system, but that does not mean that they may occur with all roots.[3]

For example, *attainment* seems to allow primarily a CEN reading, as in (329a). It cannot be used without arguments to describe an event of attaining something (the SEN reading), as illustrated in (329b). It also cannot be used to describe a concrete entity somehow related to an attaining event, such as an entity created by such an event or a theme that undergoes such an event, as illustrated in (329c).[4]

(329)   a.   Guðrún's attainment of her goals in only two days was quite impressive.

       b.   * The attainment lasted from Tuesday to Thursday.

       c.   * Guðrún handed me the attainment.

It does appear in some contexts without arguments. For example, one can find many examples of a compound like *attainment gap*, and *attainment* can sometimes be used to refer to a state.

(330)   a.   The attainment gap associated with socio-economic status is an international problem that is highly resistant to change.[5]

       b.   It is this thought of attainment that prevents, for as long as a meditator is able to sustain it, the arising of any other thoughts.[6]

It is possible that these are subtypes of RN readings, referring to abstract states that result from an event of attaining; see discussion in the next subsection. However, there is still a sharp difference between *attainment* and *acheivement*:

(331)   a.   That was a really impressive { achievement / ?? attainment }.

       b.   She displayed her { achievements / ?? attainments } on her wall.

       c.   I stacked my { achievements / ?? attainments } next to hers and fell short.

It seems quite plausible that there are idiosyncratic restrictions on the uses of *attainment* that do not follow automatically from the eventive meaning of the verb *attain*.

We find similar cases in Icelandic. For example, *aðdáun* 'admiration' allows a complex event reading, as shown in (332a). It allows either a simple event or state reading, as shown in (332b). However, it does not seem to allow a concrete entity reading, as shown in (332c).[7]

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[2] See the next subsection for an elaboration on the range of simple event and result meanings.

[3] See Melloni (2010, 144) for discussion of this point. Melloni (2010) argues that much of the variation in terms of available readings is predictable from the meaning of the basic verb or verb root; this issue is addressed in below in section 6.3.

[4] In this section, I will assume a relatively narrow understanding of an RN reading, where it refers to a concrete entity that one can touch ([+material] in the sense of Lieber 2017). This makes the exposition clearer, but may ultimately affect the claim here, so it is discussed further below.

[5] https://www.tandfonline.com/doi/abs/10.1080/02680939.2017.1352033

[6] https://plato.stanford.edu/entries/mind-indian-buddhism/

[7] Since 'admire' is a stative verb, it can be difficult to tell if the simple event reading is a simple event or a state reading. Note, however, that as an (at best) unbounded event, it resists pluralization. Compare (i) to (333c).

(i)   ?* Að-dá-an-ir-nar   héldu áfram í   mörg ár.
      to-admire-NMLZ-PL-the held on   for many years
      INTENDED: 'The admirations continued for many years.'

(332) a. Að-dá-un   Guðrúnar   á Maríu í   öll þessi ár   truflaði fólkið   í kringum hana
           to-admire-NMLZ Guðrún.GEN on Mary for all these years bothered people.the around   her
           'Guðrún's admiration of Mary for all these years bothered the people around her.'

       b. Að-dá-un-in   stóð í   mörg ár.
           to-admire-NMLZ-the stood for many years
           'The admiration lasted for many years.'

       c. * Guðrún { rétti   mér   / snerti   } að-dá-un-ina.
             Guðrún { handed me.DAT / touched } to-admire-NMLZ-the.ACC
             INTENDED: 'Guðrún {handed me / touched} the admiration.'

Viðvörun 'warning' can have a CEN reading, as in (333a), an SEN reading, as in (333b,c), or a concrete RN reading, as in (333d,e).[8]

(333) a. { stöðug / endurtekin } við-vör-un   Guðrúnar   á hættunni   (í   tíu ár)
           { constant / repeated   } with-warn-NMLZ Guðrún.GEN on danger.the.DAT (for ten years)
           'Guðrún's {constant/repeated} warning of the danger (for ten years)'

       b. Við-vör-un-in   stóð í   mörg ár.
           with-warn-NMLZ-the stood in many years
           'The warning lasted for many years.'

       c. Við-var-an-ir-nar   héldu áfram í   mörg ár.
           with-warn-NMLZ-PL-the held   on   for many years
           'The warnings continued for many years.'

       d. Ég snerti   við-vör-un-ina.
           I   touched with-warn-NMLZ-the
           'I touched the warning.'

       e. Hún rétti   mér við-vör-un-ina;   hún var krumpuð.
           she passed me with-warn-NMLZ-the it   was crumpled
           'She passed me the warning; it was crumpled.'

Some (but not all) speakers find the CEN reading of *þrælkun* 'enslavement/slavery' highly degraded, as shown in (334a). *Þrælkun* 'enslavement/slavery' can have a state or SEN reading, as shown in (334b), but not a concrete RN reading, as shown in (334c).

(334) a. % Þræl-k-un   hans á Guðrúnu stóð í   mörg ár.
             slave-VBLZ-NMLZ his   on Guðrúnu stood for many years
             INTENDED: 'His enslavement of Guðrún lasted for many years.'

       b. Þetta er algjör þræl-k-un.
           this is total   slave-VBLZ-NMLZ
           'This is total slavery.'

       c. * Ég snerti   þræl-k-un-ina.
             I   touched slave-VBLZ-NMLZ-the
             'I touched the slavery/enslavement.'

This suggests that the denotations given above may come with contextual specifications, as illustrated schematically in (335).[9]

---

[8] Some speakers find (333b) somewhat marked. But most find it acceptable under some reading. For some, what came most readily to mind is a weather context, where the warning referred to some weather conditions. The most salient reading here seems to be a state reading: the warning refers to a state that holds for some period of time. (333c), however, has a clear SEN reading.

[9] The same would hold for zero allosemes of v, so that verbs that only allow the CEN reading would not be compatible with this alloseme. I assume that roots that can adjoin syntactically to v generally allow a contentful v alloseme; if they did not, speakers learning the language would quickly come to the conclusion that the root cannot adjoin to v in the first place.

(335)   a. $[\![\,n\,]\!] \leftrightarrow \lambda P_{\langle e,t\rangle} \lambda x \exists e.\ P(x)\ \&\ x = e\ /\ \_\_\ \{\ \sqrt{\text{ROOT}_1},\ \sqrt{\text{ROOT}_2},\ \ldots,\ \sqrt{\text{ROOT}_n}\ \}$ (SEN)

        b. $[\![\,n\,]\!] \leftrightarrow \lambda P_{\langle s,t\rangle} \lambda x \exists e.\ P(e)\ \&\ result(x)(e)\ /\ \_\_\ \{\ \sqrt{\text{ROOT}_1},\ \sqrt{\text{ROOT}_4},\ \ldots,\ \sqrt{\text{ROOT}_n}\ \}$ (RN)

However, just as it is relatively easy for speakers to learn new nouns—our root list, and the contexts roots may appear in, is ever growing—it is easy to imagine how a verbal root not generally associated with an SEN or RN reading could get one. For example, suppose I start a new job, and my boss tells me that every Monday, I have to go to the main office to gather a packet of paper slips corresponding to all the materials that the company has attained over the weekend. The boss could then tell me that the slips of paper are referred to as attainments, and my job is to take all the attainments and distribute them to the appropriate division supervisors. In this scenario, learning the new use of *attainment* (adding it to the list of some alloseme of n) is easy and immediate. The grammatical system I possess is built to handle it automatically.

Thus, although allosemy is like allomorphy in that it can be contextually restricted, the general system has a range of semantic options built on a particular structure. Lexical roots are free to be compatible or incompatible with different options, but this is the flexible part of the system, which can bend under certain semantic pressures, and can be adapted to new contexts. The general system, however remains fixed: there is a finite number of allosemes for v and n, with specific structural meanings. In most of the discussion in this work, I develop the discussion with the assumption that all options are available, unless otherwise specified. First, however, I turn to a discussion of the range of meanings found on RNs, and what they tell us about the locality of allosemy.

6.3 The locality of allosemy: RNs and idiosyncratic meaning

Earlier, we established that as long as v is phonologically Ø, the allomorph realizing n can be conditioned by the root, and in turn can trigger phonological readjustments on the root. Moreover, we have seen that the different basic readings of n can vary according to the lexical root. We now turn to the question of more idiosyncratic meanings conditioned between the root and n, past v. We will see here various cases suggesting that the specific semantic contribution of the root may be adjusted on the basis of the n it combines with semantically. For example, the RN reading of *examination* involves picking out a particular aspect of the root $\sqrt{\text{EXAM}}$, related to the object used to administer an exam (or the content it contains). I would suggest that this is a kind of semantic readjustment of the root—its basic properties and form remain and are recognizable, but its specific semantics are adjusted in the context of a particular alloseme of n.

Returning to the range of allosemes we find on n, there are certainly more than what I have already given, which is a null alloseme, an event alloseme and a result alloseme. At the very least, there is also a state alloseme, a reading that has been emphasized in recent work on German (Roßdeutscher & Kamp, 2010; Pross, 2019). However, even beyond this, it has been noted in the literature that there are many possible readings of apparently deverbal nouns beyond the complex event and even the simple event readings. Although it has been common to talk about 'result' nouns, Lieber (2017) points out such nouns can be agents, instruments, locations, results, products, and inanimate patients. Agents include examples like *government*, which refers to the body that is the agent of governing, or *administration*, which refers to the people who do the administering. Instruments include *decoration* and *adornment*, which refer to the things that are used to decorate and adorn things, respectively. Locations include *residence* and *reservation*. Results, in Lieber's terminology, refer primarily to the state attained after an event, such as *acceptance*, which can refer to the state attained after being accepted.[10] Products refer to things created from an event, such as *concoction* and *embroidery*, which can refer to entities that came into existence through a concocting or embroidering event. Inanimate patient readings refer to entities that are understood as the objects of some event denoted by the verb, including *discovery*, which can refer to a thing discovered (but whose existence does not result from a discovering event), and *assignment*, which can refer to a thing assigned (or intended to be assigned). The RN reading of *examination* also seems to be an inanimate patient RN.
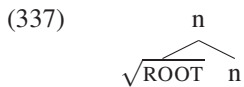
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[10] The state reading of *attainment* mentioned above seems to be an example of this.

If all of these readings are to be derived from the same structure, namely the one in (336), then there appears to be a lot of root-specific contextual allosemy governing the semantic interaction between n and the root.

(336)

```
            n
          /  \
         v    n
        / \
   √ROOT   v
```
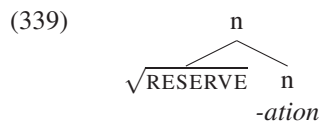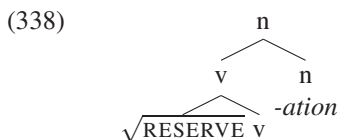
To give just one example, while a *residence* refers to a place where someone resides, a *living* does not easily (or at all) refer to a place where someone lives. It is not obvious that this comes from the meaning of the verb *live* versus *reside*, so we might have to say that this is a specific alloseme of n (location), whose distribution is sensitive to the choice of the root √LIVE versus the root √RESIDE.[11] A logically distinct issue is whether n, or an alloseme of n, can trigger a distinct alloseme of a root—something like semantic suppletion of a root— or whether the root can be given a core meaning at the v level (regardless of whether v is semantically zero or contentful), which is then "semantically readjusted" to fit the structural meaning imposed by the chosen alloseme of n.

However, before discussing the interaction of the root and n in such cases and what it means for the theory of allosemy, it is important to point out that we must be cautious about the conclusions we draw from examples like *living* versus *residence* regarding the locality conditions of root↔n allosemy interactions. In the current framework, it is entirely possible that some result nominals are actually root-derived nominals, as in the structure in (337).

(337)

```
            n
          /  \
     √ROOT    n
```

Recall that the argument against this structure was an argument against a layering approach to the general ambiguity of deverbal nouns. It was argued that (337) could not be the structure of CENs, because it would not account for argument structure inheritance, Borer's generalization about the existence of verbs underlying CENs, Lieber's generalization that noun affixes with eventive meaning always have some referential meaning, or the presence of verbalizing morphology. However, the first two arguments apply only the CENs, and the third only says that the structure in (336) must be able to generate some RN readings, not that the structure in (337) does not also exist with roots that can occur in (336). It is entirely possible, even likely, that some apparently "deverbal" nominalizations are really (337). Structures like (337) are irrelevant to the question of the locality of allosemy, since we already know that there will be idiosyncratic interaction between a root and a nominalizer when the nominalizer attaches directly to the root.

The structure of *residence*, *government*, or *reservation* could be (337). In fact, *residence* and *government* seem to resist CEN readings, so it may be that they only have the structure in (337), and not (336) at all. A nominal like *reservation* can certainly have a CEN reading, as in *Her frequent reservation of the square table drove me crazy*. But still, it could be that CEN reading has the structure in (338) while the location reading has the (339).

(338)

```
            n
          /  \
         v    n
        / \  -ation
  √RESERVE  v
```

(339)

```
            n
          /  \
  √RESERVE    n
            -ation
```

Moreover, it is possible that some referential readings have the structure in (338); for example, a reservation might refer to a piece of paper used to verify the details of a previous reservation event (as in, "Do you

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[11] Of course, *live* and *reside* are not identical, so it is possible that this difference can be derived from the meanings of the roots themselves. Determining the plausibility of this approach to all such contrasts goes beyond the scope of the present study.

have your reservation on you?"). It could be that this reading, which is less idiosyncratically connected to the verbal meaning of *reserve* than the location reading is, has the structure (338) (just as the CEN reading does), while the location reading has the structure in (339). Then, the location reading would irrelevant to the question of how the nominalizer interacts with the root past v, while the "piece of paper" reading would not be irrelevant.

Therefore, in order to evaluate the locality of allosemy, and the range of readings available to truly deverbal nominalizations, it is important to be sure that we are dealing with the structure in (336). The surest way to do so is to consider, for referential readings, only those nominalizations with an overt v head. This guarantees that there is a v present, and any readings attained cannot be attributed to a root-derived structure.[12] In English, I do not know of any agent, location, or instrument readings derived from a verb with an overt verbalizer. If I and some colleagues form a group to *galvanize* the voters, we cannot be referred to as the *galvanization*; nor can any tool we use for this purpose be called a *galvanization*, or any place we do this the *galvanization*. Similarly, *victimization* can have a CEN reading, and can refer to a result state, but cannot refer to any agent, instrument or place. It is possible that this is an accident; Shelly Lieber (p.c.) notes that agent, instrument and location readings are rare in the first place, so it may be that by limiting the search to cases with overt verbalizers, readings that are possible in principle are missing by accident.

Consider the situation with location nouns. We noted before that *residence* has a location reading and *living* does not. Suppose that the location alloseme of n is (340).

(340) $[\![\, n\,]\!] \leftrightarrow \lambda P_{\langle s,t \rangle} \lambda x \exists e.\ P(e)\ \&\ place(x)(e)$

In this case, we submit the roots for $\sqrt{\text{LIVE}}$ and $\sqrt{\text{RESIDE}}$ into the formula, and the result is as in (341).

(341)   a. $\lambda x \exists e.\ \sqrt{\text{LIVE}}(e)\ \&\ place(x)(e)$ = location
         b. $\lambda x \exists e.\ \sqrt{\text{RESIDE}}(e)\ \&\ place(x)(e)$ = location

Note that according to what we said above, (341a) should be anomalous while (341b) acceptable. There are two possible explanations for this. First, the alloseme in (340) could be might not be inserted in the context of the root $\sqrt{\text{LIVE}}$. Second, the alloseme might be fine, but the root $\sqrt{\text{LIVE}}$ might be conceptual incompatible (nonsensical) in the formula in (341a).

It is hard to imagine why the second reason would hold. All that is necessary is that *reside* and *live* are both modify/describe events—which they do—and that both are compatible with the place relation; and however we define this relation, it is hard to imagine how the roots would differ with respect to it. Both even have a meaning (or root alloseme) that makes them more or less equivalent, as in 'I live/reside on Dexter Street'. Instead, it seems that the most plausible explanation is that the root $\sqrt{\text{RESIDE}}$ conditions the insertion of the n alloseme in (340), while the root *live* is not. Therefore, if we had reason to believe that both *residence* and *living* had the truly deverbal structure in (336), we would be forced to say that allosemy of n is sensitive to the root, past v. However, as of now we have no reason to assume that *residence* and *living* both have this structure, so we are not yet led to this conclusion.
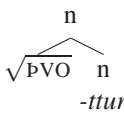
There is at least one case in Icelandic, however, that does point in this direction. The noun *hreinsun* 'cleaning', derived from the verb *hreinsa* 'clean', has a location meaning, referring to a laundromat or dry cleaners. This meaning is most typically found in the compound *fatahreinsun* 'clothes cleaning', but can also be found in isolation, as in the following attested example:

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[12] There are other ways, which are less certain. One is to focus on verbs derived from roots that have independent nominal forms. For example, the verb *safna* 'collect' in Icelandic is derived from the root $\sqrt{\text{SAFN}}$, which occurs independently in the noun *safn*, which can refer to a collection, museum, etc. This is probably derived from a root attached n. The form *söfn-un*, then, seems to be derived from the verb, since it has a CEN reading and an overt nominalizer. However, it is still not out of the realm of possibility that there are two different 'flavors' of n, and one of them is morphologically Ø while the other is *-un*. Part of the driving intuition behind the present work is to limit such flavors to cases where the form-meaning correspondence is more straightforward, so this would not be an ideal analysis. But the overall situation is not as straightforward as when there is an overt verbalizer.

(342)   Ég get ekki þvegið áklæðið   í þvottavél,   en það má fara í **hrein-s-un**
         I   can not wash upholstery.the in washing.machine, but it   may go   to clean-VBLZ-NMLZ
         (hef   ekki athugað hvað það kostar)
         (have not checked what that costs)
         'I can't wash the upholstery in a washing machine, but it can go to the cleaners (haven't checked
         what that costs.'[13]

What is relevant here is the fact that *hreinsun* contains the overt verbalizer *-sa*. The adjective *hreinn* 'clear' is
built on the same root. Thus we have the structure in (336), with *-sa* realizing v, and *-un* realizing n. But the
root *hrein* conditions the alloseme in (340), past v.

    This example is telling in another way. Despite the fact that *hrein* may condition allosemy on n past v, the
root itself does not get any special meaning conditioned by n, past v. The makes the same basic contribution
in the location noun that it does in other contexts. So we have evidence of interaction between root and n past
v, but only in one direction. This is in contrast with the readings available to a root like $\sqrt{\text{ÞVO}}$, in the nominal
þvottur. Since there is no overt v here, *þvottur* could have two possible structures.

(343)   n   (344)   n
         ┌─────┴──────┐   ┌───────┴──────┐
         v   n $\sqrt{\text{ÞVO}}$ n
      ┌──┴──┐   *-ttur*   *-ttur*
 $\sqrt{\text{ÞVO}}$ v

We have evidence that (343) exists, since the CEN reading is available.

(345)   Guðrún   þvoði   fötin.
         Guðrún.NOM washed clothes.the.ACC
         'Guðrún washed the clothes.'
         a.   þvo-ttur   Guðrúnar   á fötunum
               wash-NMLZ Guðrún.GEN on clothes.the.DAT
               'Guðrún's washing of the clothes'   (CEN)
         b.   þvo-ttur   fatanna
               wash-NMLZ clothes.the.GEN
               'the washing of the clothes'   (CEN)

However, *þvottur* can also refer to the clothes themselves—the 'laundry'—with no eventive meaning at all.

(346)   Þvo-ttur-inn   á   að fara í vélina.
         wash-the-NMLZ ought to go   in machine.the.ACC
         'The washing (=laundry, clothes to be washed) should go into the washing machine.'   (RN)

This is a more arbitrary contribution of the root than was found with *hreinsun* above. If we knew that *þvottur*,
with this meaning, involved the structure in (343), we would be led to say that the n head can condition
allosemy of the root, past v. However, there is nothing forcing this, as this reading may well be derived from
the root-attached structure in (344).
    With this much in mind, we can ask about what other referential readings must be derivable from the
structure in (336), and whether these readings involve allosemy of n conditioned by the root (past v), or
allosemy of the root conditioned by n (past v). Consider first the readings available to *móð-g-un*, derived
from the verb *móð-ga* 'insult' with the verbalizer *-ga*. This can refer to the content of a proposition/utterance
created in an event of insulting someone. The nominal *þræl-k-un* 'enslavement' is derived from *þræl-ka* with
the verbalizer *-ka*. It can refer to the state of being a slave, or the state of the existence of slavery. The nominal
bród-er-ing 'embroidery' is derived from *bród-era* 'embroider', with the verablizer *-era*. It can refer to the

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[13] https://bland.is/umraeda/yfirbreidsla-yfir-sofa/6615138/, July 18, 2019

thing created by embroidering. The nominal *ryð-g-un* 'rusting' is derived from *ryð-ga* 'rust', with overt *-ga*, and can refer to 'corrosion', essentially the resulting state of rusting, but also the material resulting from a rusting event. The nominal *pródús-er-ing* 'production' is derived from *pródús-era* 'produce', with the overt verbalizer *-era*. So at the very least, it seems that overtly deverbal nouns can refer to result readings, state readings, and product readings.[14]

Let us see what it would take to maintain the claim that the root cannot get idiosyncratic meanings conditioned by the semantics of n, past v. Does the distinction between the product reading and the result state reading necessitate distinct allosemes of a root? Certainly, not every root can express both. However, this could be a product of the meanings of the roots and their ability to modify the meanings of various allosemes of n. For example, suppose one of the available allosemes of n is the one in (347).

(347) $[\![\, n \,]\!] \leftrightarrow \lambda P_{\langle s,t\rangle} \lambda x \exists e.\ P(e)\ \&\ \text{result}(x)(e)$

What would it take for a root to occur with this alloseme of n? First, it would have to be capable of modifying an event, and second, it would have to be an event that brings a salient entity into existence. At this point, nothing more is said about such an entity; it could be abstract or concrete, for example. If we assume that in our type theory, the set of entities includes states, this could be the denotation of a result state, or a concrete entity that is created in the course of an event.

(348)   a. $\lambda x \exists e.\ \sqrt{\text{RUST}}(e)\ \&\ \text{result}(x)(e)$ = result state

        b. $\lambda x \exists e.\ \sqrt{\text{EMBROIDER}}(e)\ \&\ \text{result}(x)(e)$ = result entity

According to this view, the difference between a result state and a result entity would not need to involve the negotiation of a special meaning of roots in the context of n. Rather, it would involve the inherent compatibility of roots with one particular n denotation; to the extent that speakers can square the conceptual content of the root with the meaning of this one n, the question becomes not one of allosemy, but one of lexical/conceptual semantics. In one case, the result entity consists of concrete material, and in another case it does not. This might be understood as the kind of 'semantic readjustment' of the root alluded to above.

Now suppose that the distinction between a result state and a result entity must be encoded in the formula. Then we would have two allosemes as in (349) and (350) below. Here I borrow the predicate 'material' from the feature [±material] in Lieber (2017).

(349) $[\![\, n \,]\!] \leftrightarrow \lambda P_{\langle s,t\rangle} \lambda x \exists e.\ P(e)\ \&\ \text{result}(x)(e)\ \&\ \text{state}(x)$

(350) $[\![\, n \,]\!] \leftrightarrow \lambda P_{\langle s,t\rangle} \lambda x \exists e.\ P(e)\ \&\ \text{result}(x)(e)\ \&\ \text{material}(x)$

In principle, we would ask if each of these two allosemes can occur with all roots.

(351)   a. $\lambda x \exists e.\ \sqrt{\text{RUST}}(e)\ \&\ \text{result}(x)(e)\ \&\ \text{state}(x)$ = result state

        b. $\lambda x \exists e.\ \sqrt{\text{RUST}}(e)\ \&\ \text{result}(x)(e)\ \&\ \text{material}(x)$ = result entity

        c. $\lambda x \exists e.\ \sqrt{\text{EMBROIDER}}(e)\ \&\ \text{result}(x)(e)\ \&\ \text{state}(x)$ = result state

        d. $\lambda x \exists e.\ \sqrt{\text{EMBROIDER}}(e)\ \&\ \text{result}(x)(e)\ \&\ \text{material}(x)$ = result entity

If all four readings are possible, then all is well. But suppose that, say, 'embroidery' lacks a result state reading. This could be because the alloseme in (349) is idiosyncratically not available in the context of the root $\sqrt{\text{EMBROIDER}}$, or because the meaning in (351c) simply does not compute; it does not square with what we know about embroidering events. The first explanation would require that the root interacts directly, by conditioned allosemy, with n, past v. The second explanation does not. It would say that the formula in (351c) is grammatical, but that we do not conceive of any result states coming into existence as a result of embroidering; there is no 'state of embroidery'. According to this view, if the world changed such that the

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[14] Interestingly, I have not been able to find any clear RN readings of nouns derived from verbs that are verbalized with *-væða* other than perhaps abstract result state readings, although the nominal forms certainly exist morphologically.

act of embroidering led to some abstract state, then (351c) would make sense and become automatically available.

For the result state versus product readings, it is not clear to me that any direct allosemy is necessary, in either direction. To the extent that a root is capable of naming an event that creates a result, that result can be an abstract state or a concrete product. The distinction between simple event, simple state, and (the broadly construed set of) result readings are arguably, as discussed above, instances of allosemy of n, conditioned by the root, but not necessarily instances of root allosemy sensitive to n.

The inanimate patient nominal readings arguably involve distinct allosemes of the root and distinct allosemes of n. While result meanings are connected semantically to an event meaning of the root, the inanimate patient readings are not. As mentioned above, *þvottur* in its use meaning 'laundry' plausibly involves a distinct alloseme of the root $\sqrt{\text{ÞVO}}$. However, I have so far not come across any Icelandic examples of this reading with an overt verbalizer, with the exception of cases where the 'patient' is in fact a product, something created by the event. I propose that these two kinds of inanimate patient nominal readings are connected with two distinct allosemes of n, as shown in (352) (without contextual restrictions).

(352)   a. $[\![\, n \,]\!] \leftrightarrow \lambda P_{\langle s,t \rangle} \lambda x \exists e. \, P(e) \, \& \, result(x)(e)$ Product Reading (if concrete)

        b. $[\![\, n \,]\!] \leftrightarrow \lambda P_{\langle e,t \rangle} \lambda x. \, P(x)$ Inanimate Patient Reading

(352a) will derive an entity whose existence is the result of a some event, whereas (352b) will derive some entity, with no claims made about any relationship to an event. (352a) is connected to the meaning of the verb, since the verb will also involve an event variable, while (352b) is more idiosyncratic, having to do with the range of meanings a root makes available in the first place. If it is true that n cannot condition idiosyncratic allosemes of roots, the use of (352b) will be quite limited in the context of truly deverbal structures, perhaps not useable at all.

Notice, however, that as it is stated here, nothing is said about the relationship between the kind of entity and the argument structure of the underlying verb. Neither of the formulas in (352) say whether or not the entity corresponds to the object of the verb. This unifies some of the distinctions made by Melloni (2010). Melloni (2010) argues that an RN derived from a verb of creation will refer to the object of that verb; when you *construct a house*, you bring a house into existence, so a *construction* refers to the object (i.e., the house). One can (awkwardly) say, "I constructed that construction." An RN derived from a "creation by modification" verb also refers to the entity created in an event, but this is not the object in a verb phrase. When you *modify a house*, you do not bring a house into existence, so *modification* does not refer to the object of the verb (i.e., the house). One cannot say, "I modified that modification" (unless there were two modification events). She makes a similar point about verbs like 'translate'. When you "translate that passage" you do not create "that passage," but you do create something, and that something can be referred to as a *translation*. I contend that these differences need not make any reference in the grammar to what the object of a verb would have been. Rather, they all follow from something like (352a) (or possibly (351)): the derived noun refers to the entity that comes into existence as the result of the event. The fact that 'construct' has a different relationship with its object in a verb phrase or CEN than 'modify' does with its object is a fact about complex event semantics, not RN semantics.

Some roots may be possible with both allosemes. The noun *transmission* certainly has a result-like meaning, where (somewhat like *translation*) it can refer to the thing that comes into existence as a result of a transmitting event (e.g. a piece of paper containing a message), as would be expected with the denotation in (352a). However, it can also refer to a gearbox in a car, in which case it is most likely derived from the denotation in (352b). Nevertheless, since there is no overt verbalizer in *transmission*, it could easily be the case that the gearbox reading involves a root-attaching n, while the result reading is involves a verb-attaching n.

Turning to the simple event reading, I proposed earlier that it does have a separate alloseme, which I repeat here (without contextual restrictions):

(353) $[\![\, n \,]\!] \leftrightarrow \lambda P_{\langle e,t \rangle} \lambda x \exists e. \, P(x) \, \& \, x = e$ SEN Reading 1

This takes a predicate of entities and returns the set of entities that are equal to an event. However, another possibility, given the denotation for inanimate patient nominals, would be to do this the other way round.[15]

(354) $[\![\, n \,]\!] \leftrightarrow \lambda P_{\langle s,t \rangle} \lambda x \exists e.\ P(e)\ \&\ x = e$ SEN Reading 2

This takes a predicate of events and returns a set of entities that are equal to an event. The distinction between these two is a subtle one, and it is entirely possible that both are available to UG. However, the former predicts that the event variable should be targetable for some kinds of word internal eventive modification, while the latter does not. While I will not resolve the matter fully, I turn in the next subsection to the kind of modification that may be able to make such distinctions.

In sum, while the system here does allow the root to condition a specific alloseme of n past v, we do not see evidence that n may condition idiosyncratic allosemy of roots past v. This explains why some roots can have SEN and RN readings and others cannot, even if the range of verified RN readings in this structural environment turns out to be more limited than it might at first seem. However, among those readings, the roots that combine with them may undergo only minor adjustments, and some roots may be incompatible semantically with certain allosemes of n. In such cases, I proposed that simple conceptual shifts would make the relevant readings automatically available, with no change in the grammar or rules of allosemy.

6.4 *Marg-* 'many' and *endur-* 're-' prefixation and the identification of allosemes

At several points in this work, I have discussed how prefixes like *marg-* 'many' and *endur-* 're-' reveal various aspects of derived nominals, supporting the complex heads analysis, the encoding of change-of-state semantics within the complex head, and the existence of the SEN/CEN distinction. In this section, I show how they can help in the identification of certain properties of allosemes. I discuss two basic points. First, *endur-* 're-' supports a distinction between RNs built off of events and RNs that are simply entities. Second, *marg-* supports a particular view of the SEN reading, where n is a predicate of entities, and no event variable is available for modification.

So far, the RNs discussed have mostly been analyzed as involving a semantically Ø v. However, given denotations provided above, the result meaning can in principle be built of an interpreted verb, which is also of type $\langle s,t \rangle$, while the simple entity reading, which is of type $\langle s,t \rangle$, cannot. For example, consider *prentun* 'printing' from *prenta* 'print' versus *þvottur* 'washing' from *þvo* 'wash'. *Prentun* 'printing' can refer to an object that was created as a result of a printing event—e.g. the piece of paper with content printed on it. *Þvottur*, however, refers to material (the laundry) that is perhaps intended to be part of a washing event, but no washing event need ever take place. For a *prentun* to exist, there must have been an event of printing, whereas *þvottur* can exist without any washing event. Suppose the former has a contentful v and a contentful n, whereas the latter has a semantically null v, or, as suggested above, no v at all.

(355)   a.

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[15] I will assume, for the time being without argument, that there is also a 'simple state' reading, where the e variable refers to a stative eventuality, and that whichever of these denotations is chosen, it will apply both to dynamic events and states.

In the first case, the meaning is totally compositional and predictable from the meaning of the verb, despite being an RN. In the second case, the meaning is unpredictable (or at least less so). In the present system, this is because n interacts directly with the meaning of the verbal root in the second case. That is, a basic (concrete) entity alloseme is chosen for n, of type $\langle e,t \rangle$, which forces the root to be interpreted as a predicate of type $\langle e,t \rangle$. What exactly this refers to will fall outside the compositional system, and have to do with the senses of the root that speakers negotiate on a listed basis. (So, we predict that not all languages will allow a noun derived from a verb meaning 'wash' to refer to laundry.) However, the root does not interact directly with n in the first case. Rather, the root gets its meaning from v, and a particular alloseme of n (the result alloseme) can build on that.[16] This distinction predicts that the event meaning can in principle be targeted for modification in the case of the 'print'-like nominalizations but not 'wash'-like nominalizations.

This is what we find with *endur-* 're-'. First, recall (356), where we see that *þvo* 'wash' can be nominalized as a CEN (356a–b), an SEN (356c), or an RN (356d).

(356) Guðrún   þvoði fötin.
       Guðrún.NOM washed clothes.the.ACC
       'Guðrún washed the clothes.'

    a.   þvo-ttur   Guðrúnar   á fötunum
            wash-NMLZ Guðrún.GEN on clothes.the.DAT
            'Guðrún's washing of the clothes'   (CEN)

    b.   þvo-ttur   fatanna
            wash-NMLZ clothes.the.GEN
            'the washing of the clothes'   (CEN)

    c.   Þvo-ttur-inn   tók langan tíma.
            wash-the-NMLZ took long   time
            'The washing took a long time.'   (SEN)

    d.   Þvo-ttur-inn   á   að fara í vélina.
            wash-the-NMLZ ought to go   in machine.the.ACC
            'The washing (=laundry, clothes to be washed) should go into the washing machine.'   (RN)

The RN reading, we proposed above, is a subtype of the inanimate patient reading, which is not built on eventive meaning of the verb or the root.

The verb *þvo* 'wash' can also be prefixed with *endur-* 're-', and when it is it can still be nominalized as *endurþvottur* 'rewashing'. However, this nominal *endur-* is compatible with both a CEN reading and an SEN reading, but not with an RN reading.
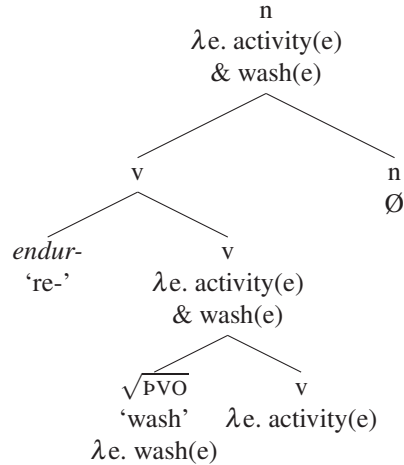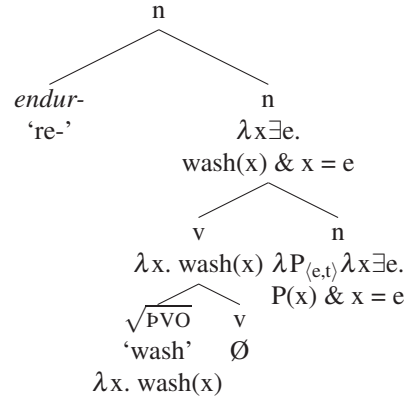
(357) Ég   endur-þvoði fötin.
       I.NOM re-washed   clothes.the.ACC
       'I rewashed the clothes.'

    a.   endur-þvo-ttur Guðrúnar   á fötunum
            re-wash-NMLZ Guðrún.GEN on clothes.the.DAT
            'Guðrún's rewashing of the clothes.'

    b.   endur-þvo-ttur fatanna
            re-wash-NMLZ clothes.the.GEN
            'the rewashing of the clothes'

    c.   Endur-þvo-ttur-inn tók   langan tíma.
            re-wash-the-NMLZ took long   time
            'The rewashing took a long time.'

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[16] Thanks to Luke Adamson for a thoughtful discussion of this issue.

    d.   * Endur-þvo-ttur-inn á   að fara í   vélina.
           wash-the-NMLZ   ought to go   in machine.the.ACC
           'The rewashing (=laundry, clothes to be rewashed) should go into the washing machine.'

I propose to understand these facts as follows. The prefix *endur-* can adjoin syntactically to either v or n, and adds the presupposition that the state resulting from the eventuality held before. The claim that it may attach to n is supported by an observation by Marantz (2009a,b) that English *re-* can attach to nouns like *birth* (as in *rebirth of the idea*), which are headed by nouns that are not derived (synchronically) from any verb.

(358)   a.   CEN   b.   SEN

CEN tree:

$$
\begin{array}{c}
n \\
\lambda e.\ \text{activity}(e)\ \&\ \text{wash}(e)
\end{array}
$$

- v

CEN (358a):

n : λe. activity(e) & wash(e)
- v : λe. activity(e) & wash(e)
  - *endur-* 're-'
  - v : λe. activity(e)
    - √ÞVO 'wash' : λe. wash(e)
    - v : λe. activity(e)
- n : Ø

SEN (358b):

n : λx∃e. wash(x) & x = e
- *endur-* 're-'
- n : λx∃e. wash(x) & x = e
  - v : λx. wash(x)
    - √ÞVO 'wash' : λx. wash(x)
    - v : Ø
  - n : λP⟨e,t⟩λx∃e. P(x) & x = e

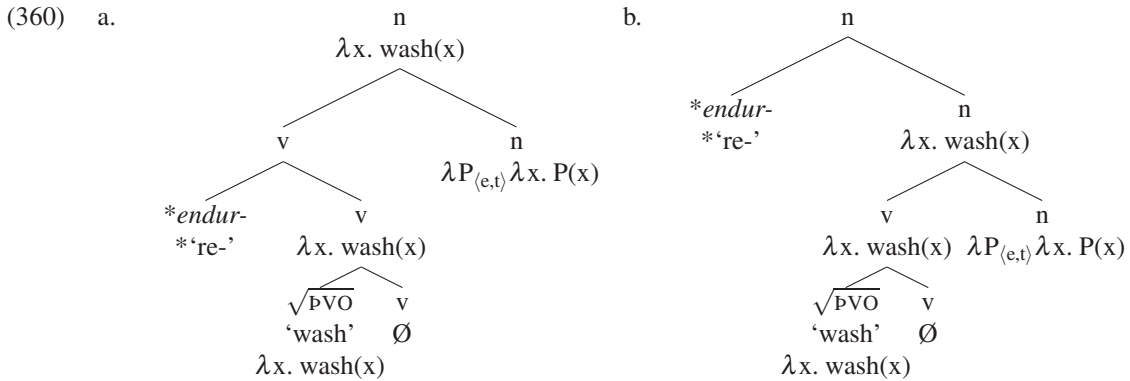(359)   ⟦ *endur-* ⟧ = the state s resulting from this event held before (presupposition)

I leave the denotation of *endur-* relatively informal, but I assume that it adds a presupposition. In both of these cases, whether *endur-* attaches to v or n, the presupposition says that the state resulting from washing held before.[17] Crucially, I assume that *endur-* could not attach to v in the SEN reading, because there is no event variable or eventive reading at that level.[18] It is at the n level that eventive meaning is obtained. We will see shortly that this characterization of the SEN reading, while not the only logical approach, is necessary for the account of *marg-* prefixation below.[19]

    The RN reading is ruled out with either structure. Under the RN reading, *endur-* cannot attach to v, either because there is no v, or because there is no event variable there. However, it also cannot attach to n, because there is no event variable there either; it simply refers to an entity computed from the root √ÞVO and the entity alloseme of n.

---

[17] This emphasis on the end state incorporates arguments from Marantz (2009a,b). The idea is that *re-* or *endur-* do not assert that the event took place again, just the end state holds again.

[18] At most, the meaning of v is a set of entities that can be described by the root √ÞVO 'wash', which may include events but also concrete entity like laundry.

[19] For example, we could adopt the SEN 2 denotation given above, and either assume the same thing—that *endur-* attaches at the n level for the SEN reading—or that it attaches at v, just like with the CEN reading. However, this would leave us without an account of the *marg-* prefixation facts below.

(360) a.

$$
\begin{array}{c}
\text{n} \\
\lambda\text{x. wash(x)}
\end{array}
$$

v ... *endur-* *'re-' λx. wash(x)

√ÞVO 'wash' Ø λx. wash(x)

n λP$_{\langle e,t\rangle}$ λx. P(x)

b.

$$
\begin{array}{c}
\text{n}
\end{array}
$$

endur- *'re-'

n λx. wash(x)

v λx. wash(x)   n λP$_{\langle e,t\rangle}$ λx. P(x)

√ÞVO 'wash' Ø λx. wash(x)

We can now understand why *endur-* or *re-* is possible for RNs that are computed from events, such as with result nouns that are built semantically off of a prior event, as discussed above. Consider the following example, repeated from chapter 3.

(361)   **Context**

Ég prentaði reglurnar fyrir hana í gær, en nú finnur hún ekki prentunina. Ég þarf að endurprenta reglurnar í dag.

'I printed the rules for her yesterday, but now she can't find the print out. I need to reprint the rules today.'

Ég vona að   hún týni ekki endur-prent-un-inni.
I   hope that she loses not re-print-NMLZ-the
'I hope she doesn't lose the reprinting.'

Here, *endurprentun* 'reprint' refers to the physical object, the piece of paper, that was produced in a reprinting event. Since this kind of RN reading may be built semantically off of a prior event, *endur-* is possible.

(362)

$$
\begin{array}{c}
\text{n} \\
\lambda\text{x}\exists\text{e. print(e) \& activity(e) \& result(x)(e)}
\end{array}
$$

v

endur- 're-' λe. print(e) & activity(e)

√PRENT 'print' λe. print(e)

v λe. activity(e)

n λP$_{\langle s,t\rangle}$ λx$\exists$e. P(e) & result(x)(e)

Likewise, it is possible in English to say *The resubmission that I wanted you to look at is on the table.* Here, *resubmission* refers to the entity that came into existence as a result of an event of resubmitting. Thus, *re-* may attach to v and pick out the result state of this event, before the event is nominalized into an RN.

Turning to *marg-*, as mentioned above, Sigurðsson (2015) proposes that it adjoins to the vP level and modifies the event, adding iterativity. His denotation (pp. 49) is as follows.
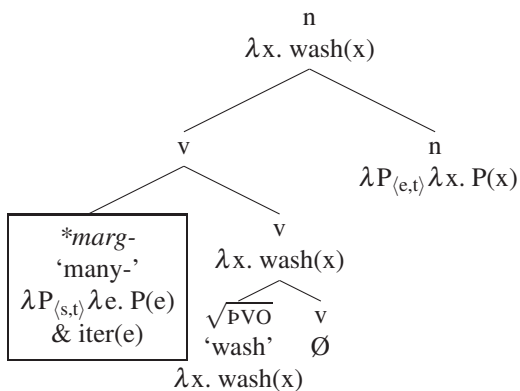
(363) $[\![$ *marg-* $]\!]$ = λP$_{\langle s,t\rangle}$ λe. P(e) & iter(e)

As discussed in chapter 2, when a verb prefixed with *marg-* 'many' is nominalized, it may only receive the CEN reading, as illustrated in (364) below.
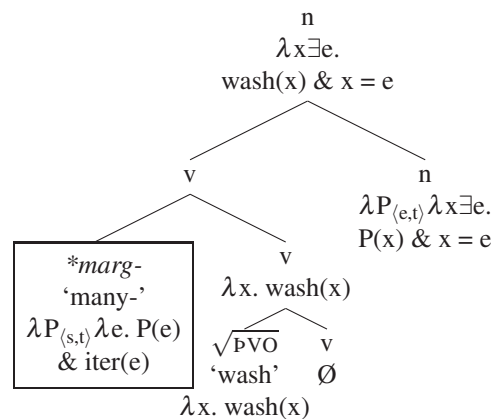
(364) Guðrún   marg-þvoði   fötin.
Guðrún.NOM many-washed clothes.the.ACC
'Guðrún repeatedly washed the clothes.'

   a.   marg-þvo-ttur   Guðrúnar   á fötunum
             many-wash-NMLZ Guðrún.GEN on clothes.the.DAT
             'Guðrún's repeated washing of the clothes.'   (CEN)

   b.   marg-þvo-ttur-inn   á fötunum
             many-wash-NMLZ-the on clothes.the.DAT
             'The repeated washing of the clothes.'   (CEN)

   c.   marg-þvo-ttur   fatanna
             many-wash-NMLZ clothes.the.GEN
             'the repeated washing of the clothes'   (CEN)

   d.   * Marg-þvo-ttur-inn   tók langan tíma.
             many-wash-the-NMLZ took long   time
             INTENDED: 'The repeated washing took a long time.'   (SEN)

   e.   * Marg-þvo-ttur-inn   á   að fara í vélina.
             many-wash-the-NMLZ ought to go   in machine.the.ACC
             'The repeated washing (=laundry, clothes to be repeatedly washed) should go into the washing
             machine.'   (RN)

In the spirit of the present proposal, I suggest that *marg-* may adjoin to the v-head directly, but by modifying the event, it scopes over whatever the event scopes over. So, for example, 'many-washing' the clothes will mean that there are multiple events of clothes-washing, not multiple washing events, one of which is a clothes-washing event. I assume that unlike *endur-*, *marg-* cannot directly attach to n. The fact that *marg-* is incompatible with the SEN and the RN reading follows from the claim that there is no event variable introduced by v for either reading. The event variable is only there, at the v level, in the CEN reading, so *marg-*prefixation is only possible with that reading.

(365) a.   RN   b.   SEN

c. CEN

$$
\begin{array}{c}
n \\
\lambda e.\ \text{activity}(e) \\
\&\ \text{wash}(e) \\
\&\ \text{iter}(e)
\end{array}
$$

```
                        n
              λe. activity(e)
                 & wash(e)
                 & iter(e)
                 /        \
                v          n
       λe. activity(e)     Ø
          & wash(e)
          & iter(e)
          /       \
       marg-        v
      'many-'    λe. activity(e)
  λP⟨s,t⟩λe. P(e)   & wash(e)
      & iter(e)     /      \
                 √ÞVO        v
                'wash'   λe. activity(e)
              λe. wash(e)
```

We now return to the question of the way that we derive the SEN reading. Recall that I am assuming that entity variables and event variables are distinct in the typing system, for combinatorial purposes, but that both kinds of variables can in principle pick out events in the model. That is, events are a subtype of entity, so entity variables can pick out events. I have adopted the proposal in Roy & Soare (2013, 2014) that SEN readings of nominals are type-theoretically entities. But as I pointed out earlier, there are at least two paths to this: we can start with the set of events, and from that refer to the set of entities that point to those events—SEN Reading 1—or we can start with the set of entities and from that refer to the subset of those entities that point to events—SEN Reading 2.

(366) $[\![\,n\,]\!] \leftrightarrow \lambda P_{\langle e,t\rangle}\lambda x\exists e.\ P(x)\ \&\ x = e$ SEN Reading 1

(367) $[\![\,n\,]\!] \leftrightarrow \lambda P_{\langle e,t\rangle}\lambda x\exists e.\ P(x)\ \&\ x = e$ SEN Reading 2

The discussion above provides support for the second approach. Under the first approach, the event variable should be accessible to modification at the v level. But if that is the case, there is no reason that *marg-* prefixation should distinguish the CEN and SEN readings. There is also no reason that *endur-* and *marg-* should differ in this respect. According to the present proposal, *endur-* and *marg-* differ in that *endur-* may attach to v or n, while *marg-* may only attach to v.

6.5 The allosemes of n

We have now seen a wider range of allosemes for n. A basic inventory of the n head allosemes discussed is as shown in (368). We saw evidence for each of these in deverbal nominalizations with the exception of the simple entity alloseme. That is, the simple entity alloseme arguably is an alloseme of n, but it is not clear that it is used when v is adjoined to n, possibly because it would force the negation of root allosemy past v.

(368)   a. $[\![\,n\,]\!] \leftrightarrow \lambda x_\tau.\ x$ Null/Expletive

        b. $[\![\,n\,]\!] \leftrightarrow \lambda P_{\langle e,t\rangle}\lambda x\exists e.\ P(x)\ \&\ x = e$ Simple Event

        c. $[\![\,n\,]\!] \leftrightarrow \lambda P_{\langle e,t\rangle}\lambda x\exists s.\ P(x)\ \&\ x = s$ Simple State

d. $[\![\,n\,]\!] \leftrightarrow \lambda P_{\langle e,t\rangle}\lambda x.\ P(x)$ Simple Entity

e. $[\![\,n\,]\!] \leftrightarrow \lambda P_{\langle s,t\rangle}\lambda x \exists e.\ P(e)\ \&\ result(x)(e)$ Result

f. $[\![\,n\,]\!] \leftrightarrow \lambda P_{\langle s,t\rangle}\lambda x \exists e.\ P(e)\ \&\ place(x)(e)$ Location

There may be slightly different ways of achieving the same results. It is possible that the Simple Event and Simple State allosemes are not distinct allosemes, but distinct uses of a single alloseme. I have suggested that there is only one Result alloseme, and that this is responsible for the result state and product readings, among others. Similarly, I have proposed that the Simple Entity alloseme above is responsible for inanimate patient readings as well as any other non-Result readings that bear no clear relation to the underlying verb's argument structure. However, another possibility discussed was that further predicates, such as "material(x)" or "state(x)" might be added to the Result or Simple Entity alloseme.

What I have tried to emphasize, however, is a move away from thinking about RN and SEN readings in terms connected with the argument structure of the verb they are derived from. Instead, the relevant questions are as follows:

- Is the event variable present, and available for modification?
- Is eventive meaning compositional and predictable from the meaning of the verb?
- Is root-conditioned allosemy of n (potentially past v) necessary?
- Is n-conditioned allosemy of the root (potentially past v) necessary?

The first two questions distinguished between Result readings and the other readings. Only with true Result readings is the meaning of the verb unchanged and the event variable available for word-internal modification. The third and fourth questions were argued to be the primary way of deciding whether a particular distinction needed to be encoded as allosemy of n or of a root. It is not always an easy question to answer. In order to determine, for example, that the product reading must be distinct from the result state reading (in contrast to what I have proposed), one must show that some root requires one or the other reading in a way that is not predictable from its semantics. But root semantics are so flexible in general that one really needs a robust set of near-minimal pairs, where the roots in each pair are very semantically similar otherwise but nevertheless pick different readings in a way that makes sense if they are choosing distinct allosemes of n. Similarly, to propose that a root is subject to allosemy conditioned by n, one would have to show that the root makes a truly distinct contribution in the context of n, that does not plausibly stem from simple conceptual readjustments of a root's basic meaning in the context of a particular alloseme of n. As far as I know, distinctions of the relevant sort have not been subjected to such a study to date. I have tentatively proposed that roots may condition particular allosemes of n, but that n may not condition suppletive allosemes of the root.

6.6 Summary

In this chapter, I have discussed the SEN and RN readings. I argued that the interaction between the root and n necessary mirrors the interaction we see in the phonology: n may interact directly with the root, but only if v is Ø semantically or phonologically. I also emphasized that the range of interactions needs to be based primarily on cases where we are sure that v is present, such as when it is phonologically overt but semantically Ø. Finally, I showed how the distinct readings of nominals can be probed using the behavior of verbal prefixes like *marg-* 'many' and *endur-* 're-'.

Chapter 7
Appendix: The timing of spellout

Section 4.1 stated the locality conditions on root allosemy in a more or less representational way. However, given that they are couched in terms of phasehood, it is reasonable to suppose that such conditions derive from the timing of spellout operations. For the most part this is fairly straightforward—at least, very few issues arise that are special to the present proposal. We might say that n and v are in different spellout domains because n triggers the spellout of v (and the root). However, the issue that does arise has to do with the structure where P is adjoined to n. In this structure, we must allow n and v to combine without n automatically triggering spellout of v, because it must be possible for P to adjoin to n and influence the interpretation of v and the root.

Embick (2010) was not assuming base-generated adjunction structures, and therefore the rules of spellout he defined do not apply to them. In what follows, I will recast his spellout principles, modifying them minimally in a way that includes such structures, and allows P to adjoin to n and influence the interpretation of v and the root. The first spellout principle is as follows:[1]

(SO1)   (First Version) When cyclic head x is merged, cyclic domains adjoined to and c-commanded by x are spelled out.

The question that arises is what counts as "merged." Clearly, if adjunction counted in the same way as complementation, this change would not have the desired effect. Instead, it is crucial that what counts is merging with a complement.

(SO1)   (Revised Version) When cyclic head x is merged with a complement, cyclic domains adjoined to and c-commanded by x are spelled out.

Thus, in a structure like (369), n does not trigger spellout until the entire complex n merges with the PP complement.

(369)

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[1] The original in Embick (2010, 51) is:

(SO1)   When cyclic head x is merged, cyclic domains in the complement of x are spelled out.

By the revised (SO1), it is at this point that v, along with any cyclic domains contained within PP are spelled out. The next question is what counts as part of a cyclic domain. That is, what is included in the material that is spelled out? Consider the second principle, as follows:[2]

(SO2)   Merge of cyclic y with a complement triggers Spell-Out of cyclic domains adjoined to and c-commanded by y, by (SO1). For a cyclic domain headed by cyclic x adjoined to or c-commanded by y, this means that x, anything c-commanded by x, and any edge+ material attached to x's domain undergoes Vocabulary Insertion.

For Embick, edge+ material is essentially x plus any non-phasal heads in the extended projection of x. I assume that the root is edge+ material, and is thus spelled out with the category-head it is attached to. In the present case, in (369), (SO2) means that the root, v, and P will undergo Vocabulary Insertion as part of one cycle, since v is a cyclic head, the root is part of its edge, and P is c-commanded by it.

One potential technical problem that arises here is that v c-commands n and everything n c-commands. This seems to mean that n and its complement would be in the domain of v, so it would be spelled out when v is spelled out. It is crucial that we do not include n and its complement in the spellout domain of v. This would fail to derive the very result achieved above, namely that the complement of n cannot influence the interpretation of the root.

I suggest that this stems from a general principle according to which a phase head cannot trigger spellout of itself. Therefore, if it triggers the spellout of a phase head x, it is excluded from the domain of x. However, we also need to prevent the complement of n from being part of the domain of v. We can start by defining the domain of a phase head as follows:

(370)   Phase Domain: The domain of a phase head x includes x, the edge of x, and all heads y, such that
        a.   x c-commands y, *and*
        b.   there is no other phase head z such that x c-commands z, and z c-commands y

This definition captures the fact that the complement of n is not part of the domain of v when v is adjoined to n. While it may seem somewhat unsatisfying, since there are two principles at work, they are both quite natural as constraints, and I therefore leave it to future research to determine whether they follow from something more basic. For present purposes, what matters is that there is a way of deriving the generalizations of the previous subsection from the timing of spellout, as long as we make certain assumptions about how complex heads built by adjunction are incorporated into the spellout algorithm.

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[2] The original in Embick (2010, 53) is:

(SO1)   Merge of cyclic y triggers Spell-Out of cyclic domains in the complement of y, by (SO1). For a cyclic domain headed by cyclic x in the complement of y, this means that the complement of x, the head x itself, and any edge+ material attached to x's domain undergoes Vocabulary Insertion.

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