Lisa deMena Travis

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Inner Aspect

The Articulation of VP

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INNER ASPECT

THE ARTICULATION OF VP

by

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Springer

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This book is dedicated to the memory of my parents, Harriet Small Travis and W. Willard Travis, who should have been here for this[1].

To my mother who taught me to look for order in art.
To my father who taught me to look for art in order.

[1] From Chomsky (1973: Ex. 169 and 166b)

(i) a. Harriet is tough for me to stop Bill from looking at.
b. It is tough for me [COMP PRO to stop [COMP Bill's looking at Harriet]]

Preface

Finishing this book was one of the most difficult things I have ever done. It took far too long from original idea to page proofs and suffered from being relegated to small corners of my life. It was very rarely on the front burner. Since I started working on this topic in 1991, there has been a lot of interesting work done on the areas of the articulation of VP, phrase structure mirroring event structure, the use of functional categories to represent Aktionsart, and many other areas that the research presented here touches on. The hardest thing about doing a project of this size is to accept that not everyone's ideas can be addressed and not all new research can be incorporated. The only way that I have found it possible to let this book go to press is to reread the Preface to *Events in the Semantics of English* by Terence Parsons where he writes, "The goal of this book is neither completeness nor complete accuracy; it is to get some interesting proposals into the public arena for others to criticize, develop, and build on." My aim in this book is to make connections between various accounts of various constructions in various languages at the risk of treating each of these too lightly.

I am grateful to too many people to thank them individually. The best part of doing research is sharing ideas with linguists who still have the marvel of discovery. I thank those for reminding me of the joy of linguistics while at the same time helping me keep track of what is truly important outside of linguistics. I thank federal (SSHRC) and provincial (FQRSC) funding agencies. Above all, I thank my students for enlightening me daily.

Contents

Chapter 1
Introduction

This is a book about phrase structure. The main claim is that there is an inflectional domain within what is traditionally known as the VP—an inflectional domain that appears sandwiched between two lexical (thematic) domains. Doing research on a basic component of phrase structure involves drawing on data from a wide variety of constructions from a wide variety of languages. The goal is to understand phrase structure, not to present a detailed analysis of any one construction or any one language. A recurring theme in the research, however, is the use of this inner inflectional domain to encode what has come to be known as Inner Aspect—the aspect that determines the endpoint of an event. For this reason, that I characterize this inner inflectional domain as Inner Aspect.

Aspect is an area that syntacticians have, until recently, tended to shy away from. This is largely because, as a topic, aspect lends itself more to the domains of semantics (to determine its meaning) and morphology (to determine its realization). At the outset, we should distinguish between two uses of the term "aspect," which Smith (1991) refers to as viewpoint aspect and situation aspect. Viewpoint aspect is morphological or grammatical aspect such as imperfective/perfective. For many syntacticians, dealing with viewpoint aspect simply involves creating another head within the inflectional domain of a clause. This head would be used to house relevant morphological material that would then feed into the semantic component (for two syntactic accounts, see Zagona 1994; Stowell 1995). Situation aspect refers to Aktionsart or aspectual verb classes such as Accomplishment, Achievement, Activity, and State (e.g., Vendler 1967). It is much less clear that this sort of aspect has a place in the syntax since it is rarely realized morphologically and its interpretation depends on a number of elements such as the choice of verb, type of object, type of prepositional complement, etc. The purpose of this book is to provide evidence that both types of aspect are syntactically encoded, though by different means. Viewpoint aspect will, for the most part, be realized as a functional category on a head within the inflectional domain of the clause. I will argue that situation aspect is also realized (sometimes through computation of local information)

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on a head but within the lexical domain of the clause, that is, within vP. Because of the difference in realization of these two types of aspect, viewpoint aspect will sometimes be referred to as grammatical aspect, functional aspect, or Outer Aspect, while situation aspect will be referred to as lexical aspect or Inner Aspect.

1.1 Aspect and Syntax

With only a cursory look at aspect-related phenomena across a variety of languages, one comes across cases where aspect (of both types) and syntax interact. Below I give just a few examples, first cases where Outer Aspect may affect or be affected by syntax and then cases from the domain of Inner Aspect.

1.1.1 Outer Aspect and Syntax

There are clear ways in which Outer Aspect and syntax interact, many of which have been noted in the literature. Taking examples from the domain of case assignment, we can see below that a difference in case may indicate a difference in viewpoint aspect (from Comrie 1976: 8).

(1) FINNISH

a. hän luki kirjan
he read book-ACC
'He read the book.'

b. hän luki kirjaa
he read book-PAR
'He was reading the book.'

In (1a), the direct object is in the accusative case; in (1b) it is in the partitive case and the result is an imperfective reading. If the determination of case depends on syntax, one could use the change of case in (1) as an indication of a change of syntax. It is imaginable, however, that the explanation lies in the realm of semantics. The meaning of partitive case would ensure that only some of the action measured out by the object would have come to pass, giving the impression of imperfective aspect. The following Hindi example (from Mahajan 1990: 76, 78), however, presents a different type of case distinction, one that would be more difficult to handle within the semantic component.

(2) HINDI[1]

a. raam roTii khaataa thaa
Ram(M) bread(F) eat.IMP.M be.PST.M
'Ram (habitually) ate bread.'

b. raam-ne roTii khaayii thii
Ram(M)-ERG bread(F) eat.PERF.F be.PST.F
'Ram had eaten bread.'

Here, when the verb is in the imperfective, as in (2a), the subject receives nominative (null) case and the verb agrees with it. When the verb is in the perfective, however, as in (2b), the subject receives ergative case and the verb agrees with the object. It is not uncommon for a language to be split between a nominative/accusative case system and an absolutive/ergative case system depending on the Outer Aspect of the predicate (Dixon 1994). Here it is less clear that a case change on the Agent is directly related to the semantics of the situation. If, on the other hand, we want to link the difference in case-marking to a difference in the syntax, functional aspect must play a role in the determination of phrase structure.

1.1.2 Inner Aspect and Syntax

The aspectual class that a predicate belongs to may also affect case marking. One example comes from case-marking of the object in Japanese, as we can see in the examples below (from Uesaka 1996: 102; Hirakawa 1994: 4).

(3) JAPANESE

a. John-ga omocha-o kowas-ta
John-NOM toy-ACC break-PST
'John broke the toy.'

b. John-ga nihongo-ga suki-na
John-NOM Japanese-NOM Like-copula.PRES
'John likes Japanese.'

The relevant fact is that only stative predicates may assign nominative (*ga*) to their objects.

Case assignment has been an integral part of the Chomskian paradigm since the late 1970s. Case was seen as a (sometimes) overt reflex of structural configuration.

[1]For examples taken from the literature, the form of the example, the glosses and the translations are given as in the original. Because a variety of sources are used, however, this may create inconsistency across examples.

Case is assigned (or checked) by a particular head in a particular relationship with a DP. If this is so, then a shift in Case can be seen as a reflex of a shift in syntactic configuration. A shift in Case that co-occurs with a shift in aspectual verb class suggests that the aspectual verb class of a predicate must be encoded by the syntactic structure in some way. The purpose of the research presented here is to determine how Outer Aspect and, particularly, Inner Aspect are encoded in the syntax.

1.2 Inner Aspect

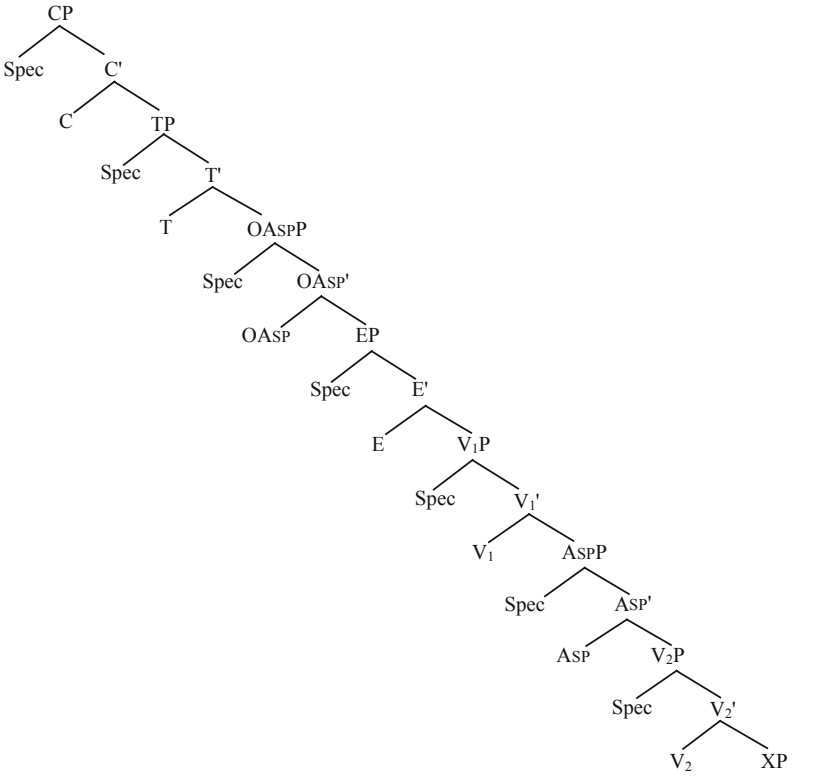
Within the context of making a clearer link between aspect (Outer and Inner) and phrase structure, I will be proposing the following representation of the extended projection of V shown in (4). The crucial characteristics of this phrase structure are:[2]

(i) The VP is layered as in Larson (1988).
(ii) Lexical heads within the VP reflect semantic structure as in Hale and Keyser (1993, 2002).
(iii) As in Hale and Keyser's work, a lexical item is a phrasal idiom that spans these heads.
(iv) There is a functional category (Aspect) within the layered VP (vP), that is, embedded in syntactic representations of the lexical entry.
(v) There is a functional category (Event) directly above the VP (vP) that marks the edge of the event.

Arguments for this structure will come from a variety of directions that will be discussed throughout the book, though I will give a brief introduction to some of the main claims in the sections below, leaving longer discussions for later chapters. The structure is given in (4).

[2]I will not discuss the articulation of CP at all and will only touch on the articulation of TP when discussing Outer Aspect.

(4)



There are two VP shells, in the sense of Larson, which I label V_1 and V_2. Between these two shells is an inflectional (functional) category, Asp. Above these two shells is another functional category E(vent). Outer Aspect (OAsp) takes scope over this entire event (EP). V_1 is a lexical category that introduces the external argument; when it does, it has a meaning similar to CAUSE. Asp, depending on its feature content, can have a meaning similar to BE/BECOME. V_2 introduces the Theme argument and the endpoint of the event, XP.

Now I will outline some of my arguments for such a structure and some of the consequences. Evidence for this articulated VP structure comes in three forms. First, I claim that object movement, already well established in the current syntactic literature, may be to a position with in the VP,[3] below the

[3]VP is a label used for many disparate constituents within the current literature. I will use it to designate the VP of the late 1980 s, the projection that contains all the merged arguments of the verb. This is probably closest to current vP (Chomsky 1995), PrP (Bowers 1993), VoiceP (Kratzer 1996), or ExtP (Pylkkänen 2002). When discussing only the lower portion of this constituent, I will specify it as V_2P. Further discussion of these various versions of VP structure is saved until Chapter 4.

merged position of the external argument. This alone does not argue for the structure proposed in (4) since the object could be adjoining to V_2P below the external argument. The second form of argument comes from evidence that aspectual morphology may appear below V_1. Putting these two observations together, I propose that the derived object has moved to the specifier position of the aspectual head rather than adjoining to V_2P. Lastly, I claim that this articulation of VP structure finds semantic support in the computation of Aktionsart, where the information of the subparts of the VP correlates with the subparts of predicate class information. Further, predicate class information will form part of the lexical entry and therefore be encoded within the VP. A brief introduction to the type of data to be examined for each of these claims is given below.

1.2.1 Derived Objects

While the existence of derived objects has become an accepted part of current Chomskian syntax, there is a debate as to the landing site of object movement. In Chapter 2, I argue that at least one landing site for this movement is below the merged position of the external argument. A variety of cross-linguistic data are given to support this hypothesis including applicatives in Bahasa Indonesia, topicalization in Kalagan, and low object shift in Swedish.

Here I will briefly show the topicalization facts from Kalagan. The topic is indicated in bold in the following sentences. I argue that what has been called topicalization is, in fact, partial A-movement to the landing site within the VP. A variety of DPs can undergo this process, triggered by the appropriate morphology on the verb. When the topic is either the Agent (as in (5a)) or the Theme (as in (5b)), there is no change in word order. What is more interesting for my concerns are the examples in (5c–e) where an element other than the Agent or Theme is the topic. In this case, the element has shifted to a position between the Agent and the Theme.

(5) KALAGAN

a. Kumamang **aku** sa tubig na lata kan Ma' adti balkon na lunis
AT-get **I** water with can for Father on porch on Monday
'I'll get the water with the can for Dad on the porch on Monday.'

b. Kamangin ku **ya** **tubig** na lata kan Ma' adti balkon na lunis
TT-get **I** **water** with can for Father on porch on Monday

c. Pagkamang ku **ya** **lata** sa tubig kan Ma' adti balkon na lunis
IT-get **I** **can** water for Father on porch on Monday

d. Kamangan ku **ya** Ma' sa tubig na lata adti balkon na lunis
BT-get **I** **Father** water with can on porch onMonday

e.	Kamangan	ku	**ya**	**balkon**	sa	tubig	na	lata	kan	Ma'	na lunis
	LT-get	**I**		**porch**		water	with	can	for	Father	on Monday

The first step in my articulation of the VP consists, then, of hypothesizing the existence of a landing site for DP movement within the VP.

1.2.2 Aspectual Morphology

Given that movement of the object DP within the VP is similar to movement of the subject DP, one might wonder if this movement is to some position similar to Spec, TP. In other words, is there some functional head within the VP which is responsible for the movement? I argue that there are morphological reasons to believe (a) that there is an inflectional category within the VP, and (b) that this nonlexical category is Aspect. In this section, I shall briefly discuss two languages that provide some support for this view, Tagalog and Navajo.[4]

First, Tagalog has a morpheme, *pag-*, that introduces the external argument in a lexical causative construction. We can see an example of this below (from Maclachlan 1989).

(6) TAGALOG

√**tumba**	fall down
t-um-**umba**	X fall down
m-*pag*-**tumba**	Y knock X down

The unaccusative form of the verb appears as the bare root while the transitive version appears as the bare root plus *pag-*.[5] I will argue that the prefix *pag-* occurs in V_1, where it introduces an external argument. Things become interesting when aspectual morphology is added to these forms. Tagalog has two aspectual morphemes. One is *n-*/*-in-* encoding the fact that the event has begun (+start) and the other is a reduplicative morpheme encoding the fact that the event is incomplete (+incomplete). The former appears above *pag-* as expected given its inflectional status. What is surprising is that the reduplicative morpheme occurs between the *pag-* prefix and the root. This is outlined below; (7) gives the paradigm and (8) gives a breakdown of the imperfective form that contains both morphemes.

---

[4]The morphological analysis of the *aha-* construction in Malagasy discussed in Chapter 6 provides further support.

[5]The *m-*/*-um-* topic marker (TM) is typical of the morphology of Western Malayo-Polynesian languages such as Tagalog, Malagasy, and the Kalagan data we saw in (5) above.

(7)

Aspect1 (outer aspect):	+/–start	+start	**-in-/n-**
Aspect2 (inner aspect):	+/–incomplete	+incomplete	reduplication

START	INCOMPLETE		
+	+	*nagtutumba*	Imperfective

(8)

nagtutumba	*n*	+	*m*	+ *pag*	+ RED	+	V
Imperfective	Asp1	+	TM	+ PAG	+ Asp2	+	V

In my view of Tagalog morphology, *pag-* is in V_1, the root is in V_2, and the reduplicative morpheme is in Inner Aspect. *Pag-*, in fact, is part of the idiosyncratic information for the Tagalog word meaning 'to knock down' (*pagtumba*), yet productive inflectional morphology can appear morphologically within this otherwise idiosyncratic construction.

Navajo, like Tagalog, allows inflectional material to appear between idiosyncratic parts of a complex predicate. Navajo morphology is much more complex and is often presented in templatic form such as the template given below (see Speas 1991: 205ff, emphasis added).

(9) Navajo Verbal Morpheme Order

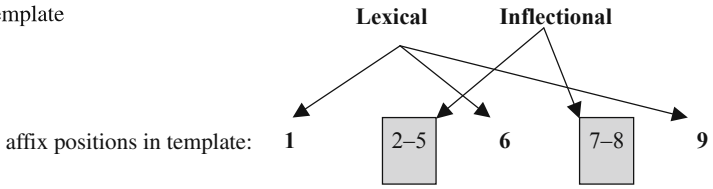
ADV	ITER	DIST-PL	D-OBJ	DEIC-SBJ	ADV	MODE	SBJ	VOICE/TRNS STEM
1	2	3	**4**	5	**6**	7	8	**9**

1 = ADVERBIAL: manner, direction ... also indirect object pronoun
2 = ITERATIVE: aspectual/adverbial prefix
3 = DISTRIBUTIVE PLURAL: plural and distributive, 'each one separately'
4 = DIRECT OBJECT: number and person of direct object
5 = DEICTIC SUBJECT: indefinite (someone) or fourth person (people in general)
6 = ADVERBIAL: adverbial/aspectual notions
7 = MODE: core of tense system
8 = SUBJECT: person and number of subject
9 = voice/trans

The lexical entry for 'to pray' is given as *so...di...zin* (see Speas 1991: 205ff),[6] with these three discontinuous bits appearing in positions 1, 6, and 9. Within the idiosyncratic parts of the lexical item, then, we find the more productive, more inflectional material such as subject and object agreement as well as aspectual and tense information. A simplification of the template is given in (10), where the functional material and the lexical material are distinguished.

[6]The concept of lexical entry will be introduced at the end of this chapter and discussed more fully in Section 6.8.1.

(10) Template

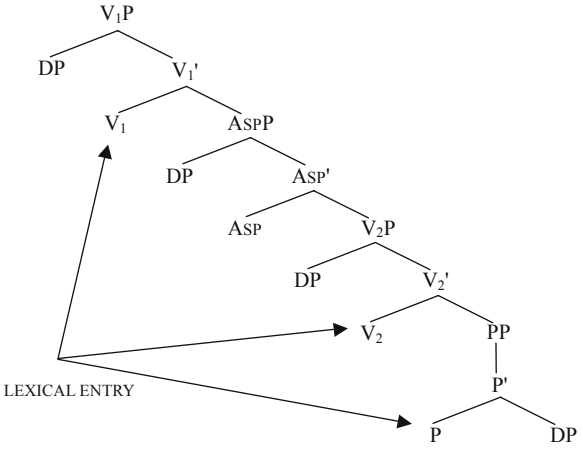


I will argue in Chapter 3 that, as with the Tagalog data, it is the Inner Aspect position that can explain the discontinuous nature of the lexical item.

1.2.3 Computation of Aktionsart

Once I have presented syntactic and morphological arguments to support the articulated VP structure of (4), I will propose that this phrase structure mirrors event structure and provides a configuration from which Aktionsart can be computed. There is basically an event "spine" within this structure that consists of the lexical heads plus the elements in a Spec, Head relationship with Inner Aspect, an event-related category. This event spine has two parts—the idiosyncratic part of V_1 and V_2 (and P) and the more productive part of Asp. The idiosyncratic part represents the lexical entry (and its arguments).[7]

(11) EVENT SPINE within VP



The productive part is where part of the computation of Aktionsart occurs, and specifically the computation of telicity. Chapter 4 presents how this computation works, but I give a brief overview here.

[7]Note that this limits the number of arguments to three. This issue is discussed in Section 6.5.

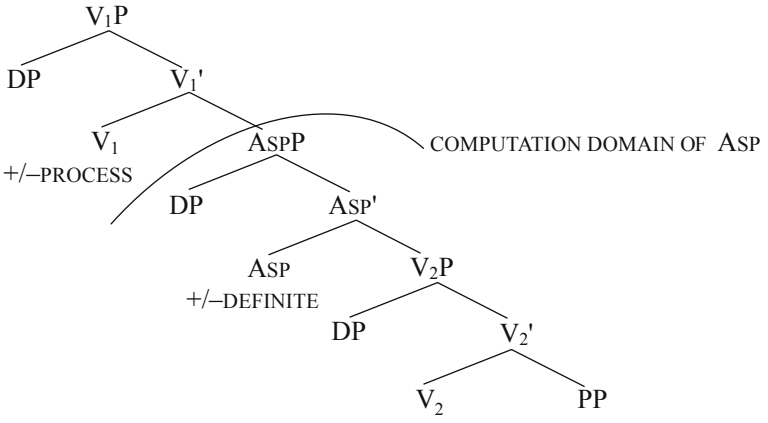
Vendler (1967) characterizes four predicate classes: States, Activities, Accomplishments, and Achievements. The table below shows how he uses features to create a typology of events.[8]

(12)

	–PROCESS	+PROCESS
– DEFINITE	State	Activity
+ DEFINITE	Achievement	Accomplishment

I propose that the four classes may be represented by the structure in (4), with two VP shells. What distinguishes them is the value of V_1 and ASP. V_1 carries the information related to PROCESS and ASP carries the information related to DEFINITE. The value of ASP is particularly complex as it itself requires a computation of the elements within its domain. This domain is within the projection of ASP and includes its specifier, the head of its complement (V_2), and the complement of the head of its complement (PP). We see this on our event spine below.

(13) EVENT SPINE



This picture captures various observations about event computation. External arguments will be outside of the computation of telicity (definiteness). Further, only Themes that are in the Spec, ASP position will be taken into consideration.[9] This is meant to account for the observation that there

[8]A more complete discussion of this use of features is given in Chapter 4. The feature PROCESS is related to durativity while the feature DEFINITE is related to telicity.

[9]I allow Themes to also remain in Spec, V_2P, in which case they will not measure the event. See Pereltsvaig (2000) for a similar conclusion. This means that the notion Theme is used as in, for

is an interaction between accusative case assignment and whether DP can measure out the duration of an event. Evidence given in Section 5.2, shows that accusative DPs that measure an event do this from a VP-internal position. Lexical aspect, then, is aspect that is syntactically positioned within the lexical domain of phrase structure (i.e., not the inflectional domain) and that computes over lexical categories such as V and P.

1.3 Other Claims

Throughout the book, while evidence for the Inner Aspect position is presented, other issues will arise. In the process of investigating the internal make-up of the VP, I shall have occasion to fine-tune other grammatical concepts. Two that I introduce here are the inventory of syntactic categories and the role of the lexicon in the syntactic computational component.

1.3.1 Lexical and Functional Categories

In the study of syntactic categories, there had generally been agreement that there are two broad types of categories: lexical and functional (e.g., Abney 1987). Lexical categories introduce arguments, while functional categories introduce features. Recently, however, there has been a blurring of the lines. In the Minimalist Program, features drive movement and appear on all heads. Further, in a neo-Davidsonian semantic framework, arguments are often introduced by functional heads such as Voice (Kratzer 1996) or Ext (Pylkkänen 1999). I remain more traditional in of the sense that I only allow lexical categories to introduce arguments, following Abney (1987).[10] This has the consequence that V_1 must be a lexical category.[11] One further reason for making this distinction between lexical and functional categories comes from the Navajo data seen above, in which the lexical entry (a combination of idiosyncratic heads) consists of three positions on the template. These three

example, Gruber (1965) but differently from Tenny (1994), where this term is used only for those DPs that measure an event.

[10]In Chapter 7, I allow Inner Aspect to introduce an argument, but we will see that this type of argument differs from arguments that are part of the lexical entry of the root.

[11]Chomsky (1995: 232) has theory-internal reasons for supposing that v (V_1 for me) is functional. In the early Minimalist Program, strong features can only appear on nonsubstantive (functional) heads. In doing away with AGR_O, Chomsky assumes that v is responsible for checking the relevant D feature of the object and therefore is not a substantive (lexical) category. As I assume that Asp checks this feature (is responsible for accusative case), I am not forced to assume that v/V_1 has uninterpretable features that need to be checked. This is discussed at greater length in Chapter 9.

positions are the lexical heads within the articulated VP, including the head V_1. V_1, although lexical, is closer to a light verb (or what I shall later call a functor verb, following Ritter and Rosen 1993). It is lexical, nevertheless, as it is responsible for introducing the external argument in the structure I propose.

I do introduce a new type of functional category, however, which is event-related. On the tree given in (4), E(vent) and Asp are two examples of event-related categories. The primary function of an event-related category is to theta-bind, in the sense of Higginbotham (1985), an event variable in the head of its complement. While this is the primary function, as with most categories, modifiers can be adjoined to this head and thereby modify the event (or subevent).

1.3.2 The Role of the Lexicon

The discussion above raises questions about the role of the lexicon in the computational component (syntax). For example, the Navajo lexical entries appear to have syntactic parts that do not compute compositionally in the semantics. How is it that the lexicon is able to allow subparts of an entry to appear in syntactic heads? These syntactic subparts of a lexical entry are evident not only in the Navajo data but, in a more startling and overtly syntactic way, in serial verb constructions and inherent complement constructions. As expressed by Hale and Keyser (1993: 96), "[i]n many languages a large percentage of verbal lexical items are *overtly* phrasal." Examples of each construction are given below.

(14) Serial Verb Construction: Fon[12]

Kɔ̀kú sɔ́ àsɔ̃́ ɖó távò-jí (Larson 1991: 190, 7b)

Koku take crab put table-on

'Koku put the crab on the table.'

(15) Inherent Complement Construction: Fon

Àrìnɔ̀lá dó àwù (Avolonto 1995: 78, 9d)

Arinhola *DO* shirt

'Arinhola got dressed.'

[12]The orthography in the various examples is reproduced from the original articles.

The lexicon has to have access to some part of the syntactic component. Using the ideas of Hale and Keyser (1993), I propose a domain of L(exical)-syntax distinct from the domain of s(yntactic)-syntax; in other words, there is a domain of syntax (within the VP) that has certain idiosyncratic characteristics of the lexicon, as well as having more productive characteristics of the syntactic computational system. I differ from Hale and Keyser in that I assume that the external argument is in the domain of L-syntax, but I otherwise agree that processes that occur above the VP must be part of s-syntax. More specifically, I posit E as the boundary between L-syntax and s-syntax. What this means procedurally is that at E, the computational system can return to the lexicon to match the merged lexical heads against the lexical items in the lexicon. The semantics of the lexical item will be attached at this point. Further, a different type of phonological process may apply here.[13] Once beyond E, the computational system works productively without recourse to the idiosyncrasies of the lexicon.[14] This accounts not only for differences in lexical (L-syntax) causatives and productive (s-syntax) causatives but also for a type of anaphor binding in Tagalog discussed in Chapter 4.

E also represents the edge of an event. One difference that has been pointed out in the characterization of lexical causatives and productive causatives is the fact that lexical causatives encode one event while productive causatives may encode multiple events. This distinction was made famous in Fodor's (1970) article detailing how *kill,* an L-syntax causative (encoding one event), is different from *cause to die,* an s-syntax causative (encoding two events). How events are represented morphologically is distinct from what they represent semantically. English is fairly transparent in how it maps words to events: two events are generally represented by (at least) two words (e.g., *cause to die*), one event by one word (*kill*). It is this one-to-one mapping that allows Carter (1976) to ask about the semantic limits on a WORD in English, since semantic to morphological encoding is straightforward. In fact, what he is discussing is also a restriction on the argument structure of a single event. Since languages vary dramatically, however, I distinguish between E-words (lexical items that are constructed below E), and M-words (lexical items that are one morphological whole). Different variations of how M-words are mapped to E-words are shown in the table below.

---

[13]See some of the recent work being done on the edges of syntactic domains showing up in the phonological component (e.g., Newell 2008). The "return to the lexicon" for purposes of determining the lexical entry is something that has to happen outside of the morphological component since it is also necessary for separate heads that remain in their merged positions (the overtly phrasal lexical items mentioned by Hale and Keyser). See Chapter 9 for more on this matter.

[14]Obviously the morphological component that appears at Spell-Out will have to have access to idiosyncratic morphological forms. For example, +past when attached to *sing* will result in *sang* not *singed*. However, the semantics will still be compositional. It is not this sort of idiosyncrasy, then, that is crucial in determining the domain of L-syntax (and lexical entries); that role is played by an idiosyncrasy in the morphological component.

(16) M-words vs. E-words[15]

	1 M-word	2 M-words
1 E-word	English: *wash*	Edo: *naki kiri* 'kill' Fongbe: *kú dɔ̀* 'dream'
2 E-words	Malagasy: *m-an-f-an-sasa* 'make wash' Tagalog: *m-pag-pa-0-bukas* 'make open'	English: *make wash* French: *faire laver* 'make wash'

1.4 Some Consequences

Now that some of the main claims have been set out, I turn to some of the consequences of these claims. These consequences are presented in the last two chapters of the book, Chapters 7 and 8. By allowing the structure in (4) to represent event structure and by accepting that the lexicon can interact with the structure below E, certain otherwise puzzling processes can be accounted for.

1.4.1 The Structure of Achievements

In Chapter 7, I investigate the structure for Achievements, one of Vendler's predicate classes. I use the morphology of Malagasy and Tagalog to probe this structure, particularly the make-up of V_1 and Asp, the two categories most closely tied to the nature of the predicate classes. I draw several conclusions. One is that the V_1 in transitive Achievements in these languages is stative and Asp simply encodes the endpoint of a change of state. This raises the question of how the external argument of a transitive Achievement is merged into the structure. A case of morpheme deletion in Tagalog is brought to bear on this issue. As mentioned above, I analyze the Tagalog prefix *pag-* as being in V_1 in Tagalog lexical causatives. Further, I argue that *pag-* is deleted in cases where the argument that it introduces remains in situ. When this account of morpheme deletion is applied to the case of Tagalog Achievements, the conclusion we are led to is that the external argument of a transitive Achievement such as *find* is in Spec, Asp and not Spec, V_1P.

While this result may appear controversial, I argue that it explains the nonagentive nature of these external arguments, a particular morphological paradigm in Tagalog verb forms, and the realization of tense in Malagasy. A

[15] I have not given morpheme glosses here as this would take us into areas that warrant further discussion. Each of these examples is discussed in detail later in the text. At this point, it is sufficient to note that some expressions are encoded in one morphological word while others are encoded in two morphological words.

larger outcome is that Achievements are given a firmer footing as a linguistically relevant and structurally identifiable aspectual predicate class.

1.5 Coercion

The final task of this book is to look at cases of coercion within the context of the structure that is presented and the interpretation that this structure is given. There are certain tests that are used to determine membership in Vendler's predicate classes. One of the problems with these tests is that English predicates are particularly flexible. By imagining appropriate contexts, one can make awkward sentences much better. Two examples are given below.

(17) a. We are solving the problem.
b. Mary ran in three minutes.

Example (17a) should be ungrammatical because an Achievement predicate (—process) appears in the English progressive; (17b) should be ungrammatical because an Activity verb (—definite/telic) appears with a time-frame PP. However, we can imagine (17a) as describing the process leading up to solving the problem, and (17b) as either describing the amount of time leading up to the point when the running started or describing a well-defined task (running one lap, doing the morning run). In these cases, we are coercing the predicates to stop being one type of predicate and become another. An Achievement can be coerced to behave like an Accomplishment, as in (17a), and an Activity can be coerced to behave like an Accomplishment, as in (17b).

The question is whether coercion is grammatically encoded and, if so, how. De Swart (1998) has suggested that coercion occurs through covert aspectual operators. I follow de Swart's analysis and propose further that these operators have syntactic content, appearing as zero morphology in the event spine. More specifically, the progressive is able to appear in (17a) because a zero morpheme appearing in V_1 has made an Accomplishment out of an Achievement.

This has particular import for my proposals, since I eventually claim that case variation may only be driven by changes in situation aspect, that is, Inner Aspect. The Finnish and Hindi examples given at the beginning of this chapter appear to be counterexamples. I argue, however, that the apparent connection between Outer Aspect and case change in these examples is mediated by a coercion effect. Outer Aspect forces the appearance of particular zero morphemes in the situation aspect domain, thereby affecting case assignment. My evidence for this is the fact that Outer Aspect changes can effect a shift in meaning—a shift that in other languages must be encoded with a different choice of lexical items. An example from Hindi is given below. In the progressive (imperfective) form in (18a), the meaning of the verb is like *look for* in English, an Activity predicate. In the perfective form in (18b), the meaning is like *see* in English, in this case an Achievement.

(18) a. siitaa laRkaa dehk rahii hE (Mahajan 1990: 103)
Sita boy(M) see-PROG-be-F
'Sita is looking for a (suitable) boy (to marry).'

b. siitaa-ne laRkaa dekhaa
Sita-ERG boy(M) saw-M
'Sita saw the boy.'

The meaning shift forced by the Outer Aspect in this case is reflected in a shift of situation aspect, which, in English, is reflected by a change in lexical item. I claim that all of this indicates a shift in the L-syntax, represented within the VP, below E. Now we can keep the hypothesis that case changes always reflect a shift in situation aspect and changes within the VP domain.

1.6 A Note on Methodology

Before turning to the body of the research, I present some of my thoughts on methodology. Clearly, I have faith in cross-linguistic research. Many of the issues that are raised here show up better in some languages than in others. I use the helpful languages to gain information about the less helpful languages. However, working on languages that are not one's own leads to problems. Working on multiple languages and making cross-linguistic claims leads to other problems. My belief, though, is that all of these problems are outweighed by what is gained. Baker and McCloskey (2005) discuss this type of research, which they call *The Middle Way,* placing it between typological work that may span hundreds of languages and the most common examples of theoretical work that concentrate on one language or one language family.

> We suggest that there is a "Middle Way"...—research that would look at fewer languages than a typical typological study, but at more languages than a typical generative study. This Middle Way would dig into the internal workings of each language to an intermediate degree, so as to cull out superficial counterexamples and identify additional factors that could be relevant, while still leaving time to look at more than one or two languages. More concretely, we might expect followers of the Middle Way to base their research on 5–10 languages that are genetically and areally unrelated. That would greatly reduce (although not eliminate) the danger of spurious generalizations that besets formal work, while at the same time reducing (although not eliminating) the danger of errors introduced by superficiality of analysis that besets typological work (Baker and McCloskey 2007: 294).

In this work, I not only use a wide variety of languages[16] (e.g., Bulgarian, Chinese, Dutch, Finnish, French, Fongbe, German, Kalagan, Limos Kalinga, Malagasy, Nahuatl, Polish, Russian, Scots Gaelic, Surinam Creole, Slave,

[16]A complete list is given in the Language Index.

Swedish, Tagalog, Turkish) from many language families (e.g., Athabaskan, Austronesian, Celtic, Finno-Ugric, Germanic, Kwa, Romance, Slavic, Sino-Tibetan, Turkic, Uto-Aztecan), but I also look at a variety of constructions within these languages (e.g., applicatives, bare N constructions, double objects, empty anaphors, grammatical aspect, inherent object constructions, lexical aspect, lexical and productive causatives, nominative 3 languages, object shift, partial WH-movement, possessor raising, serial verb constructions, resultatives). By the very nature of the research, it cannot be an in-depth study of any one of these languages or of any one of these constructions.

That being said, I return to some of the specific problems. For example, I use morpheme deletion in Tagalog to support a morpheme analysis for Malagasy. This line of argumentation carries with it the assumption that the morphology is being used in a similar fashion. Clearly, this is not always the case. For example, the morpheme *meN-* in Bahasa Indonesia, while similar to Malagasy *maN-*, is different in important ways. I trust the reader to keep in mind both the danger and the possible gains of this approach.

Further, many of the languages that I use are understudied though there have been recent improvements. This should not take away from the importance of the generalizations with which they have enriched the literature. Of course, one needs to be wary of false generalizations, but this is always the case, whether the language being studied is Malagasy or English. Restricting language generalizations to data from well-studied languages is obviously not the direction to take.

Also, as with any body of research, the assumptions I make might be controversial. What I call a subject in Malagasy and Tagalog is viewed as a topic by many researchers, including Pearson (2001). What I assume is a lexical causative morpheme in Tagalog is analyzed as an anti-EPP marker by Rackowski (2002). I try to point the reader to competing claims when possible.

One final point that needs to be made is that this is primarily syntactic research. I look at all the issues through a syntactician's eyes. However, these issues require assumptions to be made about morphology and semantics. I remain hopeful that the assumptions I do make can be developed using the appropriate expertise.

Chapter 2
Inner Derived Objects

2.1 Introduction[1]

In this chapter, I start to argue for an articulated VP structure[2] by investigating the position of derived objects. While syntacticians generally agree that there is a derived object position, there is less agreement on the details of the landing site. My aim is to show that there is a position within the VP, below the merged position of the external argument, to which movement of a maximal projection is possible. Generally this is a position to which objects move, but we will see that in special circumstances elements other than canonical objects can appear in this position. The common denominator between objects and these other elements will be that both appear in this position through A-movement.[3]

2.2 Background

The status of derived objects has a very rocky history. As syntactic theory developed through the Principles and Parameters theory towards the Minimalist Program, these structures proved to be difficult to account for. Often characterized by Raising to Object constructions such as the one given in (1) below,

[1] The claims that (i) there is a projection, Aspect, within the VP and (ii) this is the position to which derived objects move were both made in a paper I presented at NELS XXIII at the University of Delaware in 1991. This chapter is basically an expansion of the first part of that paper. The idea that there is a derived (case-related) object position within the VP sprang up in several places around the same time, for example, Koizumi (1993) and Sportiche (1990). These two works are presented briefly later in the chapter.

[2] As will become obvious, this articulated VP structure has much in common with Chomsky's "little" vP structure (Chomsky 1995: Chapter 4), Hale and Keyser's I-syntax structure (Hale and Keyser 1993, 2002), and the work of others such as Arad (1998), Harley (1995), Pylkkänen (2002), and Rackowski (2002). Because the translation from one system to another is not trivial, I use my own labels of V_1 and V_2 instead of v and V.

[3] In Chapter 7, I will discuss some very particular cases where a theta-role may be assigned to the Spec of this category.

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movement to object position was for many years ruled out by the Projection Principle and the Theta-Criterion.

(1) a. Mary believes the children to be lying.
b. Mary believes [the children]$_i$ [$_{IP}$ t$_i$ to be lying]

Within the Principles and Parameters Theory, the problem with the derivation sketched in (1b) was that movement appears to have occurred to a complement position. A position that is a complement to the verb, however, can be created at D-structure only through theta-assignment. If this is a theta-position, however, it is not a possible landing site for movement since the chain would contain two theta-positions, violating the Theta-Criterion.[4] Further, the position cannot be created between D-structure and S-structure, since this would involve changing the complement relations of the head, a violation of the Projection Principle, which ensured that every syntactic level encodes the same lexical relations. The Theta-Criterion and the Projection Principle together, then, forced an analysis of these constructions that did not involve movement of the embedded subject to the matrix object position, but rather the exceptional case assignment of accusative case by the matrix verb to the embedded subject (see, for example, Chomsky 1981: 68ff).

The principled unavailability of a movement analysis for such constructions, however, runs into empirical problems. One such problem comes from languages where the positioning of the embedded subject in structures such as (1) is not ambiguous between the embedded subject position and the matrix object position, as it is in the English example. Such a language is Malagasy, a Western Austronesian language spoken in Madagascar. Malagasy is a VOS language, which allows us to see the difference in position between the embedded subject and the matrix object, as the example below shows.

(2) Malagasy
a. Nanantena Rakoto [*fa* *nianatra* *tsara* ***ny*** ***ankizy***]
pst.at.hope Rakoto comp pst.at.study good the children[5]
'Rakoto hoped that the children studied well.'

b. Nanantena an' **ny** **ankizy**$_i$ [*ho* *nianatra* *tsara* t$_i$] Rakoto
pst.at.hope acc'the children comp pst.at.study good Rakoto
'Rakoto hoped that the children studied well.'

In (2a) we see a non-raising construction where the embedded clause (italicized in the example) appears in an extraposed position to the right of the matrix

[4] Some work (e.g., Pesetsky 1995; Hornstein 1999) posits movement that violates the Theta-Criterion but the claim that movement into a theta-position is ruled out is still widely assumed.

[5] Number is not marked within many Malagasy DPs. Glosses and translations will vary in terms of whether the singular or plural is given.

subject (giving a V-S-CP order in the matrix clause). In (2b), the raised structure, the embedded clause remains in the normal object position between the verb and the subject. The subject of the embedded clause (given in bold), however, appears at the beginning of the embedded clause giving an apparent SVO order.

Malagasy, then, appears to be a language where movement from the embedded subject position to the matrix object position clearly takes place.[6] In fact, within the past 15 years, derived objects have made their way back into the theory, for empirical as well as conceptual reasons. Below I present four earlier proposals for derived objects. These four proposals have been chosen to represent different possible landing sites for derived objects. I conclude the section with Chomsky's (1993) and (1995) influential view of derived objects.

2.3 Early Proposals

One of the main empirical reasons that object movement has come to be an accepted part of recent work in generative syntax is the work done on object shift in Scandinavian languages. Holmberg (1986) introduces data from Swedish and Icelandic which show that in these two languages objects may appear, under specific conditions, either to the left or to the right of negation and a subject-oriented floated quantifier. Typical examples are given in (3) and (4) below.

(3) Swedish (Holmberg 1986: 165)[7]

a. Varför läste studenterna *inte* *alla* v **den?**
Why read the students not all it
'Why didn'tall the students read it?'

b. Varför läste studenterna **den**$_i$ *inte* *alla* v e_i?

(4) Icelandic (Holmberg 1986: 166)[8]

a. Hvers vegan lasu stúdentarnir *ekki* *allir* **greinina?**
Why read the students not all the article
'Why didn't all the students read the article?'

b. Hvers vegan lasu stúdentarnir **greinina** *ekki* *allir?*

---

[6] In fact, there are arguments that objects raise in English based on more subtle data from word order as well as binding facts. See Lasnik (2001), for example. On the other side, there are accounts in which the Malagasy word order shown is accounted for without raising to object (e.g., Pearson 1997).

[7] The v in these examples is meant to indicate where the finite verb originates.

[8] This example is glossed as in the original. *Hvers vegna* means 'why'. The translation was provided by A. Holmberg (p.c.).

In Swedish, the shifted object must be a pronominal while in Icelandic it may be a full DP. We return to examples of Scandinavian object shift in Section 2.4, looking at the restrictions placed on it and comparing it to similar phenomena in other languages. Before doing this, though, I shall present four early proposals for object shift.

2.3.1 Mahajan (1990)

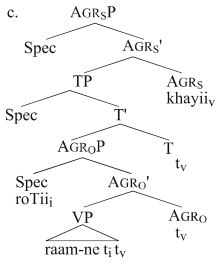
Mahajan (1990) argues that, in certain constructions, Hindi allows objects to appear in a derived A-position. He assumes that this position is Spec, AGR_O in a tree such as the one proposed by Chomsky (1991) (developing the ideas of Pollock 1989 and Belletti 1990). In most instances, A-movement of the object is triggered by Case, similar to A-movement of subjects. Mahajan argues that perfect participles in Hindi do not assign Case to their objects and therefore the objects in perfective constructions must move to Spec, AGR_O to receive structural Case in this position. To begin, we look at an example of the imperfective, which does assign Case to the object, in (5) below. Here the verbal forms show gender agreement with the masculine subject *raam* 'Ram'.

(5) raam roTii khaataa thaa (Mahajan 1990: 76)
Ram(M) bread(F) eat.IMP.M be.PST.M
'Ram (habitually) ate bread.'

The perfective is given in (6a) and now we see that the verb agrees with the feminine object *roTii* 'bread'. The relevant post-movement tree is given in (6b) (adapted from Mahajan 1990: 79).

(6) a. roTii raam ne khayii (Mahajan 1990: 79)
bread(F) Ram(M) ERG eat.PERF.F
'Ram ate bread.'

c.



Since, by hypothesis, the perfect participle *khayii* does not assign Case, the object *roTii* must move to Spec, AGR_O to receive Case in this position. Agreement is an overt reflex of this movement. What is important to note in this

structure is that the derived object position is outside of (excluded by) the VP. Further, it is clearly above the merged external argument position. In this way, Mahajan's account differs from the next three to be discussed.

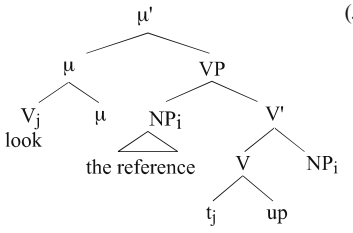
2.3.2 Johnson (1991)

Johnson (1991) also assumes that there is an A-position which is a landing site for derived objects, but he believes this position to be Spec, VP. He argues that it is this landing site that accounts for the alternation in English in directional particle constructions such as the one given below.

(7) a. He looked *up* **the reference**.
b. He looked **the reference** *up*.

The direct object, *the reference*, may appear before or after the particle, a fact that Johnson takes to be an indication of a change in position of the direct object. In (7a) the direct object is in its base-generated position as complement of the V, and in (7b), it has moved to Spec, VP. Since in (7b) the object is at the edge of the VP, the V *looked* must itself have moved out of the VP. As shown in (8), Johnson assumes, following Jaeggli and Hymans (1989) and Pesetsky (1989), that there is a position for such verb movement, called μ.[9]

(8) (Johnson 1991: 608)

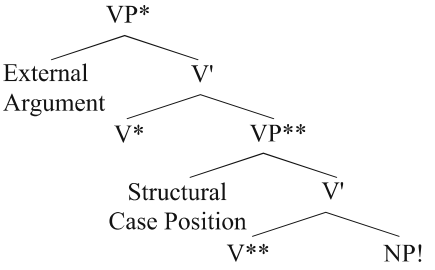


Johnson makes no explicit mention concerning the merged subject position with respect to the landing site of the object. One could assume, however, that the subject originates higher up since, in the trees in his paper, it is placed directly in the Spec, TP.

[9] This is a simplified version of Johnson's full account but sufficient for our needs. It is important to note here that overt movement of the object in English necessitates overt movement of the verb as well in order to arrive at the appropriate word order.

2.3.3 *Sportiche (1990/1998)*

For a third account, we turn to Sportiche (1990/1998).[10] Sportiche agrees with Johnson and Mahajan that derived objects exist. He states explicitly, however, that the landing site of these objects is below the merged position of the external argument. The structure he proposes is given in (9) below.

(9) 

(Sportiche 1998: 187)

In this case, a Larson (1988) type of layered VP is used. The object is generated as the complement of the lower V and moves to the Spec of the lower VP to be assigned Case. In a brief comment, Sportiche says that if there is an AGR_O that is the landing site for object movement, it is within the VP as sketched in the bracketed structure in (10) below where NP* = base-generated external argument (Sportiche 1998: 214).

(10) [Spec, IP] . . . [NP* . . . [AGR_O VP . . .

2.3.4 *Koizumi (1993, 1995)*

Koizumi (1995) (in a development of Koizumi 1993) presents the Split VP hypothesis, where, as in Sportiche (1998), the landing site of the derived object is explicitly below the merged position of the external argument.[11] The structure he proposes for a sentence such as *John opened the door* is given in (11) below (where V^u and V^l refer to upper and lower V, respectively).

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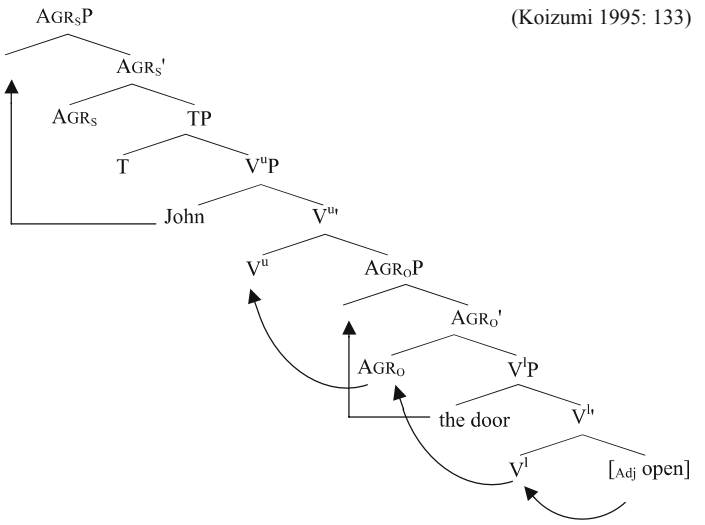
[10] Sportiche (1998) is the published version of Sportiche (1990). The idea of a VP-internal derived object position is also contained in Koopman and Sportiche (1991).

[11] Another early account using a type of split VP hypothesis is Lefebvre (1991). In an earlier version of the present work, I included her data from Haitian Creole as supporting evidence. Because of the complications introduced by AGREE with no movement, however, the conclusions are less clear. I thank a reviewer for pointing this out.

(11) (Koizumi 1995: 133)



I repeat one of Koizumi's arguments for the Split VP hypothesis here.[12] He shows that quantifier float is allowed from objects in examples such as the ones below, where in the first case the object appears in a postverbal position, and in the second case that object has moved to the subject position through passivization (Koizumi 1995: 106).

(12) a. I gave the books all to John.
b. The books were given all to John.[13]

It is important to note that quantifier float from external arguments is not allowed in a postverbal position.

(13) a. * The men gave all a book to John.
b. * The men gave a book all to John.

Koizumi argues first that the quantifier float in (12a) shows both that the object has moved to its derived position (to Spec, AGR_OP) and that the verb has moved across it (to V^u). Neither of these movements, however, can have crossed the merged external subject position since they cannot

[12] Koizumi gives other arguments for his structure that involve adverb placement, the Minimal Link Condition, Participial agreement, and the Chain Condition. I refer the reader to his work for more development of his ideas. Since the early 1990s, others have used this sort of structure as well. My aim here is simply to give an early account.

[13] Some English speakers find this awkward.

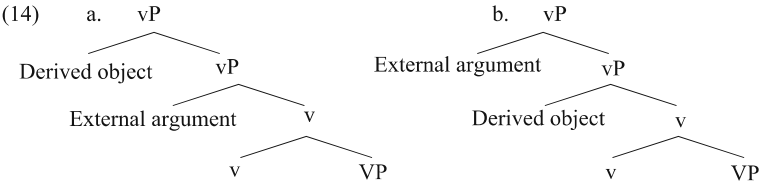
cross the quantifier that floats from the external argument as shown in (13).[14]

The four views presented above agree on the following three points: (i) there is a derived object position, (ii) the landing site is lower than Tense, and (iii) it is somewhere near the edge of the VP. For Mahajan, the position is in the first Spec outside of the VP. For Johnson, it is the Spec position of the VP itself, and for Sportiche and Koizumi, it is a Spec position below the merged position of the external argument.

2.3.5 Chomsky (1993, 1995)

Chomsky (1993) does not so much present a new view of object movement as adopt the type of view that Mahajan (1990) presents. I include Chomsky's structure here as it has become, for many linguists, the standard account of object movement. In this earlier work, as in Mahajan (1990) and Koizumi (1995), object shift is captured through DP movement to Spec, AGR_O. In a revised structure, however, Chomsky (1995: 349ff) does away with AGR heads since such heads, having no interpretable features, are seen to violate interface conditions. The newer version of object movement assumes that the object has moved to a (second) Spec position of v to check features on v. The question that arises in the context of this structure is, which Spec is the "outer Spec"—the one that is theta-related (the external argument) or the one that satisfies a feature of the head (the derived object)? The two possible structures are shown in (14) below.

(14)



In fact, Chomsky (1995: 358–359) entertains both possible orders of the Specs. Either one can be argued for and it largely depends on one's view of when in a derivation a feature must be checked and whether or not there is "tucking in" (as in Richards 2001). For example, Rackowski (2002), in her account of the phrase structure of Tagalog, argues that the derived object merges with vP first in order to check the EPP feature of v. The external argument

[14] This argument alone might suffer if Boskovic's (2004) proposal that floated quantifiers cannot be found in theta-positions is correct. However, as mentioned in footnote 11 of Chapter 1, Koizumi provides other evidence as well.

merges later but tucks in. The resulting structure is (14a). The order in (14b) could just as easily be justified conceptually in a view in which theta-relations must be satisfied before features of a head. The external argument would merge first, followed by a tucking in of the derived object. Alternatively, one could assume that features must be satisfied first (as in Rackowski's work) but that theta-relations do not involve tucking in.

In a way, these two views combine the views that we have just seen. Like Johnson's account, the derived object has landed in a verbal specifier position. The structure in (14a) is similar to Mahajan's account in that the derived object has moved beyond the external argument; (14b) is similar to Sportiche's and Koizumi's accounts in that the object has a landing site below the external argument. In the end, Chomsky chooses to follow up the order given in (14b) above, as this is the one that poses the clearest problem for a trivial notion of closeness and necessitates a re-evaluation of equidistance. The theoretical issues here do not have a clear answer and empirical work is needed. With this in mind, I turn to further cross-linguistic evidence that there are two object positions.

2.4 Two Object Positions

Above we have seen constructions in Malagasy, Swedish, Icelandic, Hindi, and English that are arguably derived through object movement. In this section, we extend the range of data and begin to gather details concerning the restrictions on object shift. The goal is to argue that there are at least two possible object positions—the logical object position where the argument is first merged into the structure, and then a derived object position—and that the choice of position used can depend on a variety of factors. In the sections below, I divide the examples depending on whether only one object position is filled at a time (EITHER/OR) or there are two positions filled simultaneously (BOTH).

2.4.1 One Object: EITHER/OR

In all of the cases we have seen so far, there has been only one object but it seems to have a choice of positions in which it can occur. Returning to our examples from Swedish and Icelandic, we note here that the choice of position has particular effects on information structure. While the relevant semantic distinction has been debated, Bobaljik (1995) argues, using the data from Icelandic and Dutch given below, that the distinction is one of new versus old information. The Icelandic example in (15) shows that, in terms of grammaticality, the specific definite object *Barriers* can appear either before or after the adverb. However, the position before the adverb is used for old information and the position after the adverb is used for new information.

(15) Icelandic (from Bobaljik 1995: 127–128)

context: Does he know Barriers?
(Barriers = old information)

a. Hann les **Barriers** alltaf
he reads **Barriers** always
'He is always reading Barriers.'

b. #Hann les alltaf **Barriers**
he reads always **Barriers**
'He is always reading Barriers.'

(16) context: Does he know Chomsky's work?
(Barriers = new information)

a. Hann les alltaf **Barriers**
he reads always **Barriers**
'He is always reading Barriers.'

b. #Hann les **Barriers** alltaf
he reads **Barriers** always
'He is always reading Barriers.'

The example below from Dutch shows that, when the object *Marie* precedes the adverbial phrase *gisteren* 'yesterday', it is used to encode old information. However, as new information—as an answer to a question, for example—the same DP will follow the adverbial.

(17) Dutch (from Bobaljik 1995: 126)

a. dat Jan Marie gisteren gekust heeft
that Jan Marie yesterday kissed has
'that Jan kissed Marie yesterday' [Marie = old information]

b. dat Jan gisteren Marie gekust heeft
that Jan yesterday Marie kissed has
'that Jan kissed Marie yesterday'
[felicitous answer to: 'Who did Jan kiss yesterday?' = new information]

Objects in these languages, then, move to the left, over adverbial type material, and this movement is dependent on the information structure of the sentence.[15]

Below we will see two more cases where objects appear in two different positions, and again, the position is dependent on fairly subtle interpretational differences. I add these languages to the discussion partly because they are less frequently seen in the literature on object shift and partly because they will become important later.

2.4.1.1 Chinese

In Chinese,[16] certain objects may appear either after the verb, in which case they are bare, or before the verb, in which case they are preceded by the particle BA.

(18) ta pian-le Lisi (Huang 1982: 27)
he cheat-ASP Lisi
'He cheated Lisi.'

(19) ta ba Lisi pian-le
he *BA* Lisi cheat-ASP
'He cheated Lisi.'

While much has been written on BA constructions in Chinese, my purpose here is simply to show that it has been observed that there are two surface object positions—one of which is semantically restricted. A more detailed analysis will be given in Section 2.5.1 of this chapter.

Cheng (1986) points out that the postverbal and preverbal positions are not both available for the objects of all verbs. As the examples in (20a) and (20b) show, the argument that appears in the preverbal BA position is the one that is considered to be affected by the verb. In (20) we see an example similar to a *spray/load* locative alternation in English (e.g., Rappaport and Levin 1988). If the NP *hua* 'the flowers' appears with BA, then the interpretation is that the flowers are affected. If the NP *huaping* 'the vase' appears with BA, then the vase is interpreted as affected (from Sybesma 1992: 120).[17]

(20) a. wo ba hua cha zai huaping-li le
I *BA* flower stick at vase-inside *LE*
'Istuck the flowers into the vase.'

---

[15] Much work has been done on this sort of object movement. For more literature on this and different viewpoints, see Holmberg (1986), de Hoop (1996), Neeleman and Reinhart (1998), Fox and Pesetsky (2005), and references cited therein.

[16] The term "Chinese" will refer to Mandarin throughout the book.

[17] There is also a change in the verb from *cha* 'stick' to *cha-man* 'stick-full'. This type of verb change will be important to the discussions in Sections 4.5.2 and 8.2.1.

b. wo ba huaping cha-man-le hua
I *BA* vase stick-full-*LE* flower
'Istuck the vase full of flowers.'

In (21) we see two verbs that do not take affected objects and in both cases, the BA construction is not possible (from Sybesma 1992: 120).

(21) a. *wo ba ta ai-le
I *BA* him love-*LE*
intended: 'I love him.'

b. *ta ba wo tingjian-le
he *BA* me hear-*LE*
intended: 'He heard me.'

Further, it appears that the difference in position has something to do with specificity (from Sybesma 1992: 128, credited to Wang 1984).

(22) a. Li laoshi gai-le ji-gen zuoye
Li teacher correct-*LE* few-M homework
'Teacher Li has corrected a few pieces of homework.'

b. Li laoshi ba ji-gen zuoye gai-le
Li teacher *BA* few-M homework correct-*LE*
'Teacher Li corrected the few pieces of homework.'

Chinese, then, like the Scandinavian languages, makes use of two different object positions. Here the determination of which position will be used seems to depend on the specificity of the DP as well as the aspectual class of the predicate.[18]

2.4.1.2 Scots Gaelic

Scots Gaelic also presents evidence for two different object positions. Like the examples from Hindi that we have seen above, one of the factors determining the use of these object positions is the grammatical aspect of the predicate. And, like the examples from Chinese, the aspectual class of the predicate is also relevant.

Ramchand (1997) shows that the direct object in Scots Gaelic appears in a different position and with a different case marking depending on the form of

[18] More will be said of the interaction of specificity and the aspectual class of the predicate in Chapter 5.

the verb.[19] For example, in the past periphrastic form of the verb, the object appears in the genitive case following the verb (as in (23a)). If the verb is in the perfect periphrastic form, the direct object appears in what is called the direct case form, this time preceding the verb (Ramchand 1997: 51–52). [20]

(23) a. Bha Calum a'faicinn **a'bhalaich** PAST PERIPHRASTIC
be-PAST Calum *AG* see-VN boy-GEN
'Calum saw the boy.'

b. Bha Calum air **am balach** (a) fhaicinn PERFECT PERIPHRASTIC
be-PAST Calum *AIR* the boy-DIR *A* see-VN
'Calum had seen the boy.'

As with the other languages discussed above, there are meaning shifts tied to position shifts. The connection is quite complex and will be discussed again in Sections 5.1.2, and 8.4. I give an example here, however, to indicate the direction that the meaning shift takes. Unlike the examples given in (22) for Chinese, the distinction is not one of specificity in Scots Gaelic. Definite DPs can appear in genitive case as shown in (24a). There is an effect on the interpretation of the verb, however, as shown in the contrast between (24a) and (24b) (from Ramchand 1997: 83).

(24) a. Tha mi ag iarraidh a'bhuill
be.PRES I.DIR *AG* want.VN the ball.GEN
'I want the ball.'

b. Tha mi air am ball iarraidh
be.PRES I.DIR *AIR* the ball.DIR want.VN
'I have asked for (and got) the ball.'

Ramchand argues that the object appears in two different syntactic positions and that the difference in structure accounts for the differences in word order and case realization. Further, while the two positions do not differ in terms of the specificity of the object, if the object appears in the higher position, the predicate must be dynamic.

---

[19] Others have worked on the issue of the varying position of the object in this and related languages and accounted for it via case-related object shift (e.g., Noonan 1992b; Guilfoyle 1993; Bobaljik and Carnie 1996). An interesting point in Bobaljik and Carnie's work (p. 229) is that one of their arguments that subjects in Irish cannot be in situ is dependent on their assumption that the only position for a derived object is above the merged position of the external argument: "... if the object has raised overtly to the specifier position of AgrOP yet the subject still precedes the object, then the subject *must* have raised past the object." Making the opposite argument, Ramchand assumes that the subject is in situ and therefore the derived object position must be lower. Since McCloskey (1996) presents convincing arguments against having subject in situ in Irish, I choose not to assume that it is in situ.

[20] The direct case is also what is used for nominative subjects.

There are, then, reasons to believe that there are at least two possible object positions. We have seen various examples where, sometimes restricted by semantic considerations such as specificity, affectedness, grammatical aspect and aspectual verb class, and/or case considerations, different object positions can be utilized. In the next section, more controversially, I will argue that there are environments where two object positions may be filled simultaneously.

2.4.2 Two Objects: BOTH

Baker (1988) discusses a wide range of applicative constructions in which an element other than the logical object behaves like the object of the verb. An example of a "dative" applicative construction is given below (taken from Baker 1988: 234, due to Chung 1976—boldface added).

(25) BAHASA INDONESIA

a. Saja mem- bawa surat itu kepada **Ali**
I TRANS-bring letter the to Ali
'I brought the letter to Ali.'

b. Saja mem- bawa- kan **Ali** surat itu
I TRANS-bring- to Ali letter the
'I brought Ali the letter.'

In Baker's account, the dative preposition is incorporated into the verb. The DP *Ali* must appear adjacent to the V + P complex in order to be assigned case, and acts like the object of the verb. The logical object, *surat itu* 'the letter', is no longer adjacent to the verb and no longer acts like the direct object. Baker introduces what he calls Marantz's Generalization (given below), which describes this effect.

(26) MARANTZ'S GENERALIZATION (Baker 1988: 246)

Whenever a verb appears with both extra morphology and an additional NP argument bearing some oblique thematic role, that additional NP argument will behave like the surface direct object of the complex verb.

Two ways in which we can see that the argument with the oblique thematic role has taken on the object properties are through (i) verbal agreement and (ii) passivization. Baker shows this for the benefactive applicative construction in Chichewa. In the examples below, we see that when the verb appears with the applicative morphology, agreement can be triggered by the benefactive object (27b) but not the logical object (27c). Moreover, passivization will promote the benefactive object to the subject position (28b) but will not promote the logical object (28c).

(27) a. Amayi a-ku-umb-ir-a mwana mtsuko (Baker 1988: 247)
woman SP-PRES-mold-for-ASP child waterpot
'The woman is molding the waterpot for the child.'

b. Amayi a-ku-**mu**-umb-ir-a mtsuko **mwana**
woman SP-PRES-**OP**-mold-for-ASP waterpot **child**
'The woman is molding the waterpot for the child.'

c. *Amayi a-na-**u**-umb-ir-a mwana **mtsuko**
woman SP-PAST-**OP**-mold-for-ASP child **waterpot**
'The woman is molding the waterpot for the child.'[21]

(28) a. Kalulua-na-gul-ir-a **mbidzi** nsapato (Baker 1988: 266–267)
hare SP-PAST-buy-for-ASP **zebras** shoes
'The hare bought shoes for the zebras.'

b. Mbidzi-zi-na-gul-ir-idw-a nsapato (ndi kalulu)
zebras SP-PAST-buy-for-PASS-ASP shoes (by hare)
'The zebras were bought shoes (by the hare).'

c. *Nsapato zi-na-gul-ir-idw-a mbidzi (ndi kalulu)
shoes SP-PAST-buy-for-PASS-ASP zebras (by hare)
'The shoes were bought for the zebras (by the hare).'

It is clear that the oblique DPs have taken on all of the grammatical properties of objects but the question is, how does this happen? There are two obvious possibilities: base-generation and movement. I will pursue the second[22] and propose, similar to Baker's proposal for the applicative constructions above, that the object has moved from a position lower in the tree over the logical object to the derived object position.[23] Applicatives, then, would be an example where both the logical object position and the derived object position are filled.

We have seen cases where the sole logical object of a predicate appears in two different positions and other cases where an oblique form has taken on object properties, leaving the logical object to behave as a secondary object. I claim that both of these types of construction are the result of A-movement of a DP to a derived object position, parallel to A-movement of a DP to a derived subject position. While the question of whether this DP's position is due to movement must be addressed, I will first look more closely at the proposed surface position.

---

[21] I have left this example as in Baker (1988: 247), even though it seems as if the translation should be in the past tense.

[22] I discuss the possibility of base-generation in Section 2.5.4.

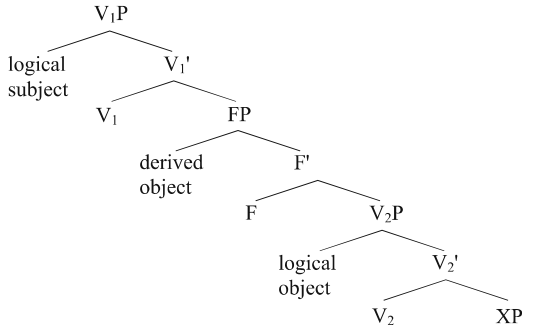
[23] I assume that the non-promoted logical object will be licensed (case-marked) in situ. This will be similar to non-promoted logical subjects in Western Malayo-Polynesian languages (see (43) below).

In many cases the position of the derived object is difficult to determine because there is no lexical material that the DP would move across. Looking at the tree proposed by Sportiche in (9) above, we can see that, if movement takes the direct object out of the VP, it will move across the top V and the external argument, suggesting that such movement should be visible. However, in many languages, the external argument moves out of the VP to the Spec, TP (in an active construction) or is realized as an oblique (in a passive construction). Further, the V also moves out of the VP to some functional category in languages like French, and to μ in English according to Johnson's account. As a result, it is actually very difficult to choose between the analyses given above. For this reason, I now turn to other languages for more evidence concerning the details of the movement.[24]

2.5 Objects within the VP

Below I present data from different constructions in various languages with the intent of showing that the derived object position is in a position within the VP, asymmetrically c-commanded by the logical subject position—Spec, VP. The basic structure that I will argue for is given in (29) below. I will refer to the higher V as V_1 and the lower V as V_2. At this time, I shall label the projection that houses the derived object as a generic functional category, F.

(29)



As we have just seen, in most well-studied languages, it is difficult to determine whether an element is external to the VP on its left edge or within the VP. The task here, then, is to find languages where either the Spec, V_1P or the V_1 position is filled. The first argument for the positioning of the derived object

[24] It is important to keep in mind here, as discussed in Chapter 1, that evidence from other languages is being used to determine what is universal to language.

position within the VP comes from the BA constructions in Chinese. Here I will be following Sybesma's (1992) account in which the *ba* morpheme appears as the head of the higher V projection. Since the derived object clearly follows this *ba*, it must appear in a position c-commanded by V_1. The second argument comes from a dialect of Swedish reported in Vinka (1999) where, as well as object shift of the type described by Holmberg (1986), there is also a lower object shift closer to the type seen in the English examples discussed by Johnson (1991). Following Vinka's own conclusions, I will claim that the lower type of object shift occurs within the VP. Finally, I investigate a particular type of language labeled NOMINATIVE THIRD (N3) languages by Sells (1998). In these languages, there appears to be some sort of grammatical subject position below the position of the external argument. I argue that N3 languages are best accounted for through partial A-movement to the derived object position. In combination, all of these word order facts support the hypothesis that there is a derived XP position contained in the V_1P in a position that is asymmetrically c-commanded by V_1.

2.5.1 Chinese

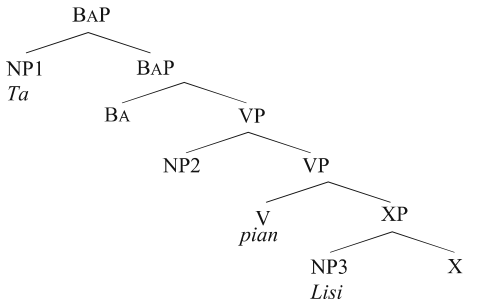
One argument for the lower position of the derived object position comes from Sybesma's work on Chinese (see Sybesma 1992) and his very careful study of the BA construction. Like Sportiche and Koizumi, Sybesma argues that the preverbal object has moved to a position within the VP. The structure he proposes for the Chinese sentences discussed above (repeated in (30) and (31) below) is given in (32) (e.g., Sybesma 1992: 154). The object *Lisi* moves from NP3 to NP2. In constructions with no *ba*, the verb moves to the BA head. Where there is a *ba*, no verb movement occurs.[25]

(30) ta pian-le Lisi (Huang 1982: 27)
he cheat-ASP Lisi
'He cheated Lisi.'

(31) ta ba Lisi pian-le
he *BA* Lisi cheat-ASP
'He cheated Lisi.'

[25] Koizumi's (1995) analysis of *na* constructions in Zarma, a Nilo-Saharan language, is very similar to Sybesma's analysis of *ba* constructions in Chinese. Note that, in fact, in these analyses, while the object is argued to move, the movement is obligatory. The preverbal vs. postverbal status of the object is determined not by whether there has been object movement but by whether there has been *verb* movement across the derived object. Sybesma's arguments for object movement are given below. Given that this obligatory movement is string-vacuous in the case of the non-*ba* construction, I will be assuming, contra Sybesma, that only in the *ba*-construction is the movement obligatory, accounting for the differences in the restricted interpretation of *ba*-constructions. We have seen (and will discuss again) a similar case in Scots Gaelic where verb movement obscures the position of the derived object. When the verb does not move, however, we can see the two object positions clearly.

(32)



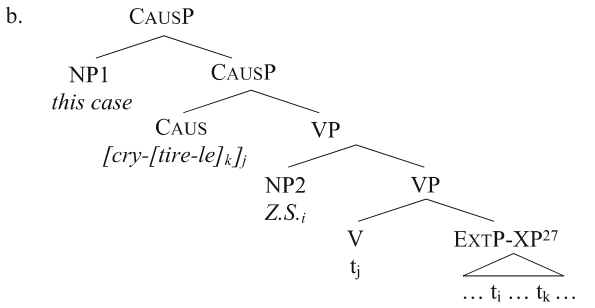
Sybesma's arguments in favor of a movement analysis over a base-generation analysis will become crucial to my argumentation in the next section. What is important to the current discussion is the positioning of the *ba* morpheme in his tree. He claims that *ba* is a causative-type morpheme ("The projection labeled BAP . . . should actually be labeled CAUSP" p. 154) which in my work I label V_1. One of his arguments for the causative nature of *ba* comes from causative-like structures such as the one given below.

(33) zhei-jian shi ba Zhang San ku-lei-le (Sybesma 1992: 154)
this-M case BA Z. cry-tired-LE
'This thing got Zhang-san tired from crying.'

Sybesma (1992: 159) argues that the grammatical subject in (33) gets its theta-role from the CAUS head *ba*. Again, in constructions that contain no *ba*, such as (34a) below, the same CAUS head has been generated, but this time it is filled by movement of the (complex) verb into this position, as shown in (34b). [26]

(34) a. zhei-jian shi ku-lei-le Zhang San (Sybesma 1992: 155)
this-M case cry-tired-LE Z.
'This thing got Zhang-san tired from crying.'

[26] 'Cry' in this construction behaves like a manner adjunct. A paraphrase might be 'This thing made Zhang-san tired through a crying event' where Zhang-san has been doing the crying. See Tomioka (2006) and Vinka (1999) for similar analyses of Swedish, Japanese, and English resultatives.



Therefore, even in the non-BA construction, a similar phrase structure has been generated but the constituency is less clear because of the effects of verb movement. The result that is important here is that the nominal argument which follows *ba* is a derived object and it appears below the V_1 position.

2.5.2 Swedish

Now I turn to data from Swedish which, when added to the object shift data from Swedish that we have already seen, show that there is more than one type of object shift. We will start with Holmberg's examples and what has come to be known as Holmberg's Generalization. In the Scandinavian languages, object shift famously occurs only when the verb moves into the inflectional domain of the clause. As we can see in the examples below, where the verb has moved out of the vP, the object can also shift (see (35a, b)). In (36), however, we see that when the main verb *läst* 'read' has not moved, the object also cannot shift (from Holmberg 1986: 165).[28]

(35) a. Varför **läste** studenterna inte alla v den?
why read the students not all it
'Why didn't all the students read it?'

b. Varför **läste** studenterna den inte alle v e_i?

(36) a. Varför har stundenterna inte allav **läst** den?
why have the students not all read it

b. *Varför har stundenterna den inte alla v **läst** e_i?

[27] EXTP is Extent Phrase, which is similar to Hoekstra's (1992) small clause. See Sybesma (1992: 74ff) for details.

[28] See Fox and Pesetsky (2005) for a way of accounting for these facts.

Further, in embedded clauses, where again the verb does not move into the inflectional domain, the object cannot shift.

(37) a. ….. att studenterna inte alla läste den
… that the students not all read it

b. * … att studenterna den inte alla läste e_i

There are two reasons to believe that the object has shifted out of the VP into the inflectional domain. First, movement of the object is dependent on movement of the verb into the inflectional domain. Second, the object appears before sentential adverbs and floated quantifiers, which are assumed to be at the left edge of the VP.

Other data from Swedish, however, support a view of VP-internal object movement that is different from the type of object shift we have just seen. Vinka (1999) discusses a case of object movement across a particle in Swedish.[29] With certain types of particles, a pronominal object may occur either to the right or to the left of the particle. This is shown in (38) below.[30]

(38) a. Jag stängde (den) av (den)
I switched it off it
'I switched it off.'

b. Kalle sparkade (den) sönder (den)
Kalle kicked it broken it
'Kalle broke it, by kicking it.'

While the data above could be accounted for as the same kind of object shift we saw in (35b), by changing the examples slightly, we can see that object shift across particles remains within the VP. In constructions parallel to those in (36) and (37) where the verb does not move out of the VP, we can see that object shift across a particle still occurs. However, while the object appears to the left of the particle, it still appears to the right of the verb and negation, making this sort of object shift different from the type shown in (35b). Example (39) shows a case where an auxiliary verb blocks movement of the verb into the inflectional domain, and (40) shows an embedded clause where the verb does not move into the inflectional domain. In both cases, however, the pronoun may still appear to the left of the particle.

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[29] Vinka is reporting on a dialect of Swedish spoken in Northern Sweden and in Finland. I am grateful for his input on these data.

[30] The purpose of Vinka's paper is to argue for a phrase structural distinction between two different types of particles in Swedish. My interest is only in the predicative type of particle since this is the one that allows both low object shift (across the particle) and high object shift.

(39) Jag har inte **stängt** den av
I have not switched it off

(40) Kalle tror att jag inte **stängde** den av
Kalle thinks that I not switched it off
'Kalle thinks that I didn't switch it off.'

The data from Swedish clearly show that pronominal objects may move but there are two types of movement, one that occurs within the VP and one that occurs, perhaps, across the VP boundary.

2.5.3 Nominative Third (N3) Languages

Now we turn to a different set of constructions. In the cases to be discussed here, I argue that the merged external argument remains in its merged position and that there is DP movement to a lower position, that is, a position within the VP. The data come from a set of Western Malayo-Polynesian (WMP) languages that Sells (1998) has labeled NOMINATIVE THIRD (or N3) languages because of their particular word order. Discussion of these languages requires a bit of background on what I assume to be the appropriate account for the phrase structure of other WMP languages and their relatives in the larger Austronesian language family.[31]

In Guilfoyle et al. (1992), it is argued that there are two "subject" positions in many Austronesian languages, represented structurally by Spec, IP and Spec, VP. The DP in the Spec, VP is the external argument, in most cases an Agent.[32] The DP related to the Spec, TP position will always be a derived subject and may have a variety of theta-roles depending on the morphology on the verb. The existence of two subject positions is similar to what many researchers now assume, but the Austronesian languages are particularly interesting because they allow both positions to be filled simultaneously. In other words, the two subjects can co-occur.[33] With verb movement to Tense in a head-initial structure, we get the following word order, where Agent is one subject in Spec, VP and "Topic" is the other subject in Spec, TP.[34]

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[31] In fact, the phrase structure is probably much more complicated than what I present here. Most likely there is iterative predicate movement in many of these languages, as proposed by Pearson (1998), Rackowski (1998), and Rackowski and Travis (2000). I believe that none of the claims that I make in this book are affected by these proposals.

[32] Because an Experiencer is also found in this position, the label Agent has been avoided in the literature, replaced by Actor. I will often just use the term Agent, however, especially when discussing particular constructions where the external argument is in fact an Agent.

[33] This, in fact, would be the subject counterpart to the applicative constructions discussed above where both the merged and the derived object position are filled simultaneously.

[34] I use the term traditional term "topic" here mainly to be consistent with much of the literature in this area and to distinguish this position from the VP-internal "subject" position.

(41) [$_{TP}$ V + "topic" morphology [$_{VP}$ AGT [t_V TH GO]] "Topic"]

SUBJECT 2 (Spec, VP) SUBJECT 1 (Spec, TP)

The element that appears in Spec, TP is linked to the "topic" morphology that appears on the verb. Malagasy basically has a three-way distinction: Actor Topic, Theme Topic, and Circumstantial Topic (where something other than the Actor or Theme is the topic, see e.g., Paul 2000: Chapter 3). In the examples below, the sentence-final (bolded) DP is in the subject (Spec, TP) position. The (italicized) DP is the Agent and is in Spec, VP when it has not moved to the sentence-final subject position.[35]

(42) a. ACTOR TOPIC/ ACTOR VOICE[36]

[Manasa lamba amin'ny savony] ***ny*** ***lehilahy***

PRES.AT.wash clothes with'DET soap DET man

'The man washes clothes with the soap.'

b. THEME TOPIC/OBJECT VOICE[37]

[Sasan'*ny* *lehilahy* amin'ny savony] **ny** **lamba**

PRES.TT.wash' DET man with'DET soap DET clothes

'The clothes are washed by the man with the soap.'

c. CIRCUMSTANTIAL TOPIC

[Anasan'*ny* *lehilahy* lamba] **ny** **savony**

PRES.CT.wash'DET man clothes DET soap

'The man washes clothes with the soap.'

The tree in (43) below shows how movement accounts for the word order when the Subject/Topic is something other than the Actor.

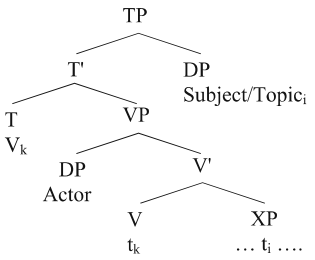
See Kroeger (1993), however, for arguments that this "topic" bears little similarity to the discourse notion of Topic. Others, however, such as Sells (2000), Richards (2000), and Pearson (2001), have maintained that this position is a topic, or at least an A'-position.

[35] Obviously, some explanation for why a DP is licensed in this position is required. See Section 3.3.1.2 for an account of Case in Malagasy.

[36] The apostrophe in the Malagasy examples and glosses indicates a process labeled N-bonding by Keenan (2000).

[37] There are a variety of ways of promoting the object to subject position. I give only what is called the "suffix passive" (see Paul 2000 and Pearson 2001 for more on this in a Chomskian framework).

(43)



I leave aside some of the details of these constructions. What is important to note at this stage, however, is that the left edge of the VP is discernible when the Agent remains in Spec, VP. My claim, then, is that any argument that moves leftward to a position to the right of the Agent must undergo movement within the VP.

Now we are ready to look at a specific case: Kalagan, a Philippine language. Kalagan is slightly different from Malagasy since the "topic" does not appear in a Spec, TP overtly, but rather in what Sells (1998: 124) labels a NOMINATIVE THIRD or N3 position.[38] Sells points out that, among Philippine languages, "[b]y far the most common (and often rigid) requirements for the ordering of constituents within the clause put the subject effectively in third position" (pp. 123–124). Examples of other languages with this word order are Pangasinan (Mulder and Schwartz 1981), Cebuano (Bell 1976), Dibabawon (Forster 1964), Isnag (Barlaan 1986), Balangao (Shelter 1976), and Limos Kalinga (Ferreirinho 1993).

The facts are as follows. In N3 languages, in the case of a non-Agent topic, the topic immediately follows the Agent (and precedes all other arguments of the verb). The word order as described by Collins (1970) for Kalagan is given in (44) below, and a schematized version in (45).

(44) Kalagan word order generalization

> the verb is first and is followed by the nominal elements as they are given [Agent-Object-Instrument-Beneficiary-Locative-Time: LDT]. The one regular exception is that when the *ya*-phrase [topic: LDT] is not the agent, it immediately follows the agent, all other phrases keeping their places. (Collins 1970: 4)

(45) V - (Agent) - "Topic" - XP

Examples of a variety of topic constructions in Kalagan are given in (46) (already seen in Chapter 1). In (46a) and (46b), one could conceivably argue

[38] I will return to a possible analysis of this in Section 3.4. I have benefited from discussions with Mark Campana many years ago concerning Kalagan and the problems that it raises for phrase structure.

that the topic has remained in its base-generated position. In (46c–e), however, it is clear that there is a designated position in which the topic (the *YA*-marked element) appears (adapted from Collins 1970: 5).

(46) KALAGAN (Philippines)

a. Kumamang **aku** sa tubig na latakan Ma' adtbalkon nalunis
AT-get **I** water with can for Father on porch on Monday
'I'll get the water with the can for Dad on the porch on Monday.'

b. Kamangin ku **ya** **tubig** na lata kan Ma' adti balkon na lunis
TT-get **I** **water** with can for Father on porch on Monday

c. Pagkamang ku **ya** **lata** sa tubig kan Ma' adti balkon na lunis
IT-get **I** **can** water for Father on porch on Monday

d. Kamangan ku **ya** **Ma'** sa tubig na lata adti balkon na lunis
BT-get **I** **Father** water with can on porch on Monday

e. Kamangan ku **ya** **balkon** sa tubig na lata kan Ma' na Lunis
LT-get **I** **porch** water with can for Father on Monday

Ferreirinho (1993: 57–58) gives the following structures from Limos Kalinga, another WMP language that also exemplifies N3 word order. The examples from Limos Kalinga show that full DP Agents can appear in the postverbal position and that it is not the pronominal status of the Agent in the Kalagan examples that accounts for the word order.

(47) LIMOS KALINGA (Philippines)

a. Nan-dalus **si** **Malia-**t danat palatu
PERF.AT-wash **SUBJ** **Maria-OBL** PL plates
'Maria washed some plates.'

b. D-in-alus-an ud Malia **danat** **palatu**
PERF-wash-TT GEN Maria **PL.SUBJ** **plates**
'Maria washed the plates.'

c. In-dalus-an ud Malia **si** **ina-na-**t nat palatu
PERF-wash-BT GEN Maria **SUBJ** **mother-her-OBL** DET plates
'Maria washed some plates for her mother.'

d. In-dalus ud Malia **nat sabun** sinat palatu
PERF.INSTT-wash GEN Maria **SUBJ soap** OBL plate
'Maria washed plates with the soap.'

If we take the Kalagan example in (46c), we can represent it structurally as in (48), showing movement of the instrumental DP from its merged position—

which is to the right of the logical object—to some position between the Agent and the Theme.[39]

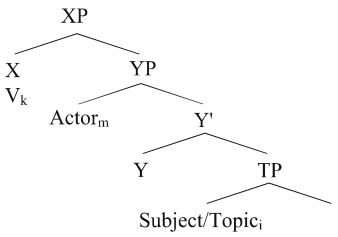
(48) KALAGAN

a.	Pagkamangk	[$_{V1P}$	ku	**ya**	**lata**$_i$	[$_{V2P}$	sa	tubig	V_k	t_i	kan	Ma']]
	IT-get		**I**		can			water			for	Father
b.	V_k	[$_{V1P}$	Agt	**derived DP**$_i$		[$_{V2P}$	Theme		V_k	t_i	XP]]	

Setting the exact analysis aside for now (see Section 3.4), we can see that the word order facts look similar to the Indonesian example in (25) where an element appears just to the left of the logical object. The difference is that the presence of the Agent DP tells us that the moved element has remained within the V_1P. For this reason, I assume that there must be some position within the V_1P that can be a landing site for derived elements.

An analysis of this word order could start with the assumption that the Subject/Topic is in some VP-external position (say, Spec, TP to make it parallel to Malagasy and English) and that the Agent and verb move even further to appear to the left of the Topic. A sketch of such an analysis is given below.

(49)



In this view, we obviously have no argument for the VP-internal position of the moved Topic. I see two conceptual problems with this account, however. One is that we are forced to posit additional (arguably, unmotivated) movements that are not supported by similar phenomena in other languages. The second is that we cannot explain why it is always the external argument that appears in the Spec, YP position. An overarching issue I have with such an account is that it falls in with a general tendency to approach "exotic" languages as being like English (French, German) plus some additional fix-up mechanisms. These sorts of accounts make better-studied languages appear to be less

[39] As an anonymous reviewer pointed out, it could be that the derived DP is in a high derived position outside of the VP and that both the verb and the external argument (Agent DP) have moved even higher. I resist this type of account since I see no need for the extra movements. Further, if the external argument is in situ, we can explain why the thematic content of this position is restricted to the external argument. In other words, if this DP were in a high derived position, we might expect other arguments (benefactives, instrumentals) to appear there.

marked and more economical than less-studied ones. In principle, then, I assume that the more economical account of N3 languages is, all other things being equal, the preferable one.

In the discussion above, I have been arguing for two VP-internal positions in which objects (DPs) can appear. The question still remains, however, whether these two positions are related by movement. I will address this question next.

2.5.4 Movement Vs. Base-Generation

Showing that there is a second object position within the VP only gets us halfway to the conclusion that there is a derived object position within the VP. Many researchers would agree that the position of an applicative object is below the position of an external argument, but they would argue that this is a merged position (e.g., Pylkkänen 2000). The task, then, is to show that the object comes to be in the second/higher position through movement. Part of the problem in tackling this issue comes from the fact that there appear to be different types of object "movement."

We could broadly divide possible object movement into two types. One type falls under a movement analysis more easily. First, it does not create a second object but simply shifts the existing one (the EITHER/OR case). Further, in some cases, there appears to be little connection between the possibility of movement and the event structure of the predicate.[40] The best example of this would be the higher Scandinavian object shift. It is not surprising that researchers working on this sort of construction propose a movement analysis, and one that is solely related to the grammatical characteristics of the construction (e.g., Chomsky 1993, 2001).

At the other extreme, there are constructions where an additional object is represented and there is a shift in the event being described. In this situation, the additional object position is related more closely to the semantic characteristics of the construction. Much has been made of the effect on the event, and the conclusion that has often been drawn is that the shift in meaning indicates a fundamental difference in the way the arguments have been merged. Some typical examples are given below.

In the first set of pairs, we see that the double-object construction changes the effect that the event has on the goal of the action. As pointed out by many researchers (e.g., Green 1974; Oehrle 1976), there has to be a possession relationship at the end of the event when the goal appears as an object. A typical example uses the English verb *teach*. Below we see first the prepositional construction, followed by the double-object construction (taken from Arad

[40] As shown by, for example, Bobaljik (1995), there is an effect on the information structure, however.

1998: 86). The double-object construction entails a change of state in the first object.

(50) a. Mary taught French to Paul (but the idiot still doesn't speak it properly).
b. Mary taught Paul French (*but the idiot still doesn't speak it properly).

We see a similar effect when we have possessor raising. Let us start with a simple example from Chichewa (taken from Baker 1988). In (51a), the verb takes an object that contains a possessor. In (51b), we see that, with a form of the verb that contains an applicative affix (*-er*), this possessor behaves like the object of the verb.

(51) a. Fisi a-na-dy-a nsomba za kalulu (Baker 1988: 11)
hyena SP-PAST-eat-ASP fish of hare
'The hyena ate the hare's fish.'

b. Fisi a-na-dy-er-a kalulu nsomba
hyena SP-PAST-eat-APPL-ASP hare fish
'The hyena ate the hare's fish.'

Not only does this possessor now appear adjacent to the verb, but it also moves to the subject position under passivization.

(52) Kalulu a-na-dy-er-edw-a nsomba ndi fisi (Baker 1988: 272)
hare SP-PAST-eat-APPL-PASS-ASP fish by hyena
'The hare had his fish eaten by the hyena.'

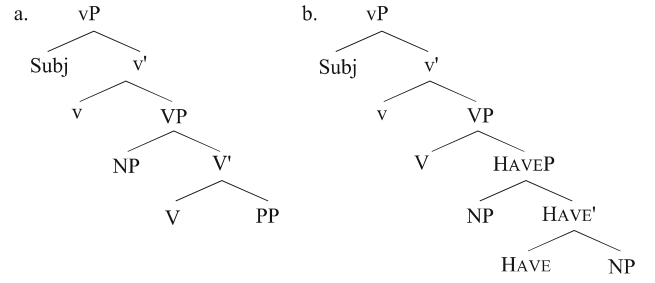
If the relationship of (51a) and (51b) is mediated by movement, we might expect possessor raising to be perfectly productive. However, in the Korean example given below, when the possessor appears as the object, it has to be affected by the event (taken from Yoon 1990).[41]

(53) a. John-i Mary-lul phal-ul ttayly-ess-ta
John-NOM Mary-ACC arm-ACC hit-PST-DECL
'John hit Mary's arm.'
b. *Na-nun Mary-lul phal-ul po-ass-ta
I-TOP Mary-ACC arm-ACC see-PST-DECL
'I saw Mary's arm.'

[41] A reviewer points out that this is similar to the English *I hit Mary's arm* and *I hit Mary on the arm* vs. *I saw Mary's ar m* and **I saw Mary on the arm*. However, this type of structure is much more productive in languages with true possessor raising. See example (58) where an idiom chunk can raise. Landau (1999) presents arguments from Hebrew supporting a movement analysis of Possessor Raising. He also calls into question whether affectedness is the appropriate restriction on the predicate or whether the restriction has to do with the nature of the external argument. I believe that his observations could be accommodated with minor changes to my account.

These observations have led researchers to posit a different underlying structure for the two constructions. In the double-object construction, and the possessor raised construction, the "derived" object is, in fact, merged as an argument of an additional head. An example of the type of structure used for the double-object construction is shown below (adapted from Beck and Johnson 2004: 104–105).[42] The tree in (54a) is for the NP PP construction while the one in (54b) is for the NP NP construction.

(54)



Just as researchers investigating Scandinavian object shift have concluded that the second object position must be a VP-external derived position created through grammatical requirements (such as the need to check uninterpretable features), researchers investigating these double-object constructions have come to the conclusion that the second object position is a VP-internal merged position (such as Spec, ApplP) created through a difference in argument and/or event structure.

It is tempting, given these observations, to conclude that there is a high second object position within the inflectional domain of the phrase structure and a low second object position within the lexical domain of the phrase structure. The high position would be a landing site of movement triggered by uninterpretable features introduced on an inflectional head. The low position would be a merged argument position created by an additional event-related head.

While I will not engage in a full discussion of the issues involved in this large and lively debate, I resist this conclusion, mainly because it is not clear that there is a clear division between the types of constructions. For example, into which category would the positioning of objects with respect to particles (in English and Swedish) fall? Vinka's data suggest that it is of the lower type, since it is not dependent on movement of the main verb into the inflectional domain in Swedish, and it is connected to choice of predicate. Further, one might want to argue that, in English, movement of the object across a particle also has some

[42] This was not the first time this sort of structure was proposed in an articulated VP format. See, for example, Hoekstra (1995), Harley (1996).

effect on the interpretation of the event, though more subtle. It seems to me and to other English speakers I have checked this with that the DP *the problem* that has moved across the particle *through* in (55a) gives the impression of having been analyzed completely in a way that is not the case in (55b).[43]

(55) a. I feel confident that they have thought the problem through.
b. I feel confident that they have thought through the problem.

At the same time, however, it is hard to argue that movement of an object across a particle necessarily relates this object to a different argument structure since an embedded subject can also move to this position, as we can see in the following example taken from Lasnik (2001) (see also Kayne 1985).

(56) Mary made John_i out [t_i to be a fool]

These English data, then, show that the event-related object position in (55) is also a derived position (see (56)). Possessor raising as in (53) above is dependent on the nature of the predicate, suggesting an applicative structure. Yet it is possible for an idiom chunk to undergo possessor raising. In fact, while similar, the English facts are not as productive as other possessive raising cases. Baker (1988: 272) gives an interesting example from Choctaw (credited to a manuscript of Munro), in which an idiom chunk may undergo possessor raising.

(57) Naahollo i-tobi-ya apa-li-tok
white.man AGR-bean-ACC eat-1sS-PAST
'I ate the white man's beans.' OR 'I ate the green peas.'

(58) Naahollo-ya tobi i-m-apa-li-tok
white.man-ACC bean 3S-APPL-eat-1sS-PAST
'I ate the white man's beans.' OR 'I ate the green peas.'

Here 'white man's beans' can be used idiomatically to mean 'green peas' and the idiomatic reading is preserved in the possessor raised example (58).

Sybesma also uses idioms to argue for movement in the BA construction in Chinese. As we just saw above, Sybesma claims that the *ba* in Chinese BA constructions is in a high CAUS head—a head I label V_1. He further proposes that the VP selected by *ba* is ergative (i.e., unaccusative) since it has no external

[43] A reviewer points out that this distinction may come from the fact that *through* can be analyzed as a transitive preposition in (55b). It is true that other examples (where the preposition cannot be analyzed as being transitive) may not show the same distinction (*I burned up the papers* vs. *I burned the papers up*). This weakens the claim that the English particle constructions also show a shift in meaning. However, the point remains that the lower derived object position may host non-arguments, as shown in (56).

argument. Let us look again at the tree in (32). Sybesma proposes that the logical subject is generated in NP1, while the logical object of a BA-construction is generated in NP3 and moves to NP2. This means that the object is assigned its theta-role by the material in X and not by the material in V. An example originally taken from Goodall (1989) is relevant to the discussion here.

(59) a. ta ku-de tieshu kai-le hua (Sybesma 1992: 146)
he cry-DE iron.tree open-LE flower
'He cried such that iron trees blossomed.'

b. ta ba tieshu ku-de kai-le hua
he BA iron.tree cry-DE open-LE flower
'He cried such that iron trees blossomed.'

The argument is that *tieshu* 'iron tree' in (59) is an idiom chunk, part of the larger fixed expression *tieshu kai-le*, and as such cannot be base-generated apart from the rest of the idiom. Its preverbal position, then, must be explained by movement of the NP to the preverbal position.[44]

Now let us turn to the data from N3 languages and see where they fall in the typology of derived objects. These cases also do not fall neatly into either category of object shift. They are like English in that two objects are realized—the derived object and the logical object. They are unlike applicatives, however, in that the process is very productive and has no semantic effect. Any argument may move into this position as long as the verbal morphology is appropriate. My conclusion, then, is that there is a low VP-internal derived object position. Sometimes elements in this position are related to shifts in event structure (double objects in English) and sometimes they are not (N3 languages). It is this low position that is the focus of this book. I do not, however, exclude the possibility of higher landing sites for derived objects within the inflectional domain. I leave further discussion of the distinction between these positions until Section 5.2 and of shifts in meaning to Section 4.4.6.

In the next chapter, I will discuss the nature of the landing site and the case of the derived objects. If this movement is truly A-movement, we might expect the landing site to be a Spec position of some head parallel to the Spec, TP landing site for derived subjects.[45] Before turning to this discussion, however, I raise some issues related to positing an inflectional category within the VP.

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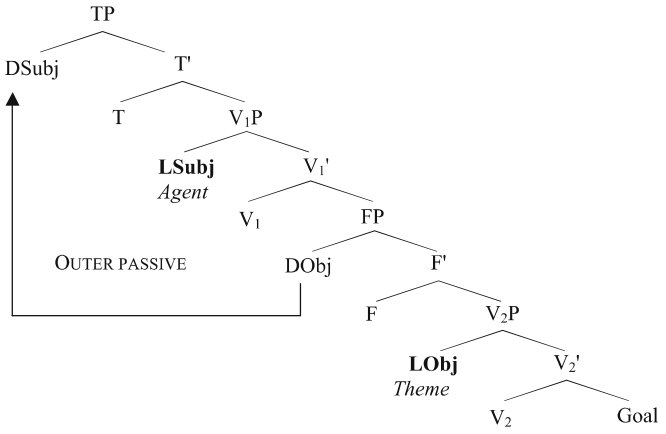
[44] See the discussion in Sybesma (1992: 146ff) concerning Huang's disagreement with Goodall's conclusion. Part of the issue is what counts as an idiom and thereby an idiom chunk, an investigation which would take us too far afield and must be left for future research. Recall that Cheng (1986) has shown that the *ba* NP must be an affected argument. More likely, the distinction has to do with stative vs. dynamic predicates.

[45] As we have seen above, Chomsky (1995) proposes that the object moves to a second Spec, vP position ("little v"). Movement, therefore, does not provide evidence for Spec of an

In Larson's seminal (1988) article, the VP is articulated with VP shells. These shells are seen as a way of extending the VP in order to have enough c-commanding positions for arguments within the VP. In other words, extra heads are created to meet the syntactic requirements of the arguments. The heads themselves are not given semantic content. By introducing another category within the VP between the VP shells, however, I am suggesting that each V head acts quite independently—further suggesting that each one has some semantic content. Much more will be said about this later, but at this point, like Hale and Keyser (1993), I assume that V_1 has a meaning similar (but not identical) to the English word *cause*. Further, just as the Agent is the external argument of V_1, the Theme will be the external argument of V_2. In some sense, then, the Theme will be the inner logical subject. Larson also saw Spec, V_2P as being a lower subject, but with the addition of an inflectional category within the VP, this parallel can be pushed even further. Both subjects and objects, now, are generated in Specs of lexical categories (V_1 and V_2, respectively) and move to Specs of nonlexical categories (T and F, respectively).

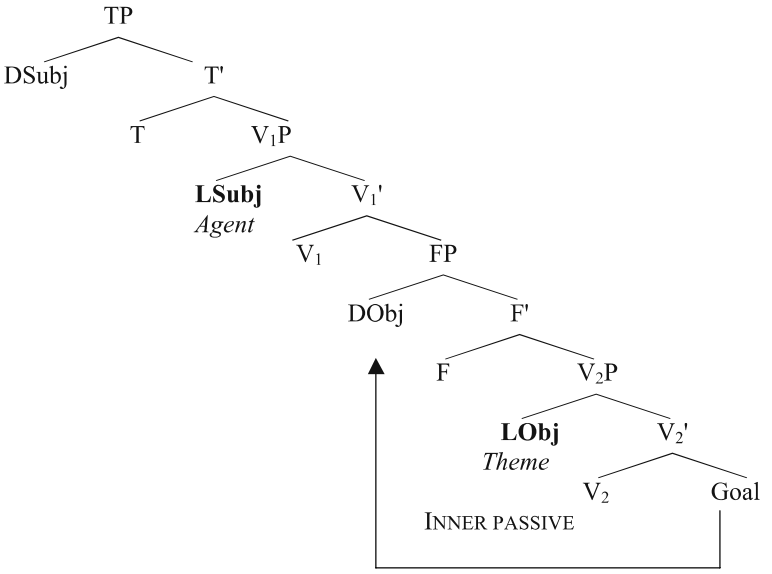
We can see this parallel structure in an adaptation of Larson's inner and outer passives, where dative shift is an example of an inner passive. In each case, the highest argument position is bypassed and a lower argument moves to the Spec position to check some relevant feature. In an outer passive, it is the Theme rather than the Agent that is targeted for movement. In an inner passive, it is the Goal rather than the Theme that is targeted. This is shown in the structures in (60).

(60) a. OUTER PASSIVE



additional nonlexical category. Further, he considers v to be a functional category. I differ from Chomsky in assuming that case-checking in a Spec, head configuration only happens with nonlexical categories, and that V_1 therefore is a lexical category. My view of lexical vs. functional categories is introduced briefly in Chapter 1 and fleshed out in Section 6.5.

b. INNER PASSIVE



Note that the inner passive (i.e., dative shift) leaves the logical object intact, in its base-generated position. This is also like the outer passives in a WMP language such as Malagasy, where elements move to the Spec, TP position while leaving the Agent in the Spec, V_1P position, as shown in the tree in (43). All cases of applicatives will be examples of inner passives.

2.6 Conclusion

Looking at examples from several languages, I have argued that there is evidence for A-movement to a position below the merged external argument position. While this movement in some cases may be tightly related to the nature of an event (e.g., applicatives), in other ways it is like other cases of A-movement (e.g., N3 languages). In the next chapter, I look more closely at the nature of the landing site of low object shift with the aim of determining why it is sometimes like and sometimes different from A-movement.

Chapter 3
Inner Aspect and Event

3.1 Introduction

In this chapter, I look more closely at the syntactic heads that make up the predicate phrase. First, I argue that the functional category within the VP whose Spec is the landing site of certain derived objects is (Inner) Aspect. More specifically, I argue that the VP has shells, in the sense of Larson (1988) and that Aspect is a projection sandwiched within these shells. The number of layers within the VP and the identity of these layers will be dealt with in Chapter 4. In the second half of the chapter, I argue for another functional category, E(vent), which is at the boundary between the lexical domain of the VP and the purely inflectional domain. E becomes important in the demarcation of the two domains in Chapter 5.[1]

3.2 Arguing for Inner Aspect

Starting with the assumption that morphology attaches affixes in the syntax in an orderly manner, I will argue that there is evidence that a morpheme that encodes a type of viewpoint aspect not only appears as the spell-out of a functional category closest to the VP but is, in fact, within the VP—hence the name Inner Aspect. At this point of the discussion, perhaps misleadingly, I will talk about Aspect in a way that collapses the notions of situation aspect and viewpoint aspect (see Chapter 1). Eventually I will argue that the main function of the Aspect head that appears VP-internally is to encode situation aspect,

[1] Cinque (1999) has a view of phrase structure that includes many functional categories, of which 18 are related to aspect (Cinque 1999: 130). Evaluating his analysis would take us far afield. As will become clear in my discussion of Navajo, there are fewer functional categories in the phrase structure I am presenting. One functional category, however, may host multiple morphemes the order of which is determined by semantics. My point right now is that at least one of these Aspect projections must be within the VP.

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Verkuyl's (1993) Inner Aspect, but that it can also, as we will see shortly, be used to house viewpoint (Outer) aspect morphemes.

While the position of Aspect has varied across different accounts of phrase structure, it is not surprising that most accounts overlap in important ways. Below is a sampling of the possibilities with the relevant references.

(1) Positions of Aspect

a. Aspect is under AUX (Chomsky 1965: 43)
b. Aspect is its own head, selecting a VP (Carstens and Kinyalolo 1989: 7)
c. Aspect is its own head, selecting AGRoP (Speas 1991: 279)

Chomsky (1965: 43) has the following phrase structure rule:

(2) Aux ➔ Tense (Modal) (Perfect) (Progressive)

Chomsky's phrase structure rule generates Perfect and Progressive under Aux but it also encodes the information that the order is Tense—Modal—Aspect. Aspect, then, clearly is the inflectional element closest to the VP even in this system, which lumps multiple inflectional elements into one phrase structure node.

The points on which all of these accounts agree are the following:

(3) Aspect is below Tense
Aspect has scope over V
Aspect is the (non-AGR) functional category closest to V

As already previewed in Chapter 1, I use morpheme orders in Tagalog and Navajo to argue that an aspectual head is located between Vs in the layered VP proposed by Larson (1988). In particular, I am interested in finding inflectional-type material wedged between material that can arguably be considered lexical. By using morpheme order to probe phrase structure, however, I rely heavily on a syntactic account for Baker's Mirror Principle, given below.

(4) MIRROR PRINCIPLE (Baker 1985: 375)
Morphological derivations must directly reflect syntactic derivations (and vice versa).

As Baker points out, the morphology/syntax parallel described by the Mirror Principle follows if one derives morpheme order through head movement in syntax. Morphemes (or the feature bundles they represent) will be generated in syntactic heads and gathered up through head movement, obeying the Head Movement Constraint (HMC) of Travis (1984).[2]

(5) HEAD MOVEMENT CONSTRAINT (Travis 1984: 131)
An X^0 may only move into the Y^0 that properly governs it.

[2] Baker (1988) derives the descriptive content of the Head Movement Constraint from the Empty Category Principle (ECP). Since the current theoretical status of the ECP is not clear, and the descriptive content of the HMC is all that I require, I refer only to the HMC.

This view of morphology not only captures the generalization expressed in the Mirror Principle, it can be used as further evidence for the configuration of phrase structure. In other words, if syntax explains morpheme orders, then morpheme orders should constitute a probe into syntax. It is this assumption that underlies my arguments in the discussion below.[3]

3.2.1 Tagalog Reduplication

In this section, I use the position of reduplication in Tagalog as evidence that Aspect may appear between the two shells of a VP.[4] While the assumptions that lead to this conclusion are not uncontroversial, I hope to show that this analysis of Tagalog is at least as plausible as other analyses, and together with other arguments presented in this book, supports my particular view of VP phrase structure.

In order to determine what may appear between V_1 and V_2 in any language, it is necessary to determine the content of V_1. As discussed earlier, in English, V_1 has no overt morphological realization and can therefore give us no clues as to inclusion of a head within the V_1P. Not all languages have empty V_1s, however. The first step of my argument concerning Tagalog, then, is to show that V_1 may be filled. As outlined briefly in Chapter 1, one of the more obvious members of the V_1 closed class is CAUSE, which is used to transitivize morphemes (lexical causatives). In the Tagalog data given below, we can see transitivity alternations.[5]

(6) Alternations (Maclachlan 1989)

a.	**t**-um-**umba**	X fall down	b.	mag-**tumba**	Y knock X down
	s-um-**abog**	X explode		mag-**sabog**	Y scatter X
	l-um-**uwas**	X go to into the city		mag-**luwas**	Y take X to the city
	s-um-**ali**	X join		mag-**sali**	Y include X

The elements that appear to be alternating in the morphology are the infix *-um-* in the intransitive examples and the prefix *mag-* in the transitive examples. I follow Maclachlan (1989) in assuming that *mag-* is, in fact, a combination of

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[3] In my discussion of Navajo, I will posit that one head can account for multiple morphemes, and the ordering in this case may be determined by semantic considerations. See the discussion in Section 3.2.2.

[4] This account of Tagalog reduplication appeared first as part of Travis (1991), but has also appeared in Travis (1992a, 2000a).

[5] As we will see throughout the book, transitivity alternations tend to be idiosyncratic. This is also true for Tagalog where we find *b-um-ili* 'buy' and *mag-bili* 'sell'. This might suggest that the process is lexical rather than syntactic and that we are headed in the wrong direction by using the morphology of transitivity alternations as evidence for syntactic structure. At this point I ask the reader to bear with me and I will address this issue directly in Chapter 6 (Section 6.2.2.).

m- and *pag-*. Further, I also assume that *m-* and *-um-* are allomorphs of an inflectional feature that will not concern us here. The alternation, then, is between a zero morpheme for the intransitive and the transitivizing morpheme *pag-*.

There are reasons to propose a different view, however, as does Carrier-Duncan (1985), who analyzes both *mag-* and *-um-* as Topic Markers.[6] In her view, the transitivity alternation simply moves predicates from one derivational class to another. In other words, the intransitive verbs are in the derivational class that takes the *-um-* Actor Topic morpheme while the transitive verbs are members of the derivational class that takes *mag-* as the Actor Topic morpheme. One strong argument for this view is that both *mag-* and-*um-* disappear when Theme Topic morphology is added, as can be seen below (from Schachter and Otanes 1972: 297, 299).[7]

(7)

Root	Translation	Actor Topic	Theme Topic
***mag*-verbs**			
hiwa	cut	*mag-hiwa*	*hiwa-in*
luto	cook	*mag-luto*	*lutu-in*
***-um*-verbs**			
hul	catch	*h-um-uli*	*hulih-in*
tahi	sew	*t-um-ahi*	*tahi-in*

Since it will be crucial to my claim that there is an Aspect projection below V_1, it is necessary for me to show that V_1 in Tagalog is indeed filled by *pag-*. I give two arguments that support Maclachlan's analysis over Carrier-Duncan's analysis.

First, when we look at the addition of the aptative morpheme *maka-,* as shown below, we see that *-um-* disappears while *mag-* leaves *pag-* behind.

(8) Aptative (Ramos and Bautista 1986)

a.	'able to join'	maka-sáli	*	maka-s-**um**-ali
b.	'able to include'	* maka-sáli		maka-**pag**sáli

[6] As we have seen in Section 2.5.3, one of the central properties of many Western Malayo-Polynesian languages is the process whereby one of a number of DPs within a sentence may be singled out by the verbal morphology and by a marker on the DP or a particular position of this DP within the clause. There is much debate concerning how this DP should be represented structurally or even what it should be called descriptively (e.g., Schachter 1976; Kroeger 1993; Maclachlan 1996; Rackowski 2002; Aldridge 2004). In the text, I will be using the terms used by the original authors, at the risk of confusing the reader but in an attempt to stay true to the original literature.

[7] In order to show this, we have to use *-um-* verbs that are transitive because the verbs must have direct internal arguments. In the discussion in Chapter 6 (Section 6.2.2) on the difference between lexical causatives and syntactic causatives, we will raise the issue of why a transitive verb can apparently be marked as being inchoative/intransitive.

This shows not only that *mag-* is not the same as *-um-*, but also that *mag-* can be argued to be bimorphemic, composed of *m-* and *pag-*. If this is the case, the parallel that should be made is between *-um-* and *m-*, both of which disappear when the aptative is added, rather than between *-um-* and *mag-*.

The second reason for analyzing *pag-* as a lexical causative marker rather than a topic marker comes from the Benefactive Topic paradigm. Benefactive Topic morphology appears as *i-* on verbs whose Actor Topic morphology is *-um-* and as *ipag-* on verbs whose Actor Topic morphology is *mag-*.[8]

(9) Benefactive Topic Marker (Schachter and Otanes 1972)

AF [AT] – BF [BT] Correspondences

Actor Focus affix	Benefactive Focus affix
-um-	*i-*
mag-	*ipag-*

(10) a. kumain ako ng pansit *um+√kain*
AT.eat 1SG.NOM ACC noodles
'I eat noodles.'

b. ikinain mo ako ng pansit *i-in-√kain*
BT.PERF.eat 2SG.GEN 1SG.NOM ACC noodles
'You ate noodles for me.'

(11) a. nagluto ako ng pansit *n-pag-√luto*
PST.AT.cook 1SG.NOM ACC noodles
'I cooked noodles.'

b. ipinagluto mo ako ng pansit *i-in-pag-√luto*
BT.PERF.cook 2SG.GEN 1SG.NOM ACC noodles
'You cooked noodles for me.'

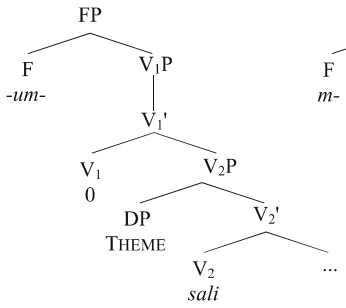
Once again *-um-* and *m-* are behaving uniformly and should be treated uniformly. On the other hand, *pag-* should be treated as a lexical part of the verb rather than part of the inflectional paradigm of Topic morphology.

My conclusion is that *pag-* is generated in V_1 and is responsible for assigning the additional Agent theta-role and the accusative case.[9] The alternation between *s-um-ali* and *mag-sali* will be as in (12), where the function of *-um-*/*m-* is left vague on purpose; it will be discussed more in Section 3.3.1.2.

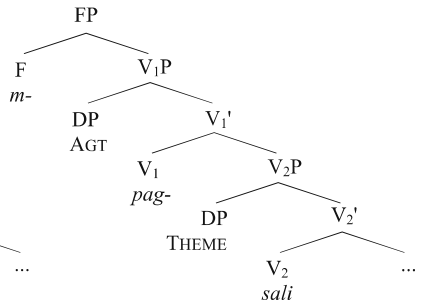
[8] Example sentences in (10) and (11) were provided by Raph Mercado.

[9] In Chapter 6, I will be looking more closely at the role of *pag-* in Tagalog. I will present an explanation for the morpheme deletion in (7) in Section 6.4.2 and will also discuss a more recent account of *pag-* given by Rackowski (2002) in Section 6.4.3.

(12) a. *s-um-ali*



b. *mag-sali*



Both structures above are composed of two VP shells. I will assume without discussion here that, in (12a), the V_1 has a phonetically empty morpheme that simply introduces an event variable and the whole VP has the structure of an inchoative.[10] In (12b), the V_1 has the morpheme *pag-*, which introduces not only an event variable but also the meaning of CAUSE and the theta-role, Agent. What is important for present purposes is that we are now able to see the phonetic content of V_1.

In the structures above, there is no functional category between the two VPs. Using the data, below, however, we can argue that such a functional category must be added. First let us look at the aspectual system of Tagalog. There appear to be two types of aspect, which we will call ASP1 and ASP2.[11] ASP1 appears as either the infix *-in-* or the prefix *n-* on the verb stem. Based on Maclachlan's (1989) analysis, I will assume that the meaning can be captured with the feature [+start]. ASP2 is encoded by a complex rule of reduplication, which gives a meaning like imperfective. Maclachlan assigns the reduplicating morphological process the feature [+incomplete]. While the feature system might predict four forms, the fact that it is impossible to have a completed but not yet started event means that only three are found.[12] The system is outlined in the table below with examples of the complex forms given in (13).[13]

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[10] The need for a V_1 for unaccusatives will become clearer in later sections of the book (e.g., Section 4.4.4).

[11] These, in fact, are both semantically related to Outer Aspect, one stacked above the other. I will claim, however, that the lower of the two can appear housed in Inner Aspect.

[12] The form *magtumba* can be used as an aspectless form, however. See Kroeger (1993: 16–17) and Schachter and Otanes (1972: 153ff).

[13] I use Schachter and Otanes' (1972) terminology. *Contemplated* would mean something like future.

(13) ASPECT1: +/−start

+start	**-in-/n-**
−start	0

ASPECT2: +/−incomplete

+incomplete	reduplication
−incomplete	0

START	incomplete		
+	+	*nagtutumba*	Imperfective
+	−	*nagtumba*	Perfective
−	+	*magtutumba*	Contemplated
−	−	**magtumba*	

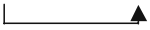
In order to see the relative positioning of the morphemes, we look more closely at the imperfective form, which contains both the [+start] morpheme (ASP1) and the [+incomplete] morpheme (ASP2). The order of morphemes appears to be as given below, where the reduplication of ASP2 occurs between the *pag-* morpheme and the verb root.

(14) *nagtutumba* *n* + *m* + *pag* + RED + V
IMPERFECTIVE ASP1 + TM + PAG + ASP2 + V

If this is the appropriate morpheme order, one could argue that there must be a head between *pag-* and V to house ASP2, that is, there must be an Aspect head within the VP. Other accounts for the placement of reduplication have been offered in the literature. I will present one of these in detail and then conclude that the phrase structure account of the reduplicated morpheme is at least as plausible as any other account.

If one were to argue that Aspect is a functional category which is outside of the VP (and one is also assuming that head movement is an explanation for morpheme order), then the problem at hand would be to explain why reduplication appears to jump over the *pag-* part of the verb stem. In other words, the assumption would be that the morpheme bracketing for the imperfective form of the Tagalog verb would be as in (15) but the reduplicated syllable would be the second one.

(15) *n* + RED + *pag<u>tu</u>mba*



Unfortunately, the reduplication facts in Tagalog imperfective are not as simple as the data given so far might imply. Much has been written on the topic of Tagalog reduplication. The research investigating the exact form of the reduplicated syllable does not concern us here. It is the research that investigates which syllable is targeted that is relevant. The data are complex and I claim that

this complexity argues for and not against a syntactic analysis. As we will see below, any morphophonological account becomes so intricate that it suggests that morpheme division and not phonological structure is at the heart of the problem.

There have been some attempts to solve the problem of reduplication in the area of phonology. Before going into one of these accounts, let me outline some of the problems that any account of reduplication must handle. In the simple cases, what is reduplicated is simply the first syllable, as in (16). We can see this below with a verb of the *-um-* paradigm. The reduplication feeds the infixation of *-um-*. This can be compared with the cases we started with, in which the reduplication skips *pag-* and attaches to the root as in (17).

(16) Reduplication of first syllable:

ROOT:	***pasok***	'√enter'
INFINITIVE:	*p<u>um</u>asok*	
CONTEMPLATIVE:	*pumapasok*	*um+papasok*

(17) Reduplication of first syllable of root:

ROOT:	***pasok***	'√take in'
INFINITIVE:	*<u>mag</u>pasok*	
CONTEMPLATIVE:	*magpapasok*	*m+pagpapasok*

While we might want to collapse the two cases above to say that reduplication always targets the verb root, we can see in the following examples that when the verbal prefixes are more complex, the process is also more complicated. In (18) below, reduplication appears on the second syllable of the prefix itself (from French 1988: 45).[14]

(18)

STEM: **trabáhoh**	'work'	
PREFIX:	*mag-pa*	'AGT-CAU'
INFINITIVE:	*mag-pa-trabáhoh*	'X causes (s.o.) to work'
CONTEMPLATIVE:	*mag-pa-pa-trabáhoh*	'X will cause (s.o.) to work'
PREFIX:	*maka-*	'AGT+POT'
INFINITIVE:	*maka-pag-trabáhoh*	'X is able to work'
CONTEMPLATIVE:	*maka-ka-pag-trabáhoh*	'X will be able to work'
PREFIX:	*mag-paka-*	'AGT-INT'
INFINITIVE:	*mag-paka-trabáhoh*	'X works very hard'
CONTEMPLATIVE:	*mag-pa-paka-trabáhoh*	'X will work very hard'

[14] French uses different terminology, which I have changed in order to be as consistent as possible. What I have labeled INFINITIVE and CONTEMPLATIVE, she labels BASIC ASPECT (BAS) and PROPOSED ASPECT (PRO), respectively.

PREFIX:	*magsi-pag*	'MULT-AGT'
INFINITIVE:	*magsi-pag-trabáhoh*	'X's work together'
CONTEMPLATIVE:	*magsi-si-pag-trabáhoh*	'X's will work together'

The data above led French to suggest that, in the case of Agent Focus verbs (or what I have been calling Actor Topic verbs) with polysyllabic prefixes, it is the second syllable of the prefix that reduplicates. At the end of her analysis, she has two reduplicating templates. In Inflectional Template 1, reduplication always occurs on the first syllable of the root (P = prefix; M = stem; S = suffix).

(19) INFLECTIONAL TEMPLATE 1 (IT1) (French 1988: 27)
(P) CV + M (S)

Here, the P in parentheses indicates that the prefix does not count as part of the stem for the purpose of reduplication. The reduplicating template is added to the remaining material. To account for the disyllabic prefixes there is a different inflectional template, Inflectional Template 3, which ensures that reduplication occurs on the second syllable of the prefix.[15]

(20) INFLECTIONAL TEMPLATE 3 (IT3): agent-focus syllable template
$\sigma 1 + \text{CV} + \sigma 2 + \ldots + (\sigma)n - 2$

Conditions: (a) n = no. of syllables in basic verb
(b) Association is template-driven

In this case, reduplication is sensitive to the syllable structure of the stem, not the morphological structure.

In presenting this templatic view of reduplication in Tagalog, French argues against a different proposal by Carrier (1979). French calls Carrier's solution the one-syllable, one-morpheme solution. In Carrier's account, each syllable is an independent morpheme so that the disyllabic prefixes in Tagalog are also bimorphemic. Furthermore, reduplication must have one morpheme to its left. Within this account, the disyllabic morphemes *maka-* and *magsi-* in (18) above must each be composed of two morphemes, *ma-* and *ka-* in the first case, and *mag-* and *si-* in the second case. As French points out, while a bimorphemic analysis of *maka-* is not unsupported (in fact, we will see evidence in favor of it in Chapter 7), a bimorphemic analysis of *magsi-* is harder to argue for.

In spite of French's objections, I choose an analysis very similar to Carrier's. I differ on a few counts, however. As we have already seen, I disagree with Carrier's exact analysis of *mag-*. I also assume that each of the morphemes of the base form represents a head in the syntactic structure, and I assume that reduplication is added in the syntax. Because *pag-* is relevant for the transitivity

[15] Inflectional Template 2 has to do with infixation of the ASP1 morphology and not with reduplication.

alternations shown in (6) above, I assume that this morpheme is generated in the top V of a VP shell structure, namely in V_1. Because reduplication occurs between the root and *pag-*, I assume that it is in the functional category between V_1 and V_2, the lower V. Further, since reduplication encodes morphological aspect, I assume that the name of this category is Aspect.

Some more recent studies have addressed additional complications of Tagalog reduplication. The positioning of the reduplicative affix to encode incompletive in Tagalog is not straightforward because, though many descriptions of the facts do not present it this way (e.g., French 1988), there are often many different options for the same form. These options are outlined in Rackowski (1999). An example given to me by R. Mercado appears below.

(21) a. makapagpahintay
m-a-ka-pag-pa-√hintay
PRES-*A*-*KA*-*PAG*-*PA*-√wait
'be able to cause someone to wait'

b. ma-**ka-ka**pagpahintay
c. maka-**pa-pa**gpahintay
d. makapag-**pa-pa**hintay
e. makapagpa-**hi-hi**ntay

R. Mercado reports that (21e), where the reduplicative affix attaches to the root, is the most "elegant." I take this to mean that it represents the most conservative version. Rackowski (1999) argues that this reduplicative morpheme in Tagalog is indeed generated in the lower Aspect position (as an exemplar of Cinque's completive aspect) and can undergo optional scrambling in the morphological component. Within Rackowski's account, the conservative version is the merged position and the other positions are created through scrambling. In my version, the merged position is Inner Aspect.[16]

My analysis is clearly not without problems. One particular problem that I return to in Chapters 4 and 6 is the type of aspect that is being encoded in this Inner Aspect position. As we will see, the Inner Aspect position will be primarily related to situation aspect throughout the rest of this book, but reduplication in Tagalog appears to encode a kind of viewpoint aspect: progressive (see Chapter 1 and Smith 1991: 5ff for a discussion of this distinction). There are two directions that a solution could take. I will outline them briefly.

One could argue that reduplication primarily encodes (lack of) completion. This is the direction that Rackowski (1999) takes. In Cinque (1999: 130), the head for terminative aspect is located above the head for progressive aspect,

[16] See a more recent paper by Mercado (2006) for a phase-based account of these options and Skinner (2009), who assumes that Asp2 is attached via lowering.

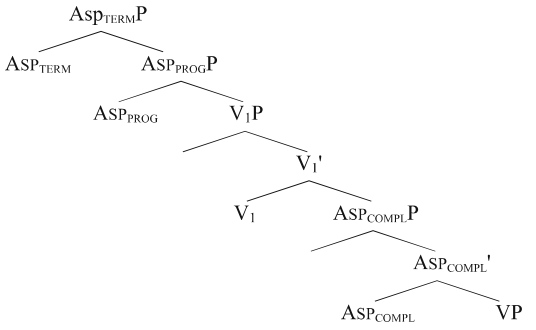
which in turn is located above the head for completive aspect. If we assume that the Outer Aspect morpheme of Tagalog is Cinque's terminative aspect, we could still analyze the reduplicative morpheme in Tagalog as (in)completive. However, in Section 7.3.2, another aspectual morpheme (*-ka* in Tagalog and *-ha* in Malagasy) will be discussed. I argue that this morpheme is the completive morpheme and more evidence will be given there that it appears below V_1. Further, this morpheme and the reduplicative morpheme can co-occur, as shown in (22) below.[17]

(22) a. ROOT: √sulat '√write'
b. APTATIVE (INF): ma**ka**sulat 'able to write'
c. APTATIVE (CONT): na**kaka**sulat 'was managing to write'

n-	*a-*	*RED-*	*ka-*	*√sulat*
TERMINATIVE	V_1	PROG	COMPLETIVE	

The co-occurrence of these two morphemes suggests that they are generated in different heads and that analyzing reduplication as (in)completive is not the right solution.[18] I therefore take a different direction and propose that Outer Aspect can exceptionally appear within the VP. What is important for the discussion at hand is that there *can* be a position below V_1 and that this position *can* house aspectual information. The structure of the VP I argue for, then, is given in (23) below.

(23)



[17] I have taken these forms and the terminology from Ramos and Bautista (1986: 237). The exact meaning of the *m*/*n-aka* complex of morphemes is quite difficult to characterize. I discuss it more in Chapter 7, but other relevant references are Dell (1983), Phillips (1996, 2000), and Travis (2005c, d).

[18] In the discussion of Navajo in the next section, I do allow modificational material to be late-adjoined to a head. Since the +incomplete morpheme is not modificational, late adjunction is not an option. In fact, we will see several environments where progressive Outer Aspect appears to exert an influence on Inner Aspect. As mentioned in Chapter 1, this issue is one I am exploring in ongoing research.

The second option is that the Outer Aspect head can require an Inner Aspect head of a certain type. I introduce cases of this kind in the discussion of coercion in Chapter 8, but, to preview the issue, we see in the example below that Outer Aspect in Spanish induces a particular reading of the verb.

(24) Spanish

a. Cuando estudiaba en la escuela, **conocía** muchas personas.
when study.IMP.1SG in DET school know.IMP.1SG many people
'When I studied at school, I knew many people.'

b. Conocí a Juan en 1980.
know.PERF.1SG, a Juan in 1980
'I met Juan in 1980.'

The perfective form of the verb in (24b) forces the state reading of (24a) to shift to a change of state reading. I will argue in Chapter 8 that this shift comes about by the Outer Aspect selecting an Inner Aspect of a particular type. To bring this back to the realization of aspect in Tagalog, I propose that progressive Outer Aspect (realized by a zero morpheme) requires an incompletive Inner Aspect. Incompletive Inner Aspect is realized by reduplication.

3.2.2 Mirror Principle Violations in Navajo

Now I turn to apparent Mirror Principle violations in Navajo[19] and suggest that they may be accounted for through the phrase structure introduced above, along with the assumption that affixes may be forced to attach directly to a predetermined domain that is a subpart of the stem.[20] At first glance, it seems that the order of morphemes in Navajo is best captured by positing an idiosyncratic template, as has been done in the descriptive literature (e.g., Young and Morgan 1987: 37–38). Such a solution, however, would undermine the restrictive nature of the Mirror Principle. Speas (1990) presents an account of the morpheme order that avoids the use of a template but also increases the power of the morphological component. In this section, I suggest that there is an analysis that borrows from two separate ideas presented by Speas. First, at the end of her discussion of morpheme orders in Navajo, she notes that the morpheme order appears to be in the reverse order of the syntactic heads in a tree structure.[21] In other words, the morpheme that would be syntactically

[19] In Chapter 8, I summarize some similar observations made by Rice (2000) on Slave, a related language.

[20] The material presented in this section was first written up in Travis (1992b).

[21] Hale (2000) presents a different account for the order of the morphemes. The advantage of his account is that the voice/trans affix is part of the syntax. The disadvantage is that he cannot account for the noncompositionality of positions 1 and 6. I refer the reader to his account to make a comparison.

represented farthest from the verb is the affix closest to the verb stem. The second idea is that affixation may be sensitive to a phonological environment, giving the appearance of infixation.

The morpheme order of Navajo is as follows (Speas 1991: 205ff; emphasis added).

(25) Navajo Verbal Morpheme Order

ADV	ITER	DIST-PL	D-OBJ	DEIC-SBJ	ADV	MODE	SBJ	VOICE/TRNS STEM
1	2	3	4	5	**6**	7	8	**9**

1 = ADVERBIAL: manner, direction . . . also indirect object pronoun
2 = ITERATIVE: aspectual/adverbial prefix
3 = DISTRIBUTIVE PLURAL: plural and distributive, 'each one separately'
4 = DIRECT OBJECT: number and person of direct object
5 = DEICTIC SUBJECT: indefinite (someone) or fourth person (people in general)
6 = ADVERBIAL: adverbial/aspectual notions
7 = MODE: core of tense system
8 = SUBJECT: person and number of subject
9 = voice/trans

Speas (1990) accounts for the order of morphemes by having them be sensitive to phonological environments. The five phonological environments needed are given below.

(26)	#	____	beginning of the word
		____ F	before the underlying foot
		____ CV(C)#	before the final syllable
		____ C_nF	before the final foot and the conjunct prefixes (which are all Cs)
	CV	____	after the first syllable

The problem with this type of analysis is that, if this is a possible mechanism, one would expect enormously complex morphology orders in natural language, undermining the observations expressed by the Mirror Principle. It also fails to capture Speas's other observation: that the morphemes are in the reverse of the order predicted by the Mirror Principle.

Before going into my analysis of this morpheme ordering, there is an important observation to make. The affixes in Navajo can be distinguished along two axes—one involves semantic productivity and the other involves the strength of phonological "bonding."

Let us tackle the semantic division first. In the template given above, I have highlighted two prefix positions—positions 1 and 6. My reason for doing this is that these positions (labeled ADV) appear to be, in some sense, part of the lexical entry of the verb, along with the stem itself. In (27), I give three examples taken

from Speas (1990: 208), which show that these positions are idiosyncratically realized and contribute in a noncompositional fashion to the meaning of the verb.

(27)	a.	*yá . . . ti'*	'to talk'	1. . .	stem
	b.	*di . . . lid*	'to burn something'	6. . .	stem
	c.	*so . . . di . . . zin*	'to pray'	1. . . 6. . .	stem

Speas writes "[n]one of these prefixes is derivationally productive, nor may these stems occur without these prefixes." The material filling in the slots indicated by ". . ." in these verb forms, however, is the more productive agreement, aspect, and mood morphemes of the language. Young (2000: 27) labels positions 1 and 6 DERIVATIONAL (THEMATIC-ADVERBIAL) PREFIXES, while positions 2, 3, 4, 7, and 8 are labeled INFLECTIONAL PREFIXES.[22]

There is an additional qualitative difference among the prefixes in the verbal complex. Positions 1–3 are traditionally called disjunct prefixes, while positions 4–9 are called conjunct prefixes; disjunct prefixes are seen as more "loosely bound" while conjunct prefixes are more "tightly bound" (based on "functional, phonological, and positional criteria," Young 2000: 27).

(28) DISJUNCT vs. CONJUNCT prefixes

ADV	#ITER#	DIST-PL#	D-OBJ	DEIC-SBJ	ADV	MODE	SBJ	VOICE/TRNS STEM
1	2	3	4	5	**6**	7	8	**9**
—— DISJUNCT——			———————— CONJUNCT ————————					
"loose"			"tight"					

Ideally, an account should capture both of these distinctions. Now I will turn to my attempt to do just this. In order to make my analysis of the morpheme ordering of Navajo work, I need three ingredients. The first is the phrase structure being argued for here, where there is a inflectional head within the verbal domain. The second is a particular version of morpheme attachment (interior affixation) where an edge that is internal to the stem may be visible for attachment. Finally, I will accept a version of late head adjunction (e.g., Newell 2008 and references therein). I begin my discussion with interior affixation and sketch how this would work with the Inner Aspect phrase structure. I then turn to the problem of disjunct vs. conjunct prefixes and propose a solution using late adjunction. Finally, I detail how Inner Aspect, along with interior affixation and late adjunction, produces the morpheme facts of Navajo.

To account for the apparent mirror image attachment of Navajo morphology, I propose that affixation may be sensitive to some domain that is

[22] In fact, he concludes that three elements that appear in position 6—the transitional, semelfactive, and seriative markers—are inflectional. I will discuss this briefly below.

morphologically circumscribed. I will label this domain the minimal word (MW); in Navajo, it contains the stem and the VOICE/TRANS morpheme.[23] Each subsequent affixation attaches directly to this minimal word. This is clearest in step (29c) below. When *af2* is attached, it "tucks in" and attaches to the left edge of MW rather than to the left edge of *af1*.

(29) a. [MW]
b. af1+ [MW]
c. af1 + af2+ [MW]

The mirror image effect, then, would in fact be predicted by the Mirror Principle.[24] As each new morpheme is attached, the previously attached morphemes are pushed farther from the minimal word. Linear bracketing would give one order, but the effect of affixation to the minimal word would give the opposite one.

Second, I propose the morphemes in positions 1–3 are attached via Late Adjunction. Basically, this means that, under certain conditions, morphemes can be adjoined late in the derivation (following movement) (see Newell 2005 for how this is used for separable prefixes in German). I will give an example from Newell's paper and refer readers to other works that detail how this might be implemented.[25] For the sentence in (30a), Newell proposed the structure in (30b) (slightly adapted here).[26]

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[23] I could use one of the environments described in Speas's work to define this domain. This is the environment shown in (29c) above as—CV(C)# (before the final syllable). This would explain the internal affixation, but we would still need the phrase structure that I am arguing for.

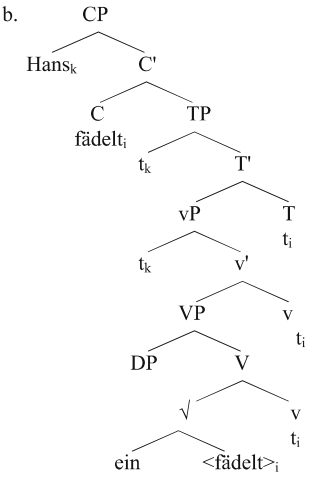
[24] McCarthy and Prince (1990) have argued that morphological processes may be sensitive to prosodic domains (prosodic circumscription), which also gives the appearance of infixes in certain contexts. Affixation in Navajo would be similar except that it would be sensitive to a morphological rather than a phonological context.

[25] I have changed the example slightly because German speakers that I consulted did not accept the example given by Newell for reasons irrelevant to the point that she was making. I thank Joan Maling for bringing this to my attention and Michael Wagner for providing a new example.

[26] A problem arises with Newell's account because separable prefixes do not act like adjuncts in other ways (e.g. they appear to the right of the object and they can change the aspectual and argument structure properties of the verbs). In Newell (2008: 201) she addresses these issues and proposes that the separable prefix late adjoins to a null aspectual head. It is this null aspectual head which accounts for the changes in the properties of the predicate, not the separable prefix itself.

(30) a. [$_{CP}$ Hans [fädelt [$_{TP}$ den Faden [$_{VP}$ [$_{V}$ ein t]]]
Hans thread the thread in
'Hans threads the thread.'

b.

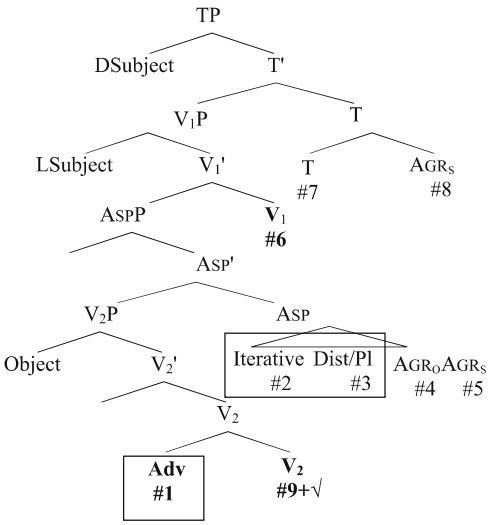


To quote Newell "after the verb has undergone at least one operation of raising, the particle is merged" (p. 270). The particle *ein*, as an adjunct, adjoins later in the derivation to the merged position of the verb root.

Now let us turn to the proposed structure and see how these ingredients produce the appropriate morpheme order for Navajo. The tree below shows where on the structure each morpheme is realized.[27] The prefixes in boxes will be attached via Late Adjunction following movement. Note also that Agreement morphemes can co-occur on a head with other morphemes. Since Chomsky (1995), there has been a general consensus that agreement, being uninterpretable, denotes a relation and is not realized as a separate syntactic head.

[27] I have sketched a head-final tree, though that is not crucial. I follow Baker's analysis of polysynthesis (Baker 1996) so no XP arguments will be part of this structure. This becomes important in the discussion of West Slave in Chapter 8.

(31)



Let us go through a sample derivation. The voice/transitivity morpheme (9), according to Speas, is no longer productive and, I would assume, is now part of the stem.[28] The material licensed by the Inner Aspect head is added in the next step of head movement (see (32b) below). At this point, all that appears here are two agreement markers (4 and 5), which will be discussed in more detail below. In the next step, (32c), movement to V_1 adds the lexical material in position 6. Since this material is added by interior affixation, the existing affixes (4 and 5), will be pushed farther from the root. In the final movement to T (32d), tense (7) and subject agreement (8) are added, once again attaching to an interior position. Post-movement, additional material is adjoined to the merged positions via Late Adjunction as shown in (32e). Note that the semantic contribution of the late-adjoined material is modificational, much like the morphemes discussed in Newell's work.

(32) a. [#**9**]
b. t_V [#4][#5][#**9**]
c. t_V t_{ASP} [#4][#5] [#**6**] [#**9**]
d. t_{V2} t_{ASP} t_{V1} [#4][#5] [#**6**] [#7][#8] [#**9**]
e. t_{V2}[#**1**] t_{ASP}[#2][#3] t_{V1} [#4][#5] [#**6**] [#7] [#8] [#**9**]

[28] I place some other cases of unproductive transitivity alternations (such as the ones discussed in Section 6.2.2 for Tagalog) within L-syntax, that is, not the pure lexicon. I do not think it is contradicting myself to say that some cases are semiproductive (i.e., in L-syntax) and others are no longer productive at all (i.e., in the lexicon). *Pag-* in Tagalog can be added to loan words, for example *mag-slice* (*Magslice ka ng tomato*. 'You slice the tomato.') It would be interesting to see whether the Navajo morphemes can also be affixed to loan words.

Before investigating the semantic content of the various positions, let us first propose a solution to the conjunct/disjunct dichotomy. Looking at (32e) above, we can see a qualitative distinction between the disjunct prefixes (1–3) and the conjunct prefixes (4–8). Those prefixes that are "loosely bound" are all attached via late adjunction. I will assume that this difference in mechanism accounts for their distinct behavior.

Now let us again examine the details of the Navajo morphemes, with the goal of correlating their content with their syntactic position. Position 9 is the root, positions 7, 8, and 4 are fairly straightforward: Tense, subject agreement, and object agreement, respectively. As already discussed, positions 2 and 3 are aspectual modifiers, which, as modifiers of Inner Aspect, attach to Inner Aspect via low late adjunction. I have nothing more to say about any of these. I now turn my attention to the remaining, more problematic, positions 5, 1, and 6.

Position 5 is difficult to explain. It seems to be a low subject position, appearing unexpectedly below V_1. Superficially, it has two semantic elements in common with the reflexive passive in Spanish. It is used for unspecified agents, and it is also used for passive interpretation (see Young 2000: 35). A relevant example from Spanish is given below (from Bruhn-Garavito 2000: 36).[29]

(33) Ayer *(se) vendieron los helados
yesterday SE sold-PL the ice creams
'Yesterday the ice creams were sold.'

Tentatively, I propose that the morpheme is not so much subject agreement as it is an element that absorbs an external theta-role, resulting in an interpretation similar to a passive or an unspecified external argument. Further argumentation is still needed to place this morpheme in the internal inflectional domain, however. I propose that it is a productive inflectional feature that must enter the derivation before the head that would introduce the external argument, in other words, before V_1. Since the external argument is absorbed at this point, the identity of this argument is left underspecified. A regular passive morpheme will be added higher up after the external argument is introduced. By positing that the regular passive morpheme is added higher up, we can allow the external argument to be syntactically active while being phonetically unrealized (along the lines discussed in Baker, et al. 1989).

Now we shall turn to the "adverb" positions, 1 and 6. These, I have claimed, are part of the lexical entry of the verb. They differ, however, in where they are placed in the tree. Ideally, these differences would have consequences. Such consequences are addressed in more detail in Chapter 8, but, for now, the basic predictions are clear. Position 6 is expected to be related to the external argument or the whole event, as it is merged in V_1, the position where the external

[29] This sentence is grammatical but with a different meaning ('They sold the ice creams yesterday').

argument is generated and which is at the edge of the whole event. Furthermore, position 1 within V_2P is expected to relate to the endpoint of the event. A quick look at the details of the affixes found in this position, based on Young (2000), is no more than suggestive, but I argue that they tend to confirm my approach.

In Position 1, the prefixes range over a variety of meanings, but all are arguably related to the core event (in the sense of Tenny 1998). The most promising types are those that encode what Young calls BOUND POSTPOSITIONALS and SIMPLE ADVERBIALS (in Position 1b). Some examples are given in (34a) and (34b) below.

(34) Position 1b

a. BOUND POSTPOSITIONALS (Young (2000: 45)

-k'í-:	onto (e.g., pour onto)
-í-:	against (e.g., lap against)
-gha-:	away from (e.g., take away from)
-ghá:	through (e.g., penetrate through)

b. SIMPLE ADVERBIALS

'a- 'e- 'i-:	away, out of sight (e.g., the sun sets, moves away out of sight)
ha-:	up, up out (e.g., climb up)
'ahá-:	apart, in half (e.g., cut in two)
'ada-:	downward from a height (e.g., descend)
ch'í-:	horizontally (e.g., carry outside)
na^1-:	around (e.g., walk around)
na^3-:	downward (e.g., get down)
ná^1-:	around (e.g., extend around)
ná^4-:	up from a surface (e.g., get up)

The English translations of these morphemes highlight their similarity to event endpoints and to English particles, which would correlate with their low position in the phrase structure. Other elements that can appear in Position 1 are shown in (35):

(35) Position 1 (cont.)

(i) Position 1d – null postpositions which co-occur with a object clitic and generally indicate a goal argument (e.g., hex (on him), poke (him), contact (him))

(ii) Position 1b – locations (e.g., into mouth, into hole, into field, into hand)

(iii) Position 1b – thematic elements, (e.g., die – to die; smoke – to smoke; mental – to think)

(iv) Position 1a – semeliterative (once again)

(v) Position 1d – reversionary (e.g., return, revert, put back)
(vi) Position 1c – reflexive which co-occurs with object agreement marker (e.g., shave self)

To understand these fully and place them in the context of the structure I am proposing would be a study in itself. A quick attempt at an analysis, however, leads me to posit that (i) and (ii) above are similar to the bound postpositionals of position 1b that we saw in (34), as they give an endpoint to the event. The thematic arguments listed in (iii), I would argue, are parallel to the inherent objects that are discussed in Section 6.7.2. Generally these would be an incorporated version of an English pair such as *to have a smoke* and *to smoke*. The last three are the hardest to account for, but (iv) and (v) could be argued to modify the core event. It would be interesting to see if they produce a restitutive reading in the sense of von Stechow (1995a), indicating the return to the state expressed by the core event. Finally, (vi) would have to indicate a process of low argument saturation. Here, it is interesting that the example given is a verb of grooming which in English is given a reflexive meaning when the object is dropped (and we will see in Section 6.3.2, that Tagalog marks such verbs lexically).

Now let us return to position 6. This position is predicted to contain elements that refer to the whole event, not just the endpoint. Young writes that "semantic identification is often difficult and quite speculative. There are possible 40 or more prefix constituents of position 6" (Young 2000: 32). He divides these into three subcategories. The first category marks transitional, semelfactive, and seriative aspect. The second category marks terminus or round shape. The third category is more complex. Some of the uses are as follows:

(36) Position 6
(i) thematic elements
a. movement of arms/legs (e.g., reach with hand, step into)
b. fire/light (e.g., to burn something, light shines through)
c. stomach/food/oral noise (e.g., belch, say)
(ii) co-occurs with a Position 1 downward prefix and acts as a unit meaning 'downward movement to a state of freedom'
(iii) inchoative (e.g., start to paint)
(iv) seriative (e.g., enter one after another)

The prefixes of type (ia) could be seen as being subject-oriented with possessor raising. An example that is given is 'I reached into it', which can be seen as a form of 'My hand went into it' or 'I went into it handwise'. Perhaps (ib) and (ic) could be analyzed similarly or as instrumentals. Again, much more work would have to be done to maintain a consistent analysis throughout. It is difficult to understand (ii) and Young himself admits to being tentative about

it. We will see that (iii) the inchoative is represented in V_1 in languages like Malagasy (discussed in Section 6.2.2). As for (iv), Slavic languages can express the seriative with preverbal *po-*. This meaning occurs only when *po-* is attached to a predicate which is already telic. A relevant example is given below, taken from Kozlowska-Macgregor (2002: 24, see also Kozlowska-Macgregor 2005).

(37) POLISH

Po-prze-czyt-yw-alam	wszystkie	jej	ksiazki[30]
COMPL-PERF-read-FREQ-PAST	all	her	books'

'I have read all her books occasionally one after another and right through.'

The 'right through' part of the meaning comes from the perfective preverb. The 'occasionally' part of the meaning comes from the frequentative suffix. The 'one after another' meaning comes from the completive *po-*. The main point of Kozlowska-Macgregor's paper is that the exact meaning of *po-* depends on what it has been combined with and in which domain it appears (within or external to VP). Her claim is that *po-* in the example above has been attached VP-externally. An alternative, however, is that *po-* is attached as a modifier on V_1, modifying the perfective preverb that I assume (see Section 8.2.2) is also in V_1.

The discussion above, while preliminary, is meant to show that details of the semantics of the various parts of the Navajo template correlate with appropriate parts of the event. In the end, what Navajo has shown us is that lexical entries can be spread across a word and interrupted by nonlexical aspectual material and agreement. We can account for this if we allow the V to have parts within it, as predicted in a VP shell analysis, and to also have (at least) one nonlexical head sandwiched between these shells. Further, the lexical material that we find in each of the parts should be restricted in terms of what it adds to the meaning of the root. We can account for these restrictions by aligning the lexical portions with syntactic heads that encode specific parts of an event.

3.2.3 Agreement in Tagalog

Returning now to Tagalog, and combining what we have seen about object movement and what we have seen about Inner Aspect, we can get further confirmation for the VP structure being proposed here from a subset of the subject agreement facts in Tagalog. There are two interesting features of subject agreement in Tagalog. One is that the agreement changes depending on whether the subject is the logical subject or the logical object. The other is that what has been called agreement with the logical object in subject position looks very

[30] I have presented the Polish example without diacritics as this is the way it appears in the source.

much like the imperfective (+incomplete) aspect marking that we have seen above.

When the Agent is the subject in Tagalog, the (optional) plural agreement marker is *pagsi-*. An example of this is given in (38) below.[31]

(38) AGENT SUBJECT AGREEMENT (*pagsi*)[32]

a. Kumakain na ang bata ng hapunan
AV.IMPERF-eat already NOM child ACC supper
'The child is eating supper already.'

a'. **Nagsi**si- kain na ang mga bata ng hapunan
AV.IMPERF.PL-eat already NOM PL child ACC supper
'The children are eating their supper already.'

b. Nangisda na si Ben
AV.IMPERF-fishing already NOM Ben
'Ben has already gone fishing.'

b'. **Nagsi-** pangisda na sina Ben
AV.IMPERF.PL-fishing already NOM.PL Ben
'Ben and the others have gone fishing.'[33]

When the subject is something other than the Agent, however, plural agreement is indicated through reduplication (data taken from Kroeger 1993: 25).

(39) THEME SUBJECT AGREEMENT (*pag* + reduplication)
Pinag**bu-bu**ks-an niya ang lahat ng mga bintana
PERF.PL-open-DV 3.SG.GEN NOM all GEN PL window
'She had opened all the windows.' all the windows = subject

For the purposes of this book, it is the reduplication form of subject agreement that is the more interesting. As we have seen earlier and, as exemplified in (40) below, reduplication is also used for progressive aspect (from Schachter and Otanes 1972: 67, glosses mine LDT).

(40) a. Nagluto ng pagkain ang nanay.
PST.*PAG*.cook *NG* food *ANG* mother
'Mother cooked some food.'

---

[31] The example shows a case where reduplication has scrambled away from the merged Aspect position. Examples (38a) and (38b) were provided by Raph Mercado. Example (38a') is from Kroeger (1993: 24). Example (38b') is from Schachter and Otanes (1972: 336).

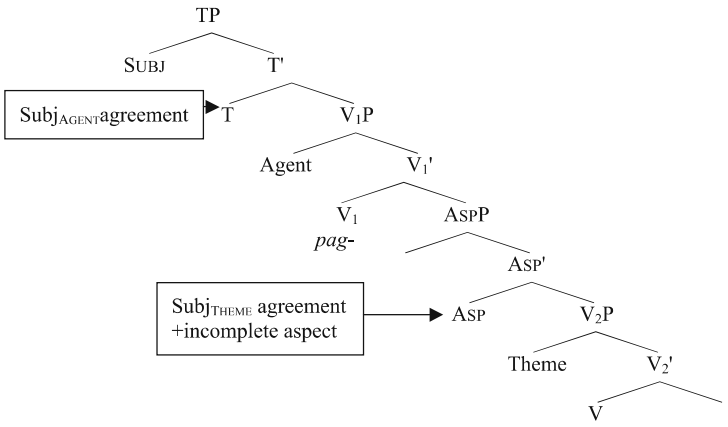
[32] I thank Raph Mercado for help with these data.

[33] Schachter and Otanes (1972) do not include 'already' in their translations.

b. Nagluluto ng pagkain ang nanay.
PST.*PAG*.**RED**.cook *NG* food *ANG MOTHER*
'Mother was cooking some food.'

We could say, then, that reduplication is represented in Aspect in both cases. This would explain why the logical subject does not show this type of agreement: it never passes through the Spec, Asp position triggering the reduplication. The two types of subject agreement are shown on the structure below.

(41)



Nevertheless, the reduplication that indicates plural objects is not the same as the imperfective reduplication since they can co-occur, as the example below shows (from Aspillera 1956: 143, glosses mine, LDT).[34]

(42) Plural agreement with [+INCOMPLETE] aspect
Pinagbíbibihisan ng katulong ang aking mga anak
n-pag$_{agr}$-red$_{asp}$-red$_{agr}$-bihis-an
PST-AGR-ASP-AGR-dress-TT *NG* maid *ANG* 1SG.POSS PL child
'The maid is dressing my children/My children are being dressed by the maid.'

[34] The [+incomplete] aspect appears outside of the plural marking, as the vowel length on the first CV in the triple CV sequence shows, though only some speakers produce the vowel length distinction. Vowel lengthening occurs with aspect reduplication and not with agreement reduplication. This ordering of affixes may indicate again that this is a case of Outer Aspect (progressive) having an effect on Inner Aspect.

While both Aspillera (1956) and Kroeger (1993) analyze this kind of reduplication as subject agreement, their analysis is not uncontroversial.[35] An alternative analysis would characterize the morpheme as a marker of iteration. An example with the iterative translation is given below.[36]

(43) Pinagbububukas ni Juan ang mga bintana
PERF.TT.RED.RED.open GEN Juan NOM PL window
'Juan opened the windows repeatedly.'

(44) Pinagsisisipa ni Diego ang mga bola
TT.RED.RED.kick GEN Diego NOM PL ball
'Diego kicked the balls repeatedly.'

It is clear that there is a connection between the two. As we will see in Chapter 8, one way of coercing a telic event to become a homogeneous event is by making it iterative. I leave an investigation of this for future research.

3.2.4 Summary

In this section, I have argued that there is an inflectional domain embedded within the VP, and it is the Spec of one of these categories that is the landing site for the derived object. Again, the arguments for the existence of such a domain have come from the order of elements, in this case morphemes. More data involving free-standing words, as well as other syntactic processes, will be provided in Chapter 6 to support this finding. The important observation from this section is that inflectional material may appear within what seems to be a lexical item. While this statement assumes a particular view of what a lexical item is that will be fleshed out in Chapter 6 the basic idea is that a lexical item can be made up of semiproductive bits, similar to verb particle constructions in English (*throw up, throw out, look up, look through*). Inflectional material appearing between these lexical parts is not surprising if one allows them to appear in different heads in a phrase structure and further allows inflectional heads to appear syntactically within this domain.

Having outlined my reasons for believing that there is an aspectual head within the VP, I will now turn to a different functional category that appears at the VP's outer boundary. I will eventually argue that these heads are of the same type in that they are both related to event structure.

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[35] I thank both Norvin Richards and Raph Mercado for discussion of this point.

[36] Thanks to Raph Mercado and Eden Mercado for these data.

3.3 Arguing for the Existence of Event[37]

Ever since Pollock (1989), it has been argued that there is a functional category between V and T. I investigate this particular head for two reasons. First, it will become important to later discussions about the boundary between the VP and the purely inflectional domain. The second reason is that this position has often been claimed to be where Aspect and/or the derived object appears. Since I have moved both Inner Aspect and the derived object to lower positions, it would be instructive to re-investigate this VP-external inflectional head.

Pollock's arguments for an inflectional head above V and below T come from apparent short verb movement of nonfinite lexical (as opposed to auxiliary) verbs in French. Using the placement of the negative marker *pas* and sentential scope adverbs, Pollock shows that finite verbs and infinitival verbs have a different surface position. Finite verbs appear before *pas* and adverbs, as shown below (Pollock 1989: 367).

(45) a. Jean (n') *aime* **pas** Marie.
Jean (*NE*) likes *PAS* Marie
'Jean doesn't like Marie.'

b. Jean *embrasse* **souvent** Marie.
Jean kisses often Marie
'Jean often kisses Marie.'

Infinitival lexical verbs, however, appear after *pas* (compare (46a) and (46b)) but before the sentential adverb, as in (46c) (Pollock 1989: 374, 378).

(46) a. Ne **pas** *sembler* heureux est une condition pour écrire des romans.
N*E PAS* seem$_{INF}$ happy is a condition for write$_{INF}$ DET novels
'To not seem happy is a condition for writing novels.'

b. * Ne *sembler* **pas** heureux . . .

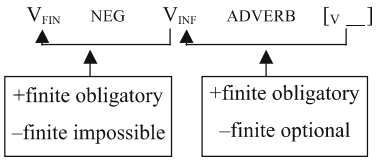
c. *Parler* **à peine** l'italien après cinq ans d'étude dénote
speak$_{INF}$ hardly DET Italian after five years DET'study indicates
un manque de don pour les langues.
DET lack P gift for DET languages
'To hardly speak Italian after five years of study shows a lack of a gift for languages.'

The claim, then, is that there is a syntactic head between the position of negation and the adverb. We do not have evidence of this position of short verb movement in the case of finite verbs since finite verbs obligatorily move to the higher head position. However, in their infinitival form, French lexical verbs

[37] Material in this section first appeared in Travis (1994).

can optionally move to this intermediate position.[38] This is shown schematically in (47).[39]

(47) FRENCH lexical verbs:

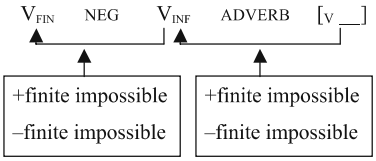


English lexical verbs, on the other hand, do not exhibit short verb movement with infinitivals, as we can see in the examples given below. The verb *seem* must appear after the negation in (48a, b) and the verb *speak* must appear after the adverb in (48c, d) (Pollock 1989: 376, 381).

(48) a. **Not** *to seem* happy is a prerequisite for writing novels.
b.* *To seem* **not** happy is a . . .
c. To **hardly** *speak* Italian after years of hard work. . ..
d.* To *speak* **hardly** Italian . . .

Given this, we can have a very simple English version of the schema presented in (47) for French. Basically, English lexical verbs do not move into this inflectional domain.

(49) ENGLISH lexical verbs:



The correlation between the two languages becomes more interesting, however, when we add the data concerning the position of the English infinitival marker *to*. While Pollock concentrates on the lack of verb movement in English infinitivals, we can add the observation that the position of short verb movement in French (between the negative marker *not* and sentential adverbs) is occupied by this marker in English.[40]

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[38] For the time being, I label the intermediate position V_{INF} for infinitival verbal forms.

[39] Pollock also discusses the position of French auxiliary verbs, but that discussion is not relevant here.

[40] The infinitival marker *to* can also appear in other positions as in *Not to seem happy* or *Hardly to seem happy*.

(50) ENGLISH: V_{FIN} NEG to_{INF} ADVERB [$_V$ __]
a. NOT *to* seem happy
b. *To* HARDLY speak Italian

In both French and English, then, there is evidence for a position between negation and certain adverbs. This position is targeted by the movement of infinitival verbs in French, and it is realized by the infinitival marker *to* in English.

There is general agreement that some functional category exists between V and T, but here I will concentrate more on what this category is and what its function is. To remain neutral concerning the label of the category, I shall simply refer to it as F. Eventually, I will label it E(vent) due to its importance in characterizing and outlining an event.[41]

3.3.1 Characteristics

I begin my investigation by reviewing some of the uses of this intermediate head position. I will argue that in the verbal domain, the position is tense-related. More particularly, it seems to be related to the lack of finite tense. I also suggest that markers in this position encode the realis/irrealis distinction. Since my main interest is in the syntactic uses of this position, I shall leave the details of its semantics quite vague. The goal is to give only an intuitive sense of a natural class of meanings that material in this position can provide.

3.3.1.1 Tense-Related Characteristics

In the data that we have been investigating, the F position is related to (the lack of) tense. As Pollock shows, in French, this position is linked in some way to the infinitival. While his evidence comes from the position of infinitivals through head movement, one could also argue that the infinitival morphology (or feature bundle) is actually generated in the position between V and T. Movement to this position could be triggered by the actual affix (or a relevant feature). Further, in a view in which morpheme order is determined through head movement (e.g., Baker 1988), phrase structure can be used to explain the morpheme makeup of the future and conditional tenses in French, where infinitival morphology appears between the V and tense/agreement morphology.

(51)

	V		F		T/agreement	
FUTURE:	parl	+	er	+	a	's/he will speak'
CONDITIONAL:	parl	+	er	+	ait	's/he would speak'

[41] See Duffield (2007), to appear for other uses of a projection similar to E in his analysis of Vietnamese.

infinitive	**parler**	**partir**	**prendre**
FUTURE	parler-ons	partir-ons	prendr-ons
CONDITIONAL	parler-ions	partir-ions	prendr-ions

As we can see in (51), the future and the conditional in French both include the infinitival marker chosen by the conjugation class of the verb, whether it is *-er, -ir*, or *-r*. I start with the assumption that this is not accidental and that the infinitival morphology indicates movement through a head linked to infinitival marking.

Using F for the morphological markers of infinitivals would also explain the positioning of the infinitival marker *to* in English. As mentioned above, *to* may be found in the same position as the moved infinitival verb in French. The infinitival marker in English is not a bound morpheme and it does not trigger movement of the verb to this position. There is no evidence, therefore, of short movement of lexical verbs in English. This construction, then, would parallel other cases where a head position is filled by a free-standing morpheme that prevents head movement to that position.

While it has often been assumed that *to* is generated in the same position as Tense, there is an additional argument to show that there is not just one position that marks both [+tense] and [−tense].[42] One position alone cannot explain the word order facts of the finite verb and *to* with respect to *not*. Where the finite verb must appear before *not*, *to* appears after *not*.[43] As (52d) shows, a finite verb will select for an empty-headed complement in English.

(52) V_{finite} NOT **to** (NOT) V
  a. *Not* **to** leave would be difficult.
  b. *J ohn *not* **will** leave.
  c. John **will** *not* leave.
  d. *John **will** *not* to leave.

The subjunctive in English may also be related to the position of short verb movement. It is certainly the case that subjunctives do not move to T. In (53), we can see that, while finite auxiliary verbs appear to the left of negation, subjunctive auxiliaries appear to the right.

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[42] Pollock suggests in his footnote (12) that *to* may be generated in Agr, his position for short movement. Laka (1990) proposes that Tense must c-command negation. Since *to* is [—tense], it may appear below negation. Baltin (1993) also discusses the position of *to* and provides interesting data concerning its position with respect to *not* and interactions with VP deletion. As Pollock writes in his footnote, "Needless to say, neither this proposal nor the one made in the text exhausts what has to be said concerning *to*" (Pollock 1989: 375).

[43] In some cases, *to* may appear before *not*, as in *To not leave would be difficult* but this may be the constituent negator *not*.

(53) a. Sally would prefer that I *not* **be** reading that book. SUBJUNCTIVE
a′. * Sally would prefer that I **be** *not* reading that book.
b. Sally said that I **was** *not* reading that book. INDICATIVE
b′. * Sally said that I *not* **was** reading that book.

When one looks at subjunctive auxiliary verbs with respect to sentential adverbs, the data are less clear. In fact, they are similar to the data for infinitival auxiliaries. Pollock argues that there may be short verb movement for auxiliaries in English. He gives the following examples.

(54) a. ?I believe John to be often sarcastic. (P: (39c))
b. *I believe John to sound often sarcastic. (P: (39d))
c. ?Peter is said to have seldom enough money. (P: fn. 18)
d. *Peter is said to make seldom enough money. (P: fn. 18)

To my ear, the subjunctive facts are similar.[44]

(55) a. ?Sally would prefer that I be often sarcastic.
b. *Sally would prefer that I sound often sarcastic.

In French and English, we have seen F used for infinitival marking; in English, it is arguably also used for positioning of the subjunctive. We can find data in other languages to show that morphology between tense and the verb might be mood-related. In Nahuatl (Mark Baker personal communication), the future morpheme (which can be used to designate future, subjunctive, infinitive, or the polite imperative) may co-occur with the tense morpheme, in which case the future morpheme occurs closer to the verb root.

(56) a. ni-cochi-z
1sS-sleep-FUT
'I will sleep.'

b. ti-cochi-z-que
1pS-sleep-FUT-PL
'We will sleep.'

c. **CONDITIONAL**
ni-quito-**z**-quia
1sS-say-**FUT**-PST
'I would have said.'

[44] Frankly, I have some difficulties in evaluating these data since I suspect that the adverb may be in some sense modifying the predicate that it precedes.

In (56c), we can see that this future morpheme is used much in the same way as the infinitival marker in French. Two more examples of a future morpheme appearing below tense are given in Cinque (1999: 59–60).

(57) Guyanese Creole (Gibson 1986: 585)
Jaan bin gu riid
John pst fut read
'John would have read.'

(58) Sranan (Seuren 1983: 227)
A ben o kan nyan
he pst fut can eat
'He would be able to eat.'

It appears, then, that future may appear in a position that is not tense; the effect is to make the mood of the clause irrealis.

What this evidence points to is the existence of a functional category between V and T that is used for verbal inflection that encodes infinitivals, subjunctives, and future; in the latter case, it gives an irrealis reading.[45]

3.3.1.2 Reference-Related Characteristics

Malagasy provides further evidence that F introduces verbal morphology that is different from and closer to the verb than tense. I have labeled it "reference-related" since the morphology under discussion in this section adds no tense-related meaning (i.e., realis/irrealis). Rather I see it as demarcating the edge of an event in a way that I hope will become clearer in Chapter 6. This discussion is in two parts: an analysis of the tense system of Malagasy and an analysis of the topic-marking system in the same language. In the end, each provides support for the other.

Malagasy, as we have already seen in Section 2.5.3, may make a variety of DPs subject by changing the topic morphology on the verb. In Malagasy, there are basically three paradigms, one which makes the highest theta-role in the theta hierarchy the subject (Actor Topic), one which makes the second theta-role the subject (Theme Topic), and one which makes other arguments such as the benefactive, instrumental, location, etc., the subject (Circumstantial Topic). When one looks at the tense system of Malagasy across the topic-marking paradigms, the present tense Actor Topic form appears to be inconsistent.

[45] It may be that all future elements are generated in this position and that, when the clause is anchored to the present, we get the "pure" future meaning (see Baker and Travis 1997 for some views on this).

(59)

	Actor Topic	Theme Topic	Circumstantial Topic
PRESENT	*m-*	0	0
PAST	*n-*	*no/n-*	*n-*
FUTURE	*h-*	*ho/h-*	*h-*

In (59) above, we can see that past and future tense are similar in all topic forms.[46] The present tense, however, has no overt morphology in two of the topic forms, Theme Topic and Circumstantial Topic, but is realized as *m-* in the Actor Topic form. As a first step in reanalyzing the morphology of Malagasy, I will follow a suggestion by Hung (1988) that the present tense is always indicated by a zero morpheme. The *m-*, then, is part of the Topic morphology for Actor Topic and not part of the tense paradigm. This *m-* deletes when it is preceded by another consonant, as in the past and future tenses. The revised morphological system for tense, then, would be the more consistent one given below.

(60)

	Actor Topic	Theme Topic	Circumstantial Topic
PRESENT	0	0	0
PAST	*n-*	*no/n-*	*n-*
FUTURE	*h-*	*ho/h-*	*h-*

Now we turn to the specifics of topic morphology, where again I draw heavily on the work presented in Hung (1988). Here we note, first, that *m-* is in complementary distribution with *-na* and, second, that the other morphemes that appear in the topic paradigm have independent functions.

(61) $\sqrt{}$*foha* 'wake up'

Actor Topic	Theme Topic	Circumstantial Topic
***m-an*$_1$-$\sqrt{}$**	**$\sqrt{}$-*na***	***an*$_1$-$\sqrt{}$-*CV*-*an*$_2$-*na***
mamoha	fohazina[47]	amohazana
m-an-$\sqrt{}$*foha*	$\sqrt{}$*foha-CV-na*	*an*$_1$-$\sqrt{}$*foha-CV-an*$_2$*-na*

As we will see below, prefix *an*$_1$ serves as a transitivizing morpheme parallel to *pag-* in Tagalog, and will be discussed at greater length in Chapter 6. Suffix *an*$_2$ indicates the preposition incorporation that occurs in the formation of

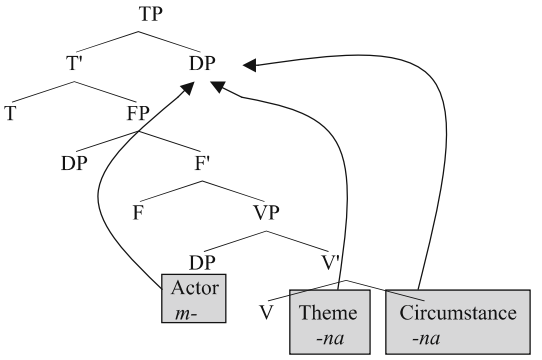
[46] Rajemisa-Raolison (1971: 100) suggests that the appearance of *no-* or *ho-* rather than *n-* or *h-* is conditioned by stress rather than topic choice. I leave this for future work.

[47] Often some idiosyncratic CV sequence is added to the root of the verb before any suffixes are added. In this case, the CV sequence is *zi* (see Erwin 1996 for an analysis of the different realizations of the CV sequence). There are other passive (i.e., Theme Topic) forms in Malagasy that will not be discussed here: root, *voa-*, and *tafa-* passives. These will be discussed in Chapter 7.

Circumstantial Topic constructions.[48] This leaves *m-* and *-na* unexplained. Because they are in complementary distribution, Hung assumes that they are generated in the same position. Given that the *m-* occurs between tense (as argued above) and V_1 (which is where an_1 would be generated), I will assume that *m-* and *-na* are generated in F.[49] Two questions remain: (i) What does F do in this case? (ii) Why are there two different realizations of this form? I will address the second question in the following section, and save the first, larger, question till Section 3.3.2.

Hung (1988) proposes that the difference in realizations of F is due to the difference in its case-checking properties. The tree in (62) indicates what topic morphology means in terms of syntax. When there is Actor Topic morphology on the verb, the DP generated in the Spec, VP moves to Spec, TP. When Theme or Circumstantial Topic morphology appears, it is an element within the V' that moves to Spec, TP.[50]

(62)



Another way of looking at this with respect to the distinction between *m-* and *-na* is that, when *m-* appears, there is movement from Spec, VP, and when *-na* appears, there is no movement from Spec, VP. Given that movement to Spec, TP is assumed to be licensed by Case, the conclusion Hung draws is that *-na* is responsible for checking the Case of the element in Spec, VP. Since *m-* cannot check case, the external argument in Spec, VP is forced to check its case in Spec, TP. Looking at the tree in (63) below, we see that *m-* and *-na* are both generated in F. *-na* is responsible for allowing the contents of Spec, VP to remain in situ. Depending on other verbal morphology (for instance, whether there is P-incorporation or not), either the Theme or a Circumstance will move

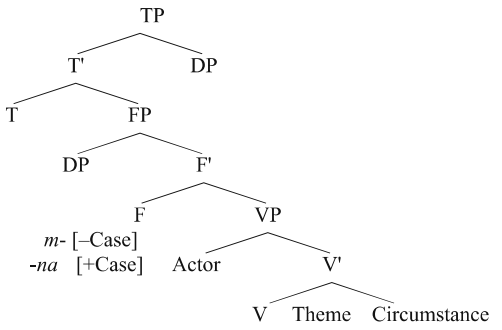
[48] There are instances where this morpheme appears and yet no obvious preposition has been incorporated (e.g., Paul 2000: Section 4.3 for a discussion). I leave this issue aside for now, tentatively assuming the existence of a zero preposition.

[49] I assume that Tagalog *m-*/*-um-* has the same analysis as Malagasy *m-*.

[50] Here I use a simple VP structure, as it is sufficient for the present purpose.

to Spec, TP. If *m-* is generated in F, then the contents of Spec, VP will move to Spec, TP to be licensed.

(63)



The position and realization of these morphemes, then, finds some support. Since F is the closest functional category to Spec, VP, the claim that they have a licensing relation to this position has at least intuitive appeal. Further, the distinction between *m-* and *-na* can be linked to the difference in whether the contents of Spec, VP is licensed in situ.[51]

Now we turn to the larger question: what is the function of F in terms of interpretation? We have seen above that one use of F is for verb-related morphology that is not tense. It may be used for infinitival marking (French and English), subjunctives (English), and DP-licensing morphemes (Malagasy). Further, this projection can be selected specifically, in particular by causatives. In English, we could posit that the causative *make* (as opposed to *have*, see Ritter and Rosen 1993) selects FP. This is clearest in the passive, where the infinitival marker in F appears.[52]

(64) a. The parents made the children go to bed early.
b. The children were made *(to) go to bed early.

The morphology of Malagasy provides better support for the hypothesis that certain causatives select FP. Hung (1988) argues that, while there appear to be two different causative morphemes in Malagasy (this will be discussed in much more detail in Chapter 6), these two morphemes can, in fact, be viewed as one, if

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[51] Depending on which Case framework is being used, further details must be worked out. I will assume here that there is an AGREE relation, as in Chomsky (2000), between F and Spec, VP. It must have the effect of allowing this DP to stay in situ and another lower DP to move to Spec, TP.

[52] I have no explanation for the disappearance of *to* in (64a). Fabb (1984: 71–72) ties verbal morphology to verbal case and notes that the morphology is unnecessary when the matrix verb is active and can assign case. It would be interesting to apply his observation, recast within the Minimalist Program, to account for the data in (64).

it is assumed that the morpheme can appear in different positions in the phrase structure and that this difference in position accounts for the difference in realization.

Let us see how this works. One causative (a lexical causative) is the transitivizing affix that was mentioned briefly in the section above. There are many instances of the alternation, one of which is given below, where the verb with an *i-* prefix is an unaccusative and the verb with the *an-* prefix is a transitive. Hung proposes that *an-* adds Case and an Agent.

(65) TRANSITIVIZING (LEXICAL CAUSATIVE) PREFIX: **an-** (vs. *i-*)

a.	m**an**ala	'to take X out'
	m-an-$\sqrt{}$ala	
b.	miala	'to go out'
	m-i-$\sqrt{}$ala	

The productive causative morpheme in Malagasy is *-amp-* and, like most causatives, it also adds an Agent and Case.

(66) PRODUCTIVE CAUSATIVE PREFIX: **amp-**

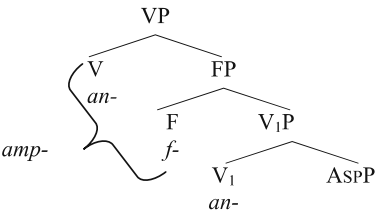
a.	manala	'to take X out'	m**amp**anala	'to cause Y to take X out'
			m-amp-an-$\sqrt{}$ala	
b.	miala	'to go out'	m**amp**iala	'to cause Y to go out'
			m-amp-i-$\sqrt{}$ala	

Given the similarity in form and function of *amp-* and *an-*, Hung reanalyzes *amp-* as *an-* plus *f-*. The transitivizing *an-* would be generated in the highest V within a Larson-type structure, as we have seen for Tagalog *pag-* in Section 3.2.1.[53] In this position, it would be responsible for both the external argument, and the accusative case. But *an-* can also be a productive causative, selecting an FP. The morpheme *f-* generated in F will follow the productive causative *an-* but not the transitivizing morpheme *an-*, accounting for the difference in realization. In the end, there is one *an-* morpheme that has a single function, but its realization varies depending on whether it is generated as head of the complement of F or the selector of F, as shown in the trees below. Tree (67a) shows the productive causative *an-*, which selects FP and therefore is followed by the

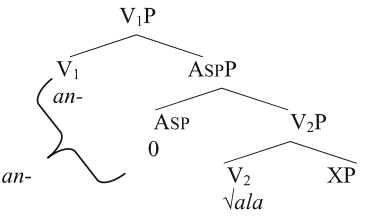
[53] Other linguists working on Malagasy have interpreted productive causatives as having complex morphology, but none, to the best of my knowledge, in exactly the way Hung has. For example, Malzac (1908: 15) analyzed *mampanoratra* as *man+pa+noratra*. He did this to make it more similar to the Tagalog *pag+pa*. This analysis misses the point, however, since the nasal at the beginning of the root *soratra* is not explained. Furthermore, there is only one instance of the morpheme *(m)an-*. In the analysis presented here, the morphological decomposition would be *m+an+f+an+soratra*.

morpheme *f*-. This results in the complex morpheme *an-f-* (*amp*-).[54] Example (67b) shows, using the Inner Aspect structure proposed here, the lexical causative structure, which selects AspP and is selected by FP. Since the Asp morpheme is zero in this case, the causative morpheme remains *an*-.

(67) a. PRODUCTIVE CAUSATIVE



b. TRANSITIVIZER (LEXICAL CAUSATIVE)



At this point of the discussion, the important thing is that the productive causative and the lexical causative are created by the same morpheme and that the apparent difference between the productive causative (*amp*-) and the lexical causative (*an*-) is due to an additional morpheme (*f*-) that appears between the productive causative and the stem to which it attaches. Furthermore, this morpheme is parallel to *to* in English causatives, which also occurs in F. In Chapter 6, there is more discussion of the differences in behavior between the two causatives.

We have seen a bit of what F can do and where it is, but the question remains as to exactly what its function is. This, in some sense, reduces to the function of an infinitival marker, or the subjunctive, or the difference between the French imperfect (*parlait*) and conditional (*parlerait*). These questions will be addressed in the next section.

3.3.2 The Function of F

Among syntacticians working within the Principles and Parameters (pre-Minimalism) framework, there is a fairly broad consensus that there is a functional category between T and V. Recently, there has also been some convergence as to what this category is. Below, I trace some of the history of this category and present some of the rationalizations that have been provided for its labeling.

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[54] Hung posits *f*- rather than *p*- because *f*- is a common reference-related morpheme—one that is used, for example, to form deverbal nominals. There is a regular phonological change in Malagasy whereby a continuant becomes a stop following a nasal. This is discussed in more detail in Section 6.2.2.

3.3.2.1 Previous Characterizations

Pollock (1989) labeled the category that acted as the landing site for short verb-movement AGR. Previous to his work, INFL was the only functional category posited between C and V; it was used to encode both tense and agreement. Given this background, it made sense to split the two functional jobs between the two functional categories that were independently shown to exist through the verb movement facts given in the introduction to this section. As well, since finite verbs tend to undergo long verb movement and nonfinite verbs tend to undergo short verb movement, it made sense to label the higher category TENSE and the lower category AGR(eement). Pollock's other argument for labeling the lower category AGR came from his proposed parameter, which linked the lack of even short verb-movement in English to its weak agreement system.

Chomsky (1991: 434) relabeled the lower functional category AGR_O, and introduced a third functional category above Tense, namely AGR_S. His argument for this modification was that subject agreement tends to be above tense, as determined by morpheme order (see also Belletti 1990). If there were an agreement category below TENSE, therefore, it was most likely responsible for object agreement. "These conflicts might be reconciled by noting that there are actually two kinds of Verb-NP agreement: with subject and with object. . . . On general assumptions, AGR-O should be close to V, and AGR-S close to the subject" (p. 434). Chomsky notes that while this solves a problem raised by Pollock, it has problems of its own. "It would then be unnecessary to suppose that infinitives necessarily carry (generally vacuous) subject-agreement, though we would now be assuming that AGR-O is present even for non-transitives" (p. 434).

Since the existence of AGR heads has been called into question on conceptual grounds, however, the label for this functional category has also been questioned.

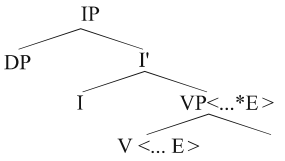
3.3.3 F Binds Event "Theta-Role"

Here I suggest an alternative to viewing this category as AGR, and one that makes just as much functional sense. Higginbotham (1985) proposes a third use for INFL—as a theta-binder. In his system of theta-role discharge, theta-binding is one of four possible ways of discharging a theta-role and it occurs when INFL theta-binds the E(vent) theta-role of the verb, and D theta-binds the R(eferent) theta-role of the N.[55] ". . . we can conjecture that the position E of the thematic grid of the verb is discharged at the point where VP meets INFL. The

[55] In Higginbotham's (1985) article, the determiner was assumed to be in the specifier position of NP. With revised phrase structure, the parallel between INFL and DET is much clearer. The notion of R as Referential is taken from Williams (1981).

interpretation is existential generalization over the E-position, as in Davidson (1966): hence, it is a form of theta-binding" (p. 561). This theta-binding is shown in the tree in (68), using Higginbotham's notation.

(68)



This is the function of F that I will espouse, and for that reason I will label F as E(vent).[56] What this means for the conclusions already reached here is that infinitival and subjunctive morphology is generated in E and, at the very least, binds the E theta-role in V. In Malagasy, both *m-* and *-na* bind the E theta-role, and *-na*, in addition, is able to license a DP. Causatives that occur above E, such as *make* in English and what is realized as *amp-* in Malagasy, specifically select a fully saturated event (i.e., a VP which has discharged its E theta-role).

I also argue that we can see the effects of the theta-binding of E. E and Asp are of the same type. Each selects a VP and binds an event-type theta-role in the head V. Where the form of Aspect affects the telicity of an event (targeting the endpoint), Event has scope over the whole event. E is used for the realis/irrealis distinction. It also takes on some referential force, like its nominal counterpart R. The realis/irrealis distinction could be argued to account for the subjunctive use of E. The referential use of E shows up in the causative construction where, as argued by Ritter and Rosen (1993), *make V* constructions encode two events while *have V* constructions encode only one.[57] E is the obvious place to encode irrealis mood, creating a complete system along the lines of Cinque (1999). In Cinque's hierarchy, $\text{Mood}_{\text{irrealis}}$ is sandwiched between Tense-related heads and Aspectual-related heads. This correlates with the tree I am proposing, where T represents Tense, E irrealis mood, and Asp Aspect, but I leave the detailed working-out of this idea to future research.

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[56] Stowell (1995) proposes a Z(eit) Phrase, which like E, theta-binds the event theta-role introduced by the V. Thus, ZP and EP, are similar in some respects. They are different enough, though, to assume that they represent two very different proposals. ZP is much more like a Tense phrase in that it orders events. I assume that EP does not have that role. Harley (1995) also proposes an Event Phrase but hers, in introducing the external argument, is much closer in function to my V_1. Carstens and Kinyalolo (1989) relabel this intermediate functional category Asp(ect).

[57] I have no account of *have*, though I would be tempted to generate it in E and have it act as a higher version of the *ha-*/*ka-* Malagasy/Tagalog morpheme discussed in Chapter 7. Much of the literature on lexical causatives points to the observation that, unlike productive syntactic causatives, they encode just one event (see Fodor 1970; Shibatani 1972, 1976). This is discussed more in Chapter 6.

3.4 Partial A-Movement

Having set up the whole phrase structure, now, where VP has an internal inflectional domain, I return to the problem of N3 languages. I propose that N3 languages use this VP-internal inflectional domain in a way that overtly indicates its function as a landing site for A-movement. In this section, I argue that the N3 order is created by partial A-movement, parallel to partial A-movement in languages like German.

To start the discussion, I will present Cheng's (2000) analysis of partial WH-movement, which I use as a starting point for my account of N3 languages.[58] Below, we see an example of partial WH-movement in German. In (69a), the WH-element, in this case a PP, has moved to the matrix COMP; (69b) is an example of partial WH-movement where the WH-element has moved only to the intermediate COMP position (Cheng 2000: 78, taken from McDaniel 1989: 569).

(69) a. [$_{CP}$ [$_{PP}$ **Mit** **wem**]$_i$ glaubt [$_{IP}$ Hans [$_{CP}$ t_I daß [$_{IP}$ Jakob jetzt t_i spricht]]]]
with whom thinks Hans that Jakob now talks

b. [$_{CP}$ Was$_i$ glaubt [$_{IP}$ Hans [$_{CP}$ [$_{PP}$ **mit** **wem**]$_i$ [$_{IP}$ Jakob jetzt t_i spricht]]]]
WH thinks Hans with whom Jakob now talks
'With whom does Hans think that Jakob is now talking?'

There are two important observations to make. First, when the WH-phrase has not moved to the scope-bearing COMP, the path between the WH-word and the scope-bearing COMP is marked by WH-COMPS. This is shown in (70) below. Example (70a) shows full WH-movement. Here the intermediate COMPS are marked −WH by *daß*. The sentence in (70b) shows partial movement with the appropriate WH-COMP, *was*, along the path, while (70c) shows that the use of *was* is obligatory.[59]

(70) a. [$_{CP}$ [$_{PP}$ **Mit** **wem**]$_i$ glaubst [$_{IP}$ du [$_{CP}$ t_i daß [$_{IP}$ Hans meint
with whom believe you that Hans thinks
[$_{CP}$ t_i daß [$_{IP}$ Jakob t_i gesprochen hat]]]]
that Jakob talked has
'With whom do you believe that Hans thinks that Jakob talked?'

[58] I pick Cheng's presentation of the facts not because I will necessarily use the details of her account but just to set up the comparison. This construction is often called WH-scope marking in the current literature (I thank a reviewer for pointing this out). I prefer the label *partial WH-movement* as it focuses on the part of the construction that interests me——the movement of the lower WH-XP. Many other have worked on this construction. Among them are Dayal (1994, 2000), Fanselow (2006), Fanselow and Mahajan (2000), Lipták (2001), and Bruening (2004). A good overview of the issues is presented in Lutz et al. (2000).

[59] The ungrammaticality of (70c) seems to be dialectal. I would assume that the dialect variation is a superficial one involving morphological representations of features.

b. [$_{CP}$ Was$_i$ glaubst [$_{IP}$ du [$_{CP}$ ***was$_i$*** [$_{IP}$ Hans meint
WH believe you **WH** Hans thinks

[$_{CP}$ [$_{PP}$ **mit** **wem**]$_i$ [$_{IP}$ Jakob jetzt t$_i$ gesprochen hat]]]]
with whom Jakob now talked has

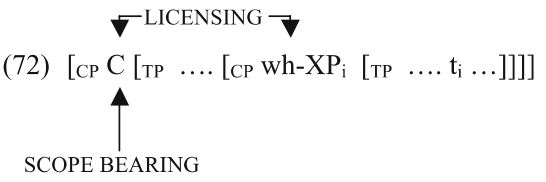
c. * [$_{CP}$ Was$_i$ glaubst [$_{IP}$ du [$_{CP}$ ***daß*** [$_{IP}$ Hans meint
WH believe you **that** Hans thinks
[$_{CP}$ [$_{PP}$ **mit** **wem**]$_i$ [$_{IP}$ Jakob jetzt t$_i$ gesprochen hat]]]]
with whom Jakob now talked has

In addition, while the WH-phrase need not make the full movement, it may not remain in situ. As (71a) shows, WH-in-situ may be licensed by a full WH-phrase in the scope-bearing COMP. Such licensing is not possible, however, with the bare scope marker *was,* as we can see in (71b).[60]

(71) a. Wann$_i$ glaubst [$_{IP}$ du [$_{CP}$ daß [$_{IP}$ Hans an welcher Universität
when believe you that Hans at which University
studiert hat]]]
studied has
'When do you think that Hans has studied at which university?'

b. * Was$_i$ glaubst [$_{IP}$ du [$_{CP}$ was$_i$ [$_{IP}$ Hans meint [$_{CP}$ was$_i$ [$_{IP}$ Jakob
WH believe you WH Hans thinks WH Jakob
[$_{PP}$ mit wem]$_i$ gesprochen hat]]]]]
with whom talked has
'With whom do you believe that Hans thinks that Jakob has talked?'

Schematically, partial WH-movement has the following representation.



Cheng accounts for these data via cyclic WH-feature movement, a theoretical possibility discussed in Chomsky (1995). However, Chomsky (2000) backs away from this possibility and proposes that constructions that appear to make use of feature movement are, in fact, cases of AGREE, a relation between a probe (C) and a goal (WH-XP). AGREE is a relation that is constructed before movement occurs.

[60] (71a) comes from McDaniel (1989) via Cheng (2000: 80). I have changed the gloss of *glaubst* to be consistent with the data provided by Cheng.

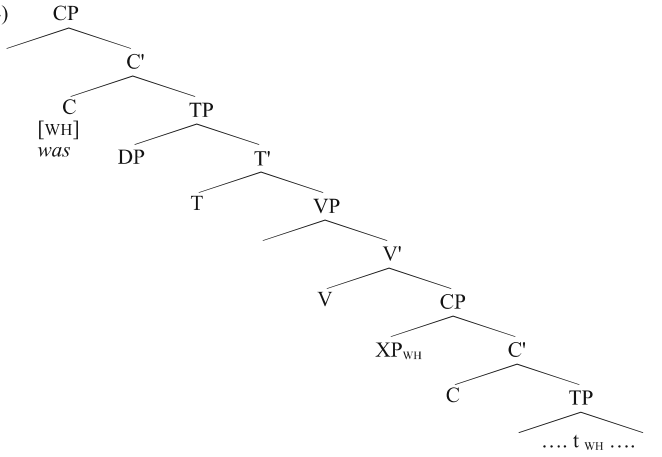
Whether partial movement is accounted for through movement of features or via AGREE, I propose that the same mechanisms can be used to account for the N3 language facts that were introduced in Section 2.5.3. Just as A'-movement occurs through intermediate A′-positions, A-movement occurs through intermediate A-positions. Just as A′-movement can stop in a position below the intended landing site, so can A-movement. We can see this partial movement in languages such as Kalagan and Limos Kalinga, where the element that behaves like the subject in other Western Malayo-Polynesian languages remains in a derived position below the merged position of the external argument. A relevant example and schema are given below.

(73) a. Pagkamang$_k$ [$_{V1P}$ aku **ya lata**$_i$ [$_{V2P}$ sa tubig V_k t_i kan Ma']]
IT-get I can water for Father
'I will get the water with the can for Father.'

b. V_k [$_{V1P}$ Agt **Subject** [$_{V2P}$ Theme V_k t_i XP]]

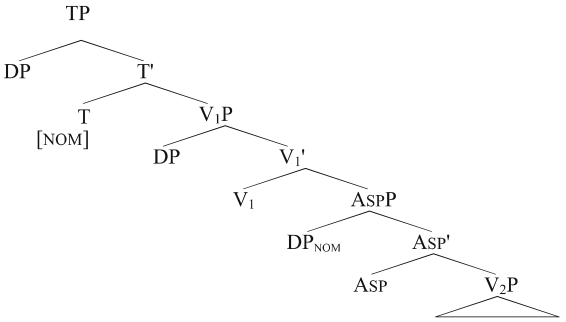
Note that the subject/topic *ya lata* 'the can' is neither in its merged position (following the Theme) nor in the Spec, TP position (which I assume to be immediately following the verb in a VSO language). Rather it appears in a position between the Agent *aku* 'I' and the Theme *sa tubig* 'water'. At this point, let us note the similarities between partial WH-movement and N3 constructions. In each case, a feature of a higher inflectional category is checked by an element that has moved to the Spec of a lower related inflectional category. In the case of partial WH-movement, a morphological realization of the WH-feature comes in the form of *was* appearing in the scope bearing COMP position as well as other COMP positions along the path. The actual WH-phrase appears in a lower Spec, COMP position, presumably checking a feature in this position. In other words, we have a WH-XP appearing in a COMP that would otherwise be −WH. This is shown schematically in (74) below.

(74)



Because of the similarities between partial WH-movement and the facts of N3 languages, I propose a similar account. Now the relevant feature is NOM, and the relevant XP is the nominative DP (the Subject/Topic). The relevant inflectional categories are T, the head that usually bears NOM, and ASP, the head that usually bears ACC.[61]

(75)



A nominative XP appears in a position within the VP—the position to which accusative is normally assigned.[62] Now we can see how the N3 word order comes about. The verb moves to some functional head outside of the V_1P. The external argument remains in Spec, V_1P and the third element will be the Nominative DP.[63]

3.5 Conclusion

The purpose of this chapter was to provide labels for various event-related categories, in particular Inner Aspect and Event. Inner Aspect is particularly important as it is an inflectional category within the lexical domain of the VP. Morpheme orders in Tagalog and Navajo showed how the phrase structure proposed accounts for the interleaving of lexical and inflectional material. Event Phrase was introduced as a higher parallel to Inner Aspect. Just as Inner Aspect is an event-related category at the edge of V_2P, Event is an event-related category at the edge of V_1P. Event will become more important in Chapter 6 as a marker of the event (and perhaps phase) edge. Before examining that process, however, I will explore the relationship of the two topics we have just discussed—derived objects and Inner Aspect.

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[61] As expected, the external argument will move to Spec, TP when it itself is the Subject/Topic giving a VSO order.

[62] This mechanism could be used to explain other constructions where a NOM XP appears within the VP such as psych predicates in languages like Italian and Icelandic. I leave this for future research.

[63] There is a significant problem with this view that is raised in the Bare Phrase structure/Minimalist framework. Movement to a low Spec cannot be triggered by a feature that is introduced into the structure later. Whatever technology allows intermediate WH-movement should be able to allow intermediate DP-movement.

Chapter 4
Event Structure and Phrase Structure

4.1 Introduction[1]

In the previous chapters, we have seen some syntactic and morphological arguments for an articulated VP structure. In this chapter, I investigate what parts of semantic structure—in particular event structure—can be mapped onto the parts of the VP. I have been calling the nonlexical category within the VP Aspect mainly because of its use in Tagalog for the reduplicating morpheme, which is involved in that language's aspectual system.[2] It is also used to host aspectual notions such as iterativity and distributivity in Navajo. However, we have also seen this category used for elements that are less obviously related to aspect such as accusative case marking and object agreement. In the interest of determining how (well) the articulated VP fits into semantic notions, I will now look more carefully at uses of Inner Aspect.

I shall begin the chapter by providing a brief overview of some treatments of event structure and VP structure over the past 40 years in order to show how simplifying representation in the semantic component while enriching structure in the syntactic component allows for a more straightforward mapping from one to the other. The mapping of certain semantic components of event structure to the syntactic structure has become an active subdomain of syntax in the last 20 years, and especially in the last decade. I present my own view in Section 4.4.3 of this chapter. My claim is that the components necessary to compute the Vendler predicate classes are represented in a predictable way in the configuration and features of phrase structure. Importantly, I restrict the representations to syntactically relevant information. While there may be some variation from

[1] This chapter uses material from Travis (2000a).

[2] In the discussion of aspect in Tagalog in Chapter 3, we saw that the position of this reduplicative morpheme is a bit problematic as its meaning appears to be more closely associated with Outer Aspect. I will give other examples of morphemes in this position that are more clearly associated with Inner Aspect in Chapter 7. In Chapter 3, I proposed that the appearance of reduplication within the VP occurs via coercion (for details on coercion, see Chapter 8).

L. deMena Travis, *Inner Aspect*, Studies in Natural Language and Linguistic Theory 80, DOI 10.1007/978-90-481-8550-4_4,

language to language of the type discussed in Chapter 8, I intend that the conclusions I reach should be applicable to all languages.

4.2 Preparing the Ground

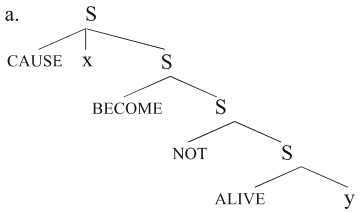
The structure of events has long been considered the domain of philosophers and semanticists. It has generally been assumed that any level internal to a verb is outside the domain of syntax. Even when a phrase structure was proposed to represent subeventual structure, the framework was called Generative Semantics (e.g., McCawley 1968, 1972). More recently, however, syntacticians have suggested that lexical semantics interacts with purely syntactic structure. I outline below how this came to pass.

4.2.1 Semantic Decomposition

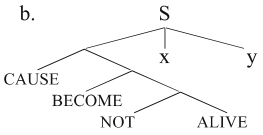
Without giving a detailed view of the road from the phrase structure of Generative Semantics through pure semantics and back to a syntactic account of subeventual structure, I point to some developments that might explain why the intersection of semantic interests and syntactic interests occurred when it did.

Within the Generative Semantic framework, McCawley (1968) proposed that *kill* be represented as in (1a) below. The structure in (1b) shows what the representation would look like after Predicate Raising and before lexical insertion (1968: 73).

(1) a.



b.



Kill is seen as being composed of several primitive predicates. These predicates combine into a semantically larger predicate presyntactically via a syntactic-like rule of predicate raising. Once this composition has occurred, the lexical item meaning CAUSE BECOME NOT ALIVE, that is, *kill*, can be inserted. In a well-known series of debates, syntacticians from the interpretivist school

argued that this level of structure should not be considered to form any part of syntax. Rather, the primitive predicates that made up the meaning of a verb such as *kill* belonged to the autonomous domain of semantics.

Dowty (1979) translates many of the observations of the Generative Semanticists into Montague's semantic framework, again using predicates such as CAUSE and BECOME. His representation of a (nonintentional) agentive Accomplishment as in *John broke the window* is given in (2) below (1979: 124). A DO-ing event causes a BECOME-ing event.

(2) $[[\text{DO}\ (\ \alpha_1,\ [\pi_n\ (\ \alpha_1,\ldots,\alpha_n\ )\ ])]\ \text{CAUSE}\ [\ \text{BECOME}\ [\ \rho_m\ (\beta_1,\ldots,\beta_m\ )\ ]]]$

There is no associated syntactic structure (although, of course, some translation could be made from the brackets). Furthermore, there are no quasi-syntactic rules like predicate raising to form a transitive verb such as *break*. At this point, the representation makes no claims to syntactic representation or processes.

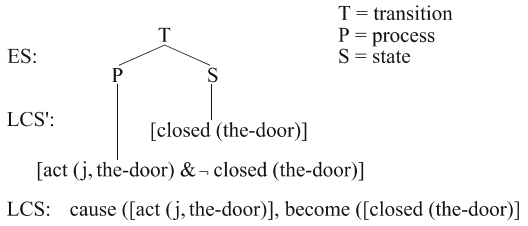
The representations of Parsons (1990) encode a view of "subatomic semantics" that follows the tradition of Dowty and the Generative Semanticists, again using predicates such as CAUSE and BECOME. The verb *close* as in *Mary closes the door* would, in fact, contain two events and one state, as shown in (3) (1990: 120).

(3) (e) [Cul (e) & Agent (e,x) & (e′) [Cul(e′) & Theme(e′,door) & CAUSE(e,e′) & (s) [Being-closed(s) & Theme(s,door) & Hold(s) & BECOME(e′,s)]]]

Here there is a culminated event, e, which introduces the Agent, another culminated event, e′, which introduces the Theme and is caused by e, and a final state of being closed, which is true of the Theme and is reached from e′. This representation contains not only the familiar primitive predicates, but also representation of subevents in the form of e, e′, and s.

Pustejovsky (1991) also presents the subparts of events using predicates such as CAUSE, ACT, and BECOME. However, these predicates are mapped onto a level called Event Structure, which contains only types of events. He then explicitly separates the semantics of the predicates from the representation of subparts of events. His representation of *John closed the door* is given in (4) below (Pustejovsky 1991: 58).

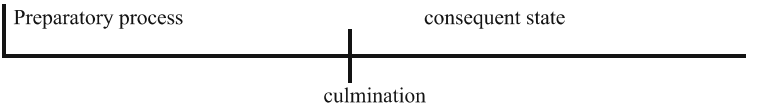
(4)



Within Pustejovsky's level of representation, there is the level of the Lexical Conceptual Structure (LCS), which is much like the semantic representations of Dowty and Parsons. This level maps to another level, LCS′, which pulls the LCS apart into two subevents, one of which causes the other. The first one is a process of an action and the state of the door not being closed. This event is followed by the state of the door being closed. At the level of Event Structure (ES), all that is represented is the process (P) followed by a state (S); together, these form a Transition (T).

Moens (1987) also represents event structure in such a way that events are reduced to linguistically relevant elements.[3] The nucleus of event structure is given in (5) below (Moens 1987: 47).

(5)



Moens uses this nucleus to represent the Aktionsart of predicates. Like Pustejovsky, he views Accomplishments (culminating processes, in his terms) as constituting a process followed by a state. As will become important to my representation later, he also represents the culmination point separately.

By focusing on these representatives of the investigations of event structure, we can see a line of development that moves from a rich syntactic representation of meaning (as in Generative Semantics), to a rich semantic representation of meaning (Dowty), to a representation of meaning that clearly outlines the contribution of event structure by introducing the event variable e (Parsons), to a representation that separates the event structure information from other aspects of meaning (Pustejovsky). As we will see in what follows, by allowing some of the richness of meaning to stay within the domain of semantics, and extracting that which is particular to event structure, we might return to a version of Generative Semantics that allows syntax to encode some meaning without running into the problems that arise when one tries to encode all of meaning in syntax.

At the same time as the semantic representations of events developed, changes were being made in the structure of the VP. These parallel changes made the interaction between the semantics of event structure and the architecture of the VP more obvious. As the semantic representations developed a structure that was less rich, the syntactic representations developed a structure that was less impoverished. In the next few sections, some of the crucial phrase structure developments are discussed, in particular VP-internal subjects (e.g., Kitagawa 1986; Fukui and Speas 1986; Kuroda 1988; Koopman and Sportiche

[3] I thank Brendan Gillon for bringing this work to my attention and discussing it with me.

1991), and VP shells (Larson 1988). In some sense, the verb is seen to be made up of verb segments in the tree. Interestingly, the subparts of the verb correspond, in some languages, to morphemes. Further, these morphemes often reflect semantic subparts of an event. Therefore, while the discussion of the existence of subparts of events had largely been kept within the disciplines of semantics and philosophy, there is evidence that natural language encodes subeventual structure morphologically and syntactically (also discussed in the era of Generative Semantics in, for example, McCawley 1968; Morgan 1969). Though the main goal of this chapter is to argue that an articulated VP structure reflects event structure, there is the secondary goal of showing that, by combining information from syntax, morphology, and semantics, one can gain a clearer idea of exactly how natural language encodes subeventual structure.

4.2.2 Syntactic Articulation

While the semantic representation became more streamlined, the syntactic representation of the predicate, in the form of the VP, became more fine-tuned. Below we see two ways that the VP structure became more detailed.

4.2.2.1 VP-Internal Subjects

The first move to an articulated VP structure was the inclusion of the subject (external argument) within the VP. Since this argument needed to be distinguished from internal arguments, there had to be some hierarchical structure within the VP. This distinction was achieved by placing the external argument in the Spec, VP while all the other (internal) arguments were dominated by V′. We have already seen cases of languages like Malagasy and Kalagan where the external argument remains within the Spec, VP position if appropriately licensed. This structure, along with verb movement, accounts for the fact that the Agent, when it is not the subject, appears adjacent to the verb (from Guilfoyle et al. 1992).[4]

(6) Malagasy

a. An-sasa-na (anasan') *ny* *zazavavy* ny lamba **ny** **savony**.
PRES.C.wash DET girl DET clothes DET soap
literally: 'The soap was washed (with) the clothes by the girl.'

b. [V [*Agt* t_v Theme PP] **Subject**]

[4] This example has been adapted to be consistent with the glosses in this book. Morpheme-by-morpheme glosses will change slightly as different issues are highlighted, particularly with respect to verbal morphology.

A by-product of this conception of phrase structure is that we can now say that the VP represents the whole event—the V and all of its arguments. The external argument is still, in some sense, external, but only with respect to V′, not the VP.[5]

It is now generally accepted that all subjects are derived in some sense. They merge into the phrase structure in a lower position and only come to be in the Spec, TP through movement. There is much controversy, however, concerning the details of the merged position. The main controversy involves the nature (and label) of the head that introduces the external argument. There is another related controversy, though, as to whether the lexical head, that is, the verb or root, is responsible for a theta-role being assigned to the external argument. We have seen that Hale and Keyser (1993) propose that external arguments are added only in the s-syntax.[6] The external argument, then, is not part of the lexical entry of a predicate. Bowers (1993), Kratzer (1996), and Pylkkänen (2002) view external arguments in a similar way: a functional category (Pre(dicate) or Voice) is responsible for the introduction and licensing of the external argument.[7] In Pylkkänen's view, what is crucial is the separation of the CAUSE predicate from the head that introduces the external argument (Ext in Pylkkänen 1999; Voice in Pylkkänen 2002). Finally, by claiming that v is a functional category, Chomsky also, in Kratzer's terms, severs the external argument from the head. The respective trees are given below. Though all differ in the details, they have in common the fact that the external argument is merged in a position that is different from where it appears on the surface.[8]

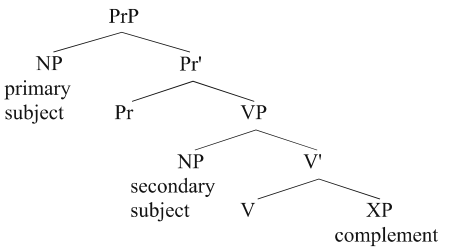
[5] With the subject within the VP, the syntactic representations more closely reflect the semantic representations given in the Discourse Representation Theory of Kamp and Reyle (1993: 516–519).

[6] In Hale and Keyser's work, external arguments are "severed" (as in Kratzer 1996) from the lexical representation. They are introduced in the s-syntax either by predication or by requirements of the elements in the extended projection of the lexical domain (e.g., Case, EPP).

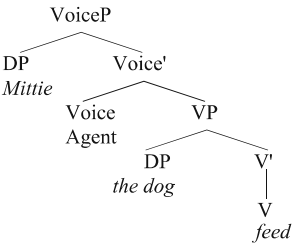
[7] Williams' (1981) work might be seen as a precursor of this line of research as it singles out the external argument from the other arguments of the predicate. Marantz (1984) points out that external arguments are in a sense arguments of phrases (the head plus the internal arguments).

[8] Kratzer (1988: 137), however, does suggest that the external arguments of some individual level predicates are merged in the Spec, TP.

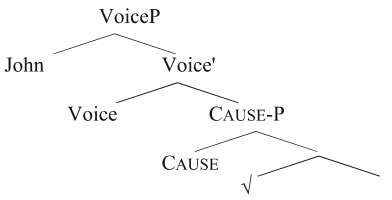
(7) a. Bowers (1993: 601)



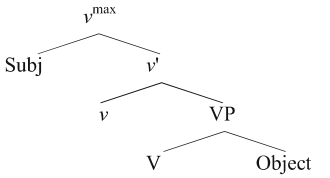
b. Kratzer (1996: 121)



c. Pylkkänen (2002: 79)[9]



d. Chomsky (1995: 352)



In the context of my research, I take a more traditional approach within the VP-internal subject hypothesis. While the articulation of the VP that I propose shares some common features with, for example, Pylkkänen's structure, it differs in two important ways. I have argued that the head that introduces the external argument, V_1, is part of the lexical entry, and it is a lexical category rather than a functional category. This was particularly important for my account of Navajo. In addition, as will become relevant in Section 7.4, the lexical entry is associated with an argument structure and this argument structure includes the specification of the external argument.

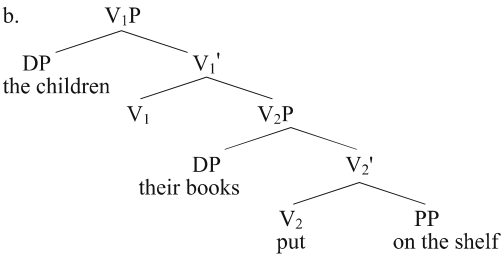
4.2.2.2 VP Shells

A further step in the articulation of VP came when Larson (1988) proposed the Single Complement Hypothesis whereby a head may have only one complement. This, in effect, forces a binary branching structure; it also forces the generation of additional heads to license multiple internal arguments. For the string in (8a), then, a tree like that in (8b) would have to be created.

[9] Baker and Stewart (1999a), using data from the serial verb language Edo, also propose that Voice and v be separate heads.

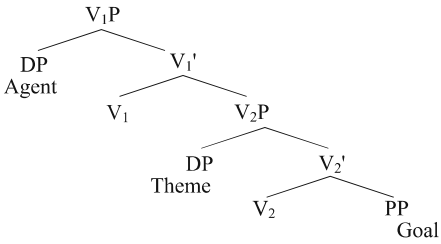
(8) a. The children put their books on the shelf.

b.



Two VPs must be generated so that each head has only one complement. Note that the upper V, V_1, is empty.[10] This position will eventually be filled when the V_2 *put* undergoes head movement from its lower V position to the higher V_1 position. Schematically, verbs with three arguments of the type Agent, Theme, Goal will place their Agent in the Spec, V_1P, the Theme in the Spec, V_2P, and the Goal as the complement of V_2 according to the version of the theta-hierarchy espoused by, for example, Larson (1988) and Baker (1988). This theta-role template is shown in (9).

(9)



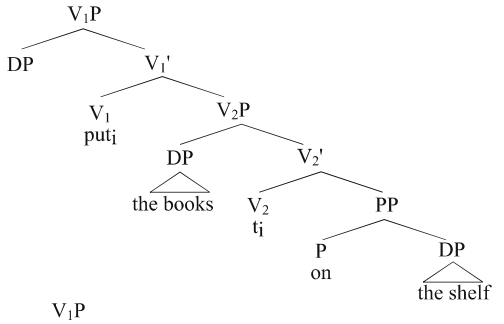
As the VP becomes more articulated, questions are raised. First, why should there be so much syntax in a single word? Here we have the lexical entry *put* which requires two separate heads to realize all of its arguments. Secondly, is the placement of arguments accidental—that is, Agents in the Spec, V_1P and Themes in the Spec, V_2P?

[10] Consistent with the previous chapters, I use the terms V_1 and V_2 here to represent the higher and lower V, respectively. Larson did not distinguish these diacritically, which most likely reflects his use of the distinct heads as simply segments of one V.

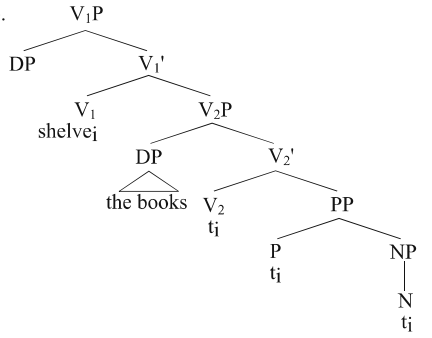
4.2.2.3 Lexical Semantics in Syntax

A further development in the understanding of VP structure is outlined in Hale and Keyser (1993, 2002).[11] Through an investigation of the nature of denominal verbs such as *shelve*, Hale and Keyser (1993) propose that, in fact, all English verbs contain more syntax than hitherto assumed. Unlike Larson, however, they propose that the syntax contributes semantics as well. A Larsonian-type representation for *put the books on the shelf* is given in (10a). Combining structure from Larson with the ideas of Hale and Keyser, we might create an L-syntax derivation of *shelve* as given in (10b) below.[12]

(10) a.



b.



In (8b), the single verb *shelve* is represented by four syntactic heads: N, P, and two Vs, as indicated by the traces of movement. All of these heads contribute meaning, however. The meaning of N is clear: this is the endpoint of the action, the shelf. P contributes a locative relation like the preposition *on*. The top V, the one with the Agent in its Spec position, is CAUSE and the bottom V is BE/BECOME. Further, the theta-roles of the arguments will be determined by the structure in which they appear. In other words, it is not accidental that the theta-roles appear where they do. A Theme will be interpreted as such because it appears

[11] Hale and Keyser's work will be discussed in more detail in Chapter 6.

[12] Hale and Keyser (2002) propose a different account from the one given in their earlier work. I follow the original account more closely, but also change some details to better fit the structure being argued for here.

in a particular position, for example in the Spec of a V that takes either a PP or an AP complement.[13]

Hale and Keyser have contributed the following claims to our discussion. The heads of an articulated VP do, now, have semantic content—Agents will always be the subject of V_1P, while the Theme will be the subject of V_2P.[14] Furthermore, the placement of arguments is predictable from the structure. However, we are now left with a monomorphemic verb that has a lot of syntax and an equal amount of semantics.[15]

4.3 Semantics in the Syntax

Given what we have seen about the simplification of semantic representations of complex events and the parallel fine-tuning of the structure of the VP, we can now ask about the correlations between the two. We know that we do not want to put all of semantics in the syntax; rather, we want to constrain the elements that appear in the syntax to exactly those elements that the syntactic component will make use of. I will sketch here a view of VP structure that suggests that it characterizes those elements of semantics that distinguish aspectual verb classes.[16]

4.3.1 Theta-Roles and the Uniformity of Theta Assignment Hypothesis (UTAH)

VP structure could be viewed as encoding theta-relations. In other words, the function of the heads could be viewed as simply providing appropriate specifier and complement positions to hold the relevant arguments; the order of these arguments would then follow some theta-hierarchy. This is a view that can be constructed with a combination of Larson's justification for VP-shells along with Baker's Theta-hierarchy.[17]

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[13] In Hale and Keyser (1993, 2002), the structures are slightly different. The Theme would be in Spec, PP.

[14] For Hale and Keyser (1993, 2002), only the inner subject would be part of the argument structure of the root.

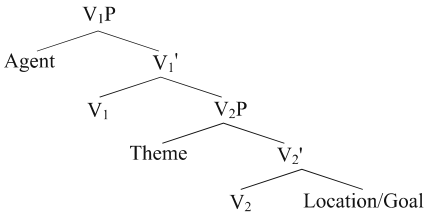
[15] One could argue that *shelve* is bimorphemic, with a verbalizing morpheme causing the change from *f* to *v*. Other denominal verbs, such as *saddle,* appear to be monomorphemic. Deadjectival verbs such as *redden* are clearly bimorphemic, and verbs like $thin_{TRANS}/thin_{INTRANS}$ appear to be monomorphemic. The problem is that all of them will have the same amount of syntax and semantics regardless of their overt morphological structure.

[16] Viewing phrase structure as a mirror of event structure has become a bit of a cottage industry. I have tried to cite a range of references throughout this work but it is certainly not an exhaustive list. Some of the nicest and earliest examples of work done on this topic were either produced by Hoekstra (e.g., 1988, 1992) or inspired by him (den Dikken 1995; Sybesma 1992, 1999). Some collections also give a sampling of what is being done currently, such as Kempchinsky and Slabakova (2005) and Erteschik-Shir and Rapoport (2005).

[17] See Grimshaw (1990: 7–10, 175, footnote 1) for a discussion of different theta-hierarchies.

(11) Agent > Theme > Location

(12)



The articulation of the VP here further allows an articulation of the theta-grid by creating a hierarchy of arguments that is represented syntactically.

4.3.2 Predicates and LCS

The articulation of the VP also provides a syntactic representation of the hierarchy of the operators in a system like Dowty's. An obvious way to map the types of semantic structures that we have seen in Section 4.2.1 is by creating a verbal head for every semantic operator such as DO, CAUSE, BECOME, etc. In Dowty's system, the semantic operators reflect the characterization of the different classes, and, in turn, suggest a mapping of event structure to phrase structure. A summary (and simplification) of Dowty's classification is given below (from Dowty 1979: 123–124). I have organized the representation to make the next step in the mapping to syntax more straightforward.

(13)					
	STATES:				V (. . .)
	ACTIVITIES:	DO			(. . . V (. . .))
	ACCOMPLISHMENTS:	DO (. . . V (. . .))	CAUSE	BECOME	(V (. . .))
	ACHIEVEMENTS:			BECOME	(V (. . .))

We shall return to this characterization once we have set up a possible phrase structure.

4.4 The Syntax of Event Structure

My view of the mapping of event structure onto phrase structure owes a lot to Pustejovsky's work on the structure of events. In a way, the research presented here takes his structures more seriously than he does, as it extends them into the domain of syntax. While many of the details may vary, the overall assumption here is that

the subevents proposed in Pustejovsky's work may be represented as sub-trees, or more particularly, sub-VPs in the syntax. Given that Pustejovsky's research is the cornerstone of the proposals presented here, I will review some of it in detail.

One question that might be raised is whether grammar should represent subevents, or whether subevents are simply a matter of world knowledge. For instance, Pustejovsky divides *build a house* into the subevent of *house-building* and the final state subevent of *built-house*. These two subevents are represented in the grammar of the semantic system (specifically at the level of ES (Event Structure)). One could imagine, however, that the fact that a house is built at the end of a house-building process need not be part of the grammar but could simply be left to nonlinguistic knowledge. Pustejovsky argues that subevents must be encoded in the grammar since the grammar may refer to them in ways to be discussed in more detail below. I extend this sort of argument into the area of syntax. The argument will be that if syntax can alter or refer to particular properties of a predicate, then these properties must be encoded in the syntax.

4.4.1 The Precursor: Generative Semantics

The work of Hale and Keyser owes an obvious debt to the Generative Semantics framework. It is important to note, however, that the framework presented here is able to avoid some of the problems that were encountered within Generative Semantics. The goal is to posit syntactic structure for elements that are *syntactically* relevant. In other words, as Pustejovsky points out, his framework does not attempt to exhaustively reduce predicates to primitives.[18]

In addition, the current syntactic framework, being more fine-tuned, is able to represent distinctions that did not exist in the 1970s. More specifically, sentential complementation can be more precise. A sentential complement can come in a variety of sizes such as CP, IP, vP, and VP, and not just S.[19] It is this fine-tuning that allows one to distinguish between *kill* and *cause to die,* in response to Fodor's famous criticism of Generative Semantics (Fodor 1970). Foreshadowing the analysis of causatives that will be outlined in Chapter 6, *kill* as a lexical (L-syntax) causative would have the structure in (14a) while *cause to die* as a productive (S-syntax) causative would have a structure like (14b). The important distinction is that *kill* represents one event, while *cause to die* represents two events.[20]

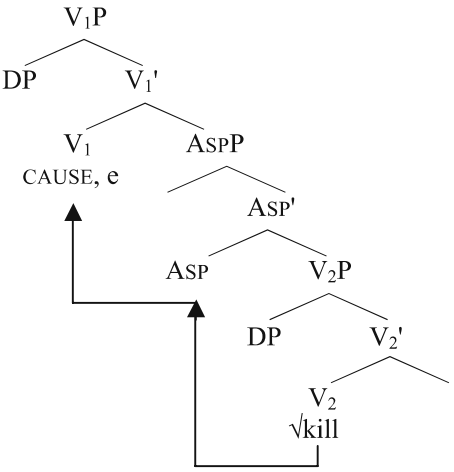
---

[18] In Pustejovsky's words, he is proposing a "generative theory of word meaning, but one very different from the generative semantics of the 1970s... we are suggesting that lexical decomposition proceed in a *generative* fashion rather than the traditional *exhaustive* approach" (Pustejovsky 1991: 53).

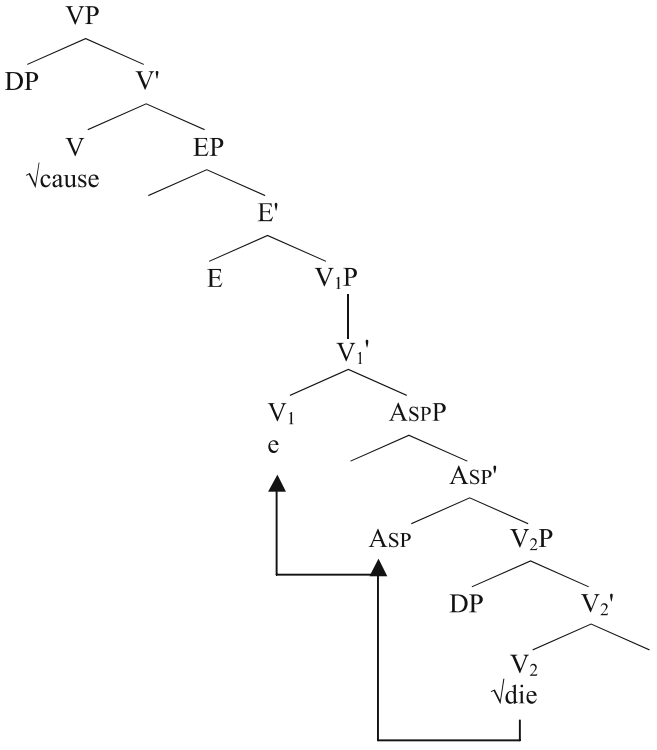
[19] This sort of specific selection for sentential complementation can be found in the work of Rochette (1988) and is used more widely now.

[20] The *e* under V_1 is meant to encode the fact that the predicate is dynamic. This will be discussed in Section 4.4.4.

(14) a. *kill* [V_1 – ASP – V_2]



b. *cause to die* [V_1 – E – V_1 – ASP – V_2][21]



[21] These productive causative morphemes probably also consist of a V_1 and V_2 with a zero V_2 but I do not go into the details here.

In both cases, a CAUSE lexical item selects a verbal complement, but in the case of the L-syntax causative, AspP is selected. In the case of the S-syntax causative, EP is selected. Now we can address the three arguments against the *cause to die* analysis of *kill*. I suggest that all three differences in the construction point to the presence of an embedded V_1 in the *cause to die* structure.

Fodor listed three environments in which *kill* can be distinguished from *cause to die*.[22] In the first environment, the second part of the construction refers back to an embedded event in the first part of the construction. In (15a) and (15c), we see that the two constructions work similarly when the whole complex event is referred to. The difference arises when (15b) and (15d) are compared. The *it did so* refers to the event of the plant dying. This is possible with *cause to die* but not with *kill*.

(15) a. John caused the plant to die and it surprised me that he did so.
b. John caused the plant to die and it surprised me that it did so.
c. John killed the plant and it surprised me that he did so.
d. * John killed the plant and it surprised me that it did so.

In the second environment, two conflicting temporal PPs are added to a slight complication of the construction. This works with *cause to die* where the causing (the manner of which has additionally been specified) occurs on one day and the dying occurs on another day. This does not work with *kill*, however.

(16) a. John caused the plant to die on Sunday by cutting it on Saturday.
b. * John killed the plant on Sunday by cutting it on Saturday.

In the third environment, a means adverbial is added. With a *cause to die* structure, the structure is ambiguous: the means adverbial may modify either the *cause* predicate or the *die* predicate. This is most clearly seen by determining which argument, John or Bill, acts as the external argument of *swallow*. With the *kill* example, only the argument John can control the empty subject of *swallow*.

(17) a. John caused Bill to die by swallowing his tongue. (ambiguous)
b. John killed Bill by swallowing his tongue. (not ambiguous)

What is common to all of these environments is the appearance of two separate events in the *cause to die* case and only one event in the *kill* case. As long as an account for *kill* captures the fact that it is only one event, then the problems encountered by the Generative Semantics proposal do not arise. In the account presented here, *cause to die* represents two events, while *kill* is just one.

Now we will investigate a possible way of mapping event structure to syntax. The aim is to show how the syntax can provide the appropriate representation

[22] I have changed his examples slightly but not in a way that is important to the discussion at hand.

for the interpretive component. I shall first present the data I want to account for and then describe a phrase structure proposal.

4.4.2 Aspectual Predicate Classes

Pustejovsky's aim in constructing a system of subevent types is to create a grammar that will generate the different aspectual classes. As a bit of background, we will assume the four classes of Vendler (1967): State, Activity, Achievement, and Accomplishment. A variety of tests have been proposed to distinguish these classes. I will briefly summarize these tests and how they may be used for English. Of necessity, I am glossing over some of the controversies that surround not only the tests but also the division into classes.

Vendler's (1967) classification of verbs into four classes can be captured in the following table. The table, taken from Verkuyl (1989: 44), uses Vendler's own descriptions of the verb classes to set up a feature system with two features [+/–definite] and [+/–process]. Vendler's exact words are given below (Vendler 1967: 106):

> Accomplishments "*A was drawing a circle* at *t* means that *t* is on *the* time stretch in which *A* drew that circle." Activities "*A was running at time t* means that time instant *t* is on *a* time stretch throughout which *A* was running." Achievements "*A won a race between t_1 and t_2* means that *the* time instant at which *A* won that race is between t_1 and t_2." States "*A loved somebody from t_1 to t_2* means that at *any* instant between t_1 and t_2 *A* loved that person." The feature [+/–definite] correlates with *the* vs. *a*/*any*. The feature [+/–process] correlates with the use of time periods vs. time instants.

A table giving the four verb classes with the relevant features is provided in (18).

(18)

	–Process	+Process
–Definite	State	Activity
+Definite	Achievement	Accomplishment

The feature [+definite] captures the fact that Accomplishments and Achievements are telic. Meanwhile, [–process] is intended to capture the fact that States and Achievements are not durative.

Tests have been proposed to distinguish which class a predicate belongs to. I present just two of the more common tests below (see Dowty 1979 for others). A test that will be used throughout to distinguish between [+/–definite] is the use of frame (*in x time*) and duration (*for x time*) adverbials. This can be seen as coinciding with "*the* time stretch/instance" mentioned in the quote from Vendler above.[23]

[23] Use of these tests has created a bit of controversy. Many languages allow flexibility through coercion. For example, (19d) becomes fine with the frame adverbial if we measure the time up to the point where Mary became tired, while (19b) is acceptable with the frame adverbial if we imagine a task of running a certain amount. I discuss coercion in Chapter 8.

(19) a. Mary wrote a letter (√in 3 minutes/*for 3 minutes).
b. Mary ran (*in 3 minutes/√for 3 minutes).
c. Mary found the key (√in 3 minutes/*for 3 minutes).[24]
d. Mary was tired (*in 3 minutes/√for 3 minutes).

A test that has been used to determine the value [+/–process] of a predicate is the use of the English progressive. States and Achievements typically resist appearing in this form, as the data below illustrate.

(20) a. Mary was writing a letter.
b. Mary was running.
c. *Mary was finding a key.
d. *Mary was being tired.

There has been a debate as to where the membership in these classes should be encoded—in the lexicon attached to the verb or at some level in the syntax where phrasal material is available. Given that material in construction with the predicate such as objects and goal PPs may affect which class it belongs to, it is fairly clear that phrasal material is needed and that information from the syntax must enter the computation. Pustejovsky puts it as follows (Pustejovsky 1991: 52) and explains how his structures are necessary.

> If membership in one of these aspectual classes is viewed as a projection of lexical properties of the verb, then how is it that the aspectual properties of a sentence may change as the result of other factors, such as adverbials (both durative and frame), the structure of the noun phrase (NP) in an argument position (e.g. definite vs. bare plural), or the presence of a prepositional phrase? In the sections that follow, we will explain these behaviors, which have come to be known as "type-shifting" phenomena (Bach, 1986), in terms of a configurational theory of event structure. We show how the tests normally used as diagnostics for membership in one class or another fall out as the principled consequence of different event structures. Thus, we are able to abandon the feature-based approach to aspect which is generally assumed (e.g. Verkuyl, 1972) in favor of a highly restricted, topological theory of how events are structured.

Before turning to Pustejovsky's structures and my syntactic translation of them, I will examine some of the type-shifting cases he mentions. At this point, I restrict myself to three constituents that must enter into the computation: the verb, its object, and the goal PP or end-state.[25]

First, as we can see in (21), some of the aspectual information must come from the predicate itself. In the examples below, we control for the input of the object by choosing the same type in both cases. Only the predicate head changes. The verb *build* with a singular object is an Accomplishment while *push* with a singular object is an Activity (using the PP adverbial tests).

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[24] I have changed the choice of verb to exemplify Achievements for reasons that become clear in Chapters 7 and 8. The problem is that certain Achievements are very easily coerced.

[25] We will return to the effect of adverbials on a predicate in Chapter 8.

(21) Information depends on *predicate*

a. Mary built a cart (√in 3 hours/*for 3 hours). ACCOMPLISHMENT
b. Mary pushed a cart (*in 3 hours/√for 3 hours). ACTIVITY

As noted by Verkuyl (1972), however, the presence of an object and the type of this object is also crucial. *Run* is an Activity, while *run a mile* is an Accomplishment. *Build* with a singular object is an Accomplishment; *build* with a bare plural is an Activity.[26]

(22) Information depends on *object*

a. Mary ran (*in 3 hours/√for 3 hours). ACTIVITY
b. Mary ran a half-marathon (√in 3 hours/*for 3 hours). ACCOMPLISHMENT
c. Mary built a cart (√in 3 hours/*for 3 hours). ACCOMPLISHMENT
d. Mary built carts (*in 3 hours/√for 3 hours). ACTIVITY

Verkuyl labels the quality of the object that is necessary to encode an Accomplishment as [+SQA] (Specified Quantity of A). If a number is included with the plural, the predicate remains an Accomplishment. What has happened in these cases is that the object that measures out the action is given a definite size, which in turn gives the event a specific endpoint.

(23) Mary built two carts (√in 3 hours/*for 3 hours). ACCOMPLISHMENT

As we have seen, then, we need to know something about the object as well as something about the predicate. We also need to know something about other arguments of the verb, as can be seen below. By adding a goal NP or a result XP to a VP, the predicate may change from an Activity to an Accomplishment. Basically, what is happening in these cases is that an endpoint has been added.

(24) Information depends on *XP*

a. Mary pushed a cart (*in 3 hours/√for 3 hours). ACTIVITY
b. Mary pushed a cart into the garage(√in 3 hours/*for 3 hours). ACCOMPLISHMENT
c. Mary hammered the nail (*in 3 hours/√for 3 hours). ACTIVITY
d. Mary hammered the nail flat (√in 3 hours/*for 3 hours). ACCOMPLISHMENT

[26] A reviewer points out that plural objects seem to cause iterative events just as plural subjects do. The example given was *Children passed on the message for* 10 *minutes*. While I do not find this example to be on a par with *Mary built carts for* 3 *hours,* I have worried that turning a single event into an iterative event can always make an Accomplishment into an Activity. This is also true with cases of coercion where *Mary sang the song for* 3 *hours* coerces an iterative reading. I leave the issue of coercion for Chapter 8.

Further, as in the case of an object that measures an event, the internal shape of these constituents is also important. And, as in the case of the VP, the shape of this constituent is determined by its head and the arguments of the head. This is easiest to show with goal PPs.[27] If the head itself is not telic, the PP is not telic (see (25b)). If the head is telic but the prepositional object is [–SQA], the PP is not telic (see (25c)).

(25) a. Mary ran to the store (√in 3 hours/*for 3 hours). ACCOMPLISHMENT
b. Mary ran towards the store (*in 3 hours/√for 3 hours). ACTIVITY
c. Mary ran to stores (*in 3 hours/√for 3 hours). ACTIVITY

Other elements may also affect what I will call, following Depraetere (1995), the boundedness of the predicate. For example, viewpoint aspect such as the English progressive changes a telic situation to an atelic situation, as is shown in (26).

(26) Information depends on viewpoint *morphology*

a. Mary built a cart (√in 3 hours/*for 3 hours).
b. Mary was building a cart (*in 3 hours/√for 3 hours).

I will set this last sort of change aside until the discussion of coercion in Chapter 8.

4.4.3 Event Structure Representation

Let us sum up where we are at this point. It appears that several factors must conspire to determine the aspectual verb class of a predicate—the head of the predicate and its internal arguments. I take the direction taken by many others (e.g., Hoekstra 1992; Sybesma 1992; Borer 1994, Snyder 1995; van Hout 1996; Higginbotham 2000; Kratzer 2004) that Accomplishments are Activities plus an endpoint. In other words, in order to form an Accomplishment, an endpoint needs to be made available.

Looking just at the difference between Activities and Accomplishments, we have seen that the difference is in the presence (Accomplishments) or absence (Activity) of a natural endpoint. This is made quite clear in Pustejovsky's representations. We have seen some of his system above, but I will now give a broader overview.

Pustejovsky's simplest representation is for a State, as it has no subparts. This is shown in (27) below, with an example in (28).[28]

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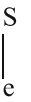
[27] I have had mixed results with sentences like 'Mary hammered the metal flatter and flatter for three hours' and 'Mary stretched it longer for three minutes'.

[28] I have presented these structures as they are given in Pustejovsky's work. As a reviewer points out, *closed* could be construed as a passive but another root such as *open* could be used.

(27) STATE (S): a single event, which is evaluated relative to no other event

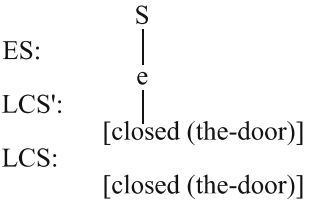
Examples: *be sick, love, know*

Structural representation:



(28) a. The door is closed.

b.

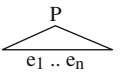


A process (in the terms I am using here, an Activity) has subparts of smaller events that comprise a larger event. Further, there is a sense of duration.

(29) PROCESS (P): a sequence of events identifying the same semantic expression

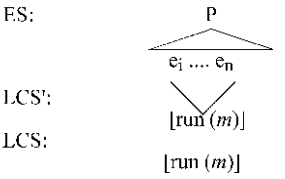
Examples: *run, push, drag*

Structural representation:



(30) a. Mary ran.

b.



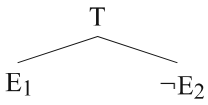
Finally, a transition is a shift from one event to another opposite event. In Pustejovsky's words, a transition is "an event identifying a semantic expression, which is evaluated relative to its opposition" (Pustejovsky 1991: 56).[29] His transitions include two aspectual predicate classes: Achievements and Accomplishments.

[29] Of course, this characterization of transitions is not new. Pustejovsky cites many other authors, including Aristotle.

(31) TRANSITION (T): an event identifying a semantic expression, which is evaluated relative to its opposition

Examples: *give, open, build, destroy*

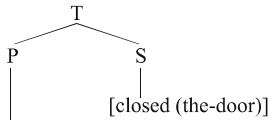
Structural representation:



Below we see a case where the representation is used to represent an Achievement (in (32)) and another where it is used to represent an Accomplishment (in (33)).

(32) a. The door closed.

b. ES:



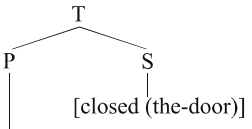
LCS': [¬ closed (the-door)]

LCS: become ([closed (the-door)]

The transition here is from the door's being not closed to the door's being closed.[30] Below we see where an overt Activity is added to the first part of a transition. Here the door becomes closed due to John's doing something. The first event is seen as a conjunction of John's acting on the door and the door's being not closed.

(33) a. John closed the door.

b. ES:



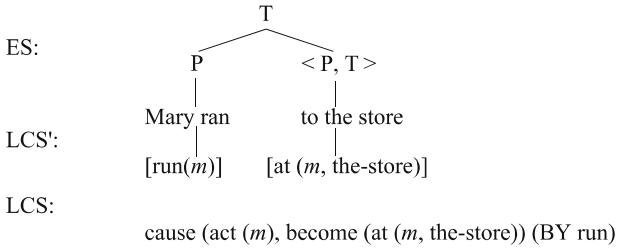
LCS': [act (*j*, the-door)
&¬closed (the-door)]

LCS: cause ([act (j,the-door)], become ([closed (the-door)]

[30] The state of NOT CLOSED is linked to P (Process) in Pustejovsky's work. In the text, however, Pustejovsky points out that the inchoative use of *close* expresses a shift from one state to another. This discrepancy will become important in my characterization of Achievements.

Example (33) represents a typical Accomplishment. If we view Accomplishments as being a combination of a process with a final State, we can then ask whether this is represented in the syntax. Pustejovsky gives further examples where the syntactic division between the process and the final State is clearer. We saw above the representation for a process event such as *Mary ran*. As Pustejovsky points out, if this process is given an endpoint in the form of a PP, then the event becomes a transition (or an Accomplishment in our terms). This is shown below, where a transition is formed from the process *Mary ran* to a further transition *to the store* (Pustejovsky 1991: 63).[31]

(34) Mary ran to the store.

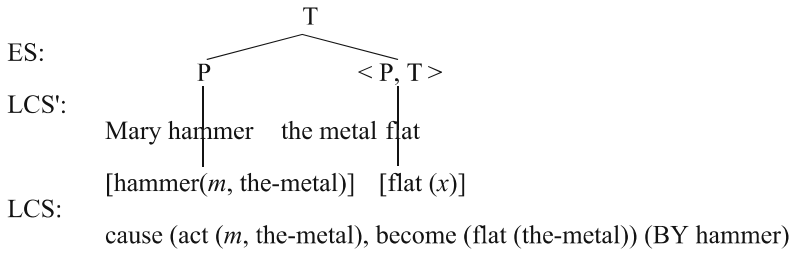


We have a similar process when a resultative AP *flat* is added to the Activity *Mary hammered the metal* (Pustejovsky 1991: 65)

(35) a. Mary hammered the metal.

b. Mary hammered the metal flat.

(36)



[31] Pustejovsky (1991: 64) states that "the PP acts like a function from processes to transitions." It is not clear to me here why the transition does not overtly express the "not at the store" state associated with the initial process. The same question arises for the next structure, where "not flat" is not expressed overtly in the structure.

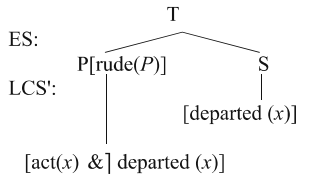
Part of Pustejovsky's goal in developing these representations is to provide a way to account for the scope of certain adverbials. These ambiguities have figured in the literature for many years (e.g., Morgan 1969; Dowty 1979), pointing to subparts of events. Three relevant examples are given below: manner adverbs like *rudely* or *quickly* that are ambiguous between an event or manner reading, adverbs like *almost* that can modify beginning point or endpoint, and *again* which can have a repetitive or restitutive reading.

In (37) we see that the adverb *rudely* can modify the whole event (it was rude of Lisa to depart) or the manner in which Lisa departed (e.g., without saying goodbye).

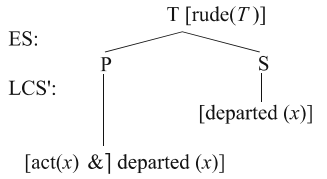
(37) Lisa rudely departed.

In terms of Pustejovsky's representations, the adverb would have scope over either the whole T, or just the P. The relevant representations are given below.

(38) a.



b.



Another famous example of such an ambiguity is given below (see also Dowty 1979: 241ff for a discussion of the use of *almost*).[32]

(39) a. John almost built a house.
b. John almost ran.

Again using Pustejovsky's type of representations, we can have *almost* modify either the process (he almost began the building process), or the final state (the house was almost built). With a process, there is only one point that can be modified and that is the beginning.

[32] Tenny (2000: 313ff) questions whether *almost* is really ambiguous or just vague. I follow Pustejovsky and others in treating it as ambiguous though nothing would be lost by taking *almost* out of this list of structure-sensitive (and ambiguous) elements.

A third example of ambiguity that has gained currency in the literature (e.g., von Stechow 1995b; Beck and Johnson 2004), is the adverb *again*. In a sentence such as (40) below, there can be two different readings.

(40) The door opened again.

a. The door opened once. The wind blew it closed and then it opened again.
b. The door was open. The wind blew it closed and then it opened again.

In the first reading, there are two opening transitions. In the second reading, there are two opened states, but only one opening transition asserted. This can also be represented on Pustejovsky's event structures.[33]

One could leave the representation of event structure to the semanticists, but the input of syntax into the computation of event structure is apparent through the morphological form of the verb (e.g., in Navajo) and the case assignment and syntactic position of the objects (e.g., in Scots Gaelic).[34] Phenomena such as these suggest that the computation needs access to syntactic information. I turn to the task of translating event structure into phrase structure in the next section.

4.4.4 Phrase Structure Representation

The mapping of the event structure proposed by Pustejovsky is fairly straightforward once the VP has become sufficiently articulated. Many researchers have noted that endpoints are added syntactically, but there are variations in how they are added. Below, I give a brief overview of the use syntacticians have made of the sort of event structure proposed by Pustejovsky.

Starting first with a Larsonian-type VP, we see immediately that the V_2P seems to describe a resulting state. With a predicate such as *put the book on the table,* the resulting state is that the book is on the table. *The book* is acting semantically as the subject of *on the table*. Larson even calls the Theme the inner subject (Larson 1988: 342). One way of assigning predicates to V_1 heads is to assign V the process reading and V_2 the result reading.

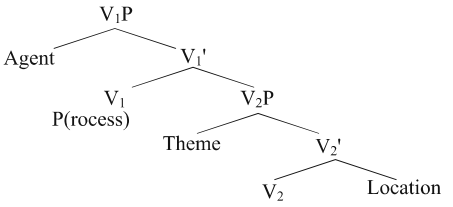
---

[33] Further, the examples below show that some PPs modify only the final state in a transition.

(i) a. John gave Mary the record for the afternoon. (S)
b. John arrived for the day.
c. ? My terminal died for 2 days last week.
d. They killed the lights for five minutes.

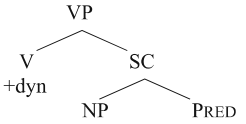
[34] The discussion of coercion in Chapter 8 will argue that the case and position of the object are directly related to situation aspect, that is, Aktionsart.

(41)

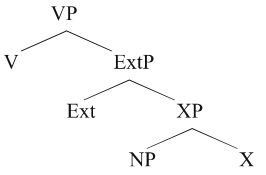


This structure has much in common with the work of researchers in Leiden, led by Teun Hoekstra (Hoekstra 1988, 1992; Mulder 1992; Sybesma 1992). Hoekstra's structure is given in (42) below (Hoekstra 1992: 163), and Sybesma's in (43) (Sybesma 1992: 55).

(42)



(43)



There is a lower constituent that represents the final State of an Accomplishment and a higher V describing the action that led to the result. Sybesma includes an Ext(ent) Phrase between the two which will become important later.

Sometimes the head of this lower constituent is overt, as in (44b), and sometimes it is covert, as in (44a) (taken from Hoekstra 1992).

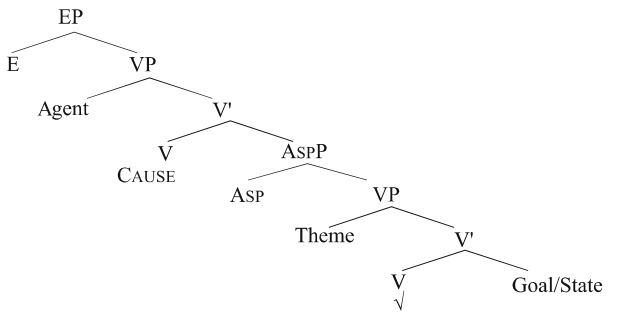
(44) a. John ate the cake.
b. John ate the cake up.

Hoekstra writes "semantically, accomplishments are complex, consisting of an activity (or process) and an object that measures out the activity. This may be a single NP, or a SC. I want to propose that this semantic complexity is always mirrored by a syntactic complexity, whereby all accomplishments would have the structure in [(42)], with a dynamic verb governing a SC" (1992: 163).[35]

[35] Other authors who propose a low constituent that represents the natural endpoint of an Accomplishment include Higginbotham (2000) and Snyder (1995).

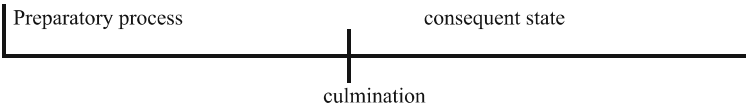
The phrase structure that I propose to represent event structure is the same structure that I have argued for on syntactic and morphological grounds, given below.[36]

(45)



This phrase structure is very similar to Sybesma's except that his ExtP is AspP. It has the flavor of an Extent Phrase, however, in that it is in this position that the extent of the event is computed. The structure also represents the three parts of the event given in Moen's sketch and Dowty's semantic decomposition, both of which are repeated below.

(46)



(47)

STATES:					V (...)
ACTIVITIES:	DO			(...	V (...))
ACCOMPLISHMENTS:	DO (... V (...))	CAUSE	BECOME	(	V (...))
ACHIEVEMENTS:			BECOME	(	V (...))

V_1 is where Moens' preparatory process and Dowty's DO are encoded. ASP is the point where Moens' culmination and Dowty's BECOME are encoded. V_2 represents Moens' consequent state and Dowty's event name V.

Some fine-tuning is still required but we will do this as we relate this structure to Vendler's typology of predicates. I return to the feature system, which proved fairly successful not only in distinguishing the four situation types but also in

[36] Outer Aspect will have scope over the whole event.

creating supercategories targeted by the two tests that were discussed. The relevant features are [+/–process] and [+/–definite]. The more commonly used term for [+/–definite] is telicity. Given the discussion of Moens and Dowty, it is clear how we can map the features to the structure. Process is encoded in V_1 and telicity [+/–definite] is encoded in Asp.

While some of the evidence for my proposals will have to wait until later chapters, I outline the general direction of the typology here. We start with the feature [+/–process]. This is represented in V_1 and is what distinguishes Achievements and States on one hand from Accomplishments and Activities on the other. Like many others (e.g., Noonan 1992a), I take States to potentially have the simplest structure, perhaps simply a V_2. If this is the case, it is easy to see why they do not encode a process. However, for a variety of reasons that will come up in the course of the discussion, States may also be represented by two VP shells. For example, I follow Noonan (1992a) in analyzing transitive States, which assign accusative case, as containing a stative V_1 (*HAVE*). In order to encode a process, the V_1 must be dynamic so even these States will not be [+process]. As will be argued at length in Chapter 7, Achievements may also contain a V_1, but again these are stative V_1s, not dynamic. I will save a longer discussion of the class of Achievements until Chapter 7, since deciding on the membership and crucial characteristics of this class is not straightforward.

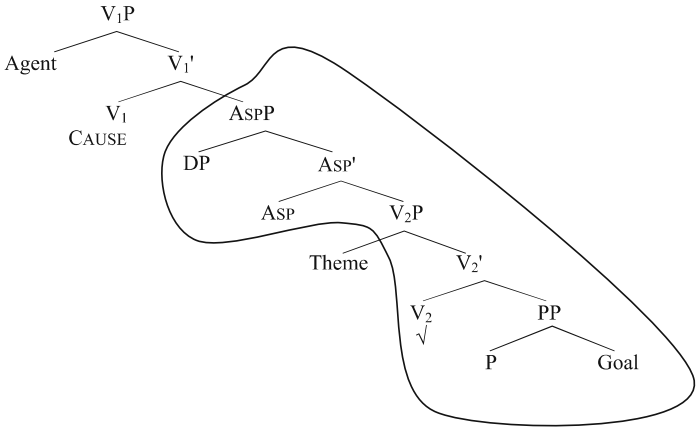
The [+/–telic] (definite) feature distinguishes Accomplishments and Achievements from Activities and States. This feature is a computed feature that appears in Asp. We have already seen various elements that enter into this computation such as the verb head, the object, and the goal/result XPs. Importantly, all of these are already merged into the structure at the point where Asp has to be computed. Famously, external arguments do not enter into this computation. This is what an Inner Aspect structure predicts. It is not the case that all material within the domain of Asp adds to this computation, however, and this is where the discussions in Chapters 2 and 3 become important. I claim that the material in the logical object position, Spec, V_2P, is not visible for the computation of telicity. In order for a Theme to be able to measure out a predicate,[37] it must have moved to Spec, Asp (or, perhaps, have entered into an AGREE relationship with Asp). A large part of my argumentation has depended on the case assignment of the object. If objects stay in their merged position in the structure, they do not measure the event.[38] Asp only has access to its own Spec, its complements and the complements within its

[37] As is well known, some predicates such as *push* require goal phrases to mark an endpoint. The Theme itself cannot mark the endpoint.

[38] There is a problem here with the second object in a double-object construction, which does measure out the event. In *Mary gave the child a book for two years*, it cannot be the giving that continues (only the result of having the book). In *Mary gave the child books for two years* it can be the giving that goes on for two years. The difference depends on the nature of the second object. Perhaps in the case of double objects, both DPs enter into an AGREE relation with Asp. This requires more research.

complements. The one constituent that is outside of this domain is the merged Spec, V_2 position (the Theme), which does not enter into the computation.

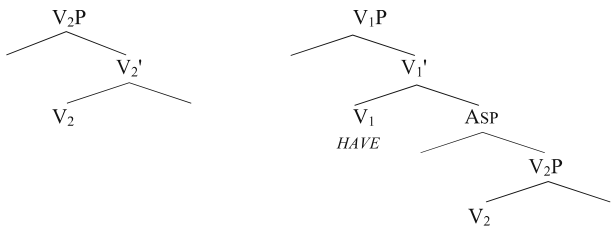
(48) Computational domain of Inner Aspect



While it looks as though the Theme is excluded in an ad hoc fashion, I believe it falls out from the event "spine," which is basically made up of the heads and the complements within the event domain. The only specifier allowed to play a role is the one that is in a checking relation with the event-related head responsible for measuring—in other words the Spec, ASP.[39]

Now we can give a representation for each of Vendler's verb classes. States will have two representations depending on whether the language has a *HAVE*-type V_1 for transitive statives. The two representations are given below.

(49) a. STATE b. TRANSITIVE STATE

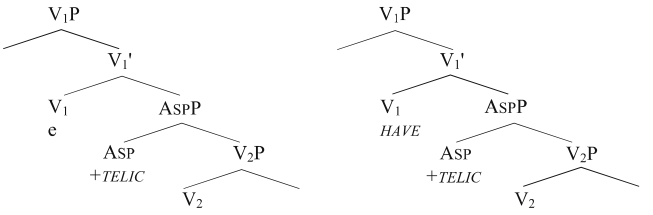


As we will see in more detail in the next chapter, Achievements also have two representations depending on whether they are transitive or not. Intransitive

[39] I assume that V_2 always has a Spec and a complement. This is discussed in Chapter 8.

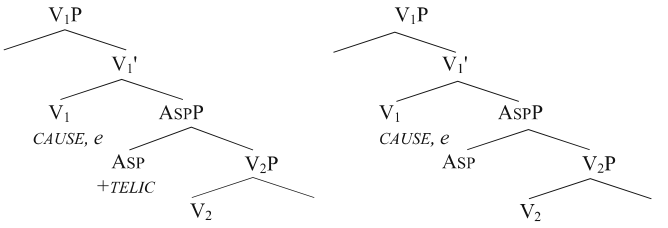
Achievements like *arrive* have a double-VP structure but V_1 simply encodes the fact that the event is dynamic (indicated here by *e* in V_1). Inner Aspect is represented by a feature [+telic]. This specification will be the result of some computation of elements within the domain of Aspect. Transitive Achievements have the same V_1 as transitive States, but they have [+telic] in Asp.[40]

(50) a. (Unaccusative) Achievement b. Transitive Achievement



Now we will look at the remaining two classes. These two have basically the same structure, the difference being only in the final computation of Asp. In fact, we do not want to have very different structures for these two classes as the movement back and forth between them is apparent both within and across languages. I start by giving the structures for both.[41]

(51) a. Accomplishment b. Activity



The Dowty-like operator in V_1 indicates the process quality of both of these classes. The specification of [+telic] in Asp for an Accomplishment indicates that the computation has that value. This similarity of the representation allows the necessary flexibility. As we see in the two examples below, Activities become Accomplishments and Accomplishments become Activities with shifts in [+/–SQA] specifications.

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[40] It may be that apparently single-VP states are in fact also double-VP states but with be rather than have in V_1. Later in this chapter, we will see that Malagasy has a stative morpheme that appears in V_1 but does not assign case.

[41] *CAUSE, e* indicates an eventive cause. We will see a case of a stative cause in Chapter 7.

(52) Activity ➔ Accomplishment

a. Mary pushed the cart down the road (*in 3 minutes/√for 3 minutes).
b. Mary pushed the cart into the garage (√in 3 hours/*for 3 hours).

(53) Accomplishment ➔ Activity

a. Mary built a cart (√in 3 hours/*for 3 hours).
b. Mary built carts (*in 3 hours/for 3 hours).

Note that in the representations given above, all four classes contain two VP shells. This is unlike views in which unaccusatives and passives do not have a V_1P (or a little vP) (see Chomsky 1995) or Activities do not have a V_2P (see Erteschik-Shir and Rapoport 1997). One reason for doing this is, as noted, that there is a flexibility in the specification of classes that is now determined more by features than by structure. We will see in Chapter 8 how cases of coercion may simply be cases of feature shift.

Another reason for having a complete VP structure for all four classes comes from the morphology of a language like Malagasy. I have claimed that the prefix *an-*, the lexical causative morpheme, is in V_1 (similar to *pag-* in Tagalog). If this is correct, then arguably two other morphemes also appear in V_1: the stative prefix *a-* and the unaccusative prefix *i-*. We can see the similarity of distribution below.

(54) a. m-an-√ala 'to take out' LEXICAL CAUSATIVE
b. m-a-√loto 'to be dirty' STATIVE
c. m-i-√ala 'to go out' UNACCUSATIVE

We also find that these three morphemes act similarly with respect to another morpheme in Malagasy. In Chapter 3, I argued that the prefix *m-* is in E and in Chapter 7 I argue that the *ha-* prefix encodes telicity and appears in Asp. *an-*, *a-*, and *i-* appear between these two morphemes in the following forms.

(55) a. *m-an-ha-√rary* 'sick' *mankarary*: to make sick
b. *m-a-ha-√ala* 'to go out' *mahaala*: to be able to take out
c. *m-i-ha-√tsara* 'good' *mihatsara*: to become better

If *an-*, *a-*, and *i-* are all in V_1, then we have a morphological argument that lexical causatives, statives, and unaccusatives all have two VP shells.

Next we turn to some remaining questions. One has to do with the position of Aspect, the other with the nature of the object in Spec, Asp.

4.4.5 The Position of Aspect

Aspect, in this view of event structure, is sandwiched between the two VP shells. One reason for doing this, already mentioned, is that the elements that are used

to compute the Aktionsart of a predicate are all generated below this projection. This rules out in principle the contribution of the external argument. It is not the case that all elements in the domain of Asp are part of the computation, but in order to be part of the computation, they must be part of this domain.

We have seen other event-related arguments that Aspect should be within the VP. As many authors have noticed, the presence of accusative case marking is sometimes important to the computation of Aktionsart. The relationship between case and the aspectual verb class of the predicate will be explored more in Chapter 5. It will be shown, however, that even in languages with overt object shift, VP-internal DPs can enter the computation. The argument will be, then, that this derived object position, which places elements in the appropriate configuration to enter the aspectual computation, must be VP-internal.

4.4.6 The Power of Aspect

Now I turn to the large and difficult issue of the nature of the DP in Spec, Asp. There are two directions that this discussion can take. We can look at the types of objects that undergo object shift in various languages. We can also look at the effect that object shift has. I examine each of these in turn.

To arrive at a definitive answer as to which objects move, a large cross-linguistic survey must be done using quite subtle semantic and pragmatic tests. Here I shall simply point out that the issues center on such notions as definiteness, specificity, old information, affectedness of the object, and dynamic nature of the predicate. These notions all have something to do with event structure. The difference between the SQA value of *books* [–SQA] vs. *the books* [+SQA] might be linked to specificity or definiteness. However, indefinite nonspecific DPs can still be [+SQA] as in *Mary can read a book in one day*. An object must be affected in order to enter into the computation, and only dynamic predicates can be measured. Ideally, we will understand just how tight the connection is and how it can vary from language to language but, at this point, the range of generalizations is still not clear (to me at least).

The second issue raised above involves the shifts in meaning that come with the shift in objects. It has been pointed out that certain objects that have arguably moved to object position undergo a concomitant shift of meaning. This shift is always in the same direction—the new object is crucially the affected argument of the event. Several examples are given below.

(56) Possessor raising constructions (Korean, from Yoon 1990)

a.	John-i	Mary-lul	phal-ul	ttayly-ess-ta
	John-NOM	Mary-ACC	arm-ACC	hit-PST-DECL

'John hit Mary's arm.'

b. * Na-nun Mary-lul phal-ul po-ass-ta
I-TOP Mary-ACC arm-ACC see-PST-DECL
'I saw Mary's arm.'

(57) Double-object constructions

a. Mary taught French to the students (but they didn't learn it).
b. Mary taught the students French (*but they didn't learn it).

(58) Benefactive constructions

a. Mary baked a cake for the children/holidays.
b. Mary baked the children/*the holidays a cake.

(59) *Spray/load* constructions

a. Mary loaded the cookies into the box (but the box wasn't full).
b. Mary loaded the box with cookies (*but the box wasn't full).

There are two ways to react to this observation. One could say that, since the meaning shifts, there must be a different underlying (merged) structure. As discussed earlier, I do not see this as a necessary conclusion.[42] The Katz-Postal hypothesis of the 1960s assumed that transformations could not affect meaning, but current views are quite different, in fact nearly the opposite. Movements often affect meaning, particularly in the computation of scope relations. The other reaction, then, could be that the object shift creates a different computation at the interface level—not so much a shift in scope but a shift in the computation of the event. Being a particular object of a particular predicate in the specifier of a particular event-related head forces this affected reading. For example, in (56a) above, *hit* will affect the DP that is in Spec, ASP, in this case *Mary*, in a specific way. In (58b), since *holidays* cannot be affected in the appropriate way (become a possessor), the double-object structure is out. Granted, this view requires a fairly rich lexical entry. Not only do we have to encode whether or not a verb enters into a certain relation with an accusative-marked DP, the verb must be able to distinguish between DPs. In (59), both possible DPs can have the appropriate relation but, depending on which one actually does, a different entailment holds.

4.5 Language Variation

We have just investigated event structure and Aktionsart using English as the exemplifying language. Languages vary, however, in how they represent the different predicate classes. These variations are important to study as they

[42] In fact, such a conclusion would be problematic since idiom chunks and arguments of other predicates can appear in this position. See Section 2.5.4 for examples.

can provide evidence for the syntactic building blocks that are used in the construction of the different classes. Many researchers take it as given that Accomplishments are, in some sense, very straightforward. A basic transitive verb like *kill* in English, while morphologically simple, is semantically and, for some, also syntactically complex. There is a *Y is killing* Activity followed by an *X is dead* State. In order to undo the final State, something extra is added to strip off the endpoint. Generally the progressive viewpoint aspect can be added (*They were killing the ant*). In many languages, however, while a perfective form of the verb might imply the end result, this result is not entailed. In other words, the end result is defeasible. In the rest of this section, I present data from several such languages. There are two goals. One is empirical—simply to acquaint the reader with the data. The second is to situate such languages in the framework being presented here and to speculate on the relevant parameter. Given that parameters are thought to be housed either in the lexical inventory or in the functional category system of grammar, the aim is to show a way in which this telicity parameter might likewise be located.

4.5.1 Japanese

Several works have investigated the Aktionsart of Japanese predicates (e.g., Kindaichi 1976; McClure 1995; Uesaka 1996). One test suggests that there is no separate class of Accomplishments in this language; rather, Accomplishments act variably like either Achievements or Activities.[43] This test is the suffixation of *te-iru*. As shown below, a *te-iru* construction yields a perfect of result reading with Achievements and a progressive reading with Activities (examples taken from Uesaka 1996: 5–6).

(60) a. ACHIEVEMENT (RESULTING STATE OF ACTION OR PROCESS)
Ki-ga taore-te-iru
tree-NOM fall-*te*-*i*-PRES
'Trees have fallen down (and they are on the ground now).'
b. ACTIVITY (CONTINUATION OF ACTION)
John-ga asob-te-i-ru
John-NOM play-*TE*-*I*-PRES
'John is playing.'

With Accomplishments, however, the reading of the *te-iru* construction is ambiguous between the progressive and the perfect of result (from Uesaka 1996: 17).

[43] In a sense, even with this test, Accomplishments remain a separate class. They are the class of predicates that can act like either Activities or Achievements.

(61) a. John-ga hon-o yom-te-i-ru
John-NOM book-ACC read-*TE*-*I*-PRES
'John is reading the book/John has read the book.'

b. John-ga hon-o kak-te-i-ru
John-NOM book-ACC write-*TE*-*I*-PRES
'John is writing the book/John has written the book.'

This ambiguity also surfaces with Activities that have become Accomplishments through the addition of a goal PP (from Uesaka 1996: 18).[44]

(62) a. John-ga hashir-te-i-ru
John-NOM run-*TE*-*I*-PRES
'John is running.'

b. John-ga gakkoo-ni hashir-te-i-ru
John-NOM school-to run-*TE*-*I*-PRES
'John has run to school/John is running to school.'

This variable behavior shows up in other tests as well, but in a way that clearly sets Accomplishments apart from Activities and Achievements in Japanese. Uesaka uses three constructions to distinguish the Activity, Achievement, and Accomplishment predicate classes.[45] The first two tests are familiar from the discussion above. The predicates are modified by frame adverbials and duration adverbials. In the third test, the predicates are introduced as complements to the verb *owar-* 'finish'. As we see below, Activity predicates may take duration adverbials but are odd with frame adverbials and as complements to *owar-*, while Achievement predicates cannot take duration adverbials nor can they appear as complements to *owar-*. They are also odd with frame adverbials (from Uesaka 1996: 33–36).[46]

(63) ACTIVITIES
a. John-wa sanjikan hashir-ta
John-NOM three.hours.for run-PST
'John ran for three hours.'

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[44] Uesaka notes that many speakers do not allow dative goal phrases with motion verbs in Japanese. In her dialect, this is possible and she points out that such constructions are reported in the literature. I refer the reader to her thesis for details.

[45] She also discussed the class of States, which I do not discuss here.

[46] Uesaka (1996: 35, footnotes 23, 24) points out that (63b) and (63c), as in English, can be made grammatical if there is an implicit endpoint added by context or the preparatory stages are targeted in the case of (63b).

b. ? John-wa sanjikan-de hashir-ta
John-NOM three.hours-in run-PST
'?John ran in three hours.'

c. ? John-wa hashir-owar-ta
John-NOT run-finish-PST
'John finished running.'

(64) ACHIEVEMENTS

a. * Saifu-wa sanjikan pocket-kara ochi-ta
wallet-TOP three.hours.for pocket-from fall-PST
'*The wallet fell from the pocket for three hours.'

b. ? Saifu-wa sanbyoo-de pocket-kara ochi-ta
wallet-TOP three.seconds-in pocket-from fall-PST
'The wallet fell from the pocket in three seconds.'

c. * Saifu-wa pocket-kara ochi-owar-ta
wallet-TOP pocket-from fall-finish-PST
'The wallet finished falling from the pocket.'

Japanese Accomplishment predicates behave differently from Achievements and Activities, but also unlike English Accomplishment predicates in that they appear with both frame and durative adverbials. Like English Accomplishment predicates, though, they can also be complements to the 'finish' predicate (from Uesaka 1996: 38–39).

(65) ACCOMPLISHMENTS

a. John-wa sanjikan tegami-o kak-ta
John-NOM three.hours.for letter-ACC write-PST
'John wrote the letter for three hours.'

b. John-wa sanjikan-de tegami-o kak-ta
John-NOM three.hours-in letter-ACC write-PST
'John wrote the letter in three hours.'

c. John-wa tegami-o kak-owar-ta
John-NOM letter-ACC write-finish-PST
'John finished writing the letter.'

The table in (66) below summarizes these findings. We can see that the three classes are distinguishable and further, as the shaded area shows, that Japanese Accomplishments are different from English Accomplishments. This is the distinction that I want to concentrate on here.

(66)

	ACTIVITIES	ACHIEVEMENTS	ACCOMPLISHMENTS
DURATION	√	*	√
FRAME	?	?	√
finish VP	?	*	√

It seems that Japanese Accomplishments are different from English Accomplishments in that their inherent endpoint is not a necessary part of their meaning. We know that there can be an endpoint since that is what allows the use of the frame adverbial and the selection by 'finish'. The optional lack of the endpoint, as suggested by the licit use of the duration adverbial, is what is interesting. It is also the optional lack of the endpoint that explains why the progressive reading is possible with Accomplishments—and the only choice with Activities. Uesaka also provides more direct evidence that the endpoint is not necessarily part of the meaning of an Accomplishment predicate by showing that what is an entailment in English is merely an implicature in Japanese. This difference accounts for the impossibility of (67a) and the possibility of (67b) (adapted from Uesaka 1996: 82).

(67) a. * I boiled the water but it didn't boil.
b. Wakashi-ta keredo wakanakatta
boil.TRANS-PST though boil.INTRANS.NEG.PST
'(I) boiled (it), but (it) didn't boil.' [47]

In terms of the type of event composition that has been discussed above, we can assume that Japanese Accomplishments optionally have the low endpoint head proposed by Hoekstra. More specifically, let us say that English Accomplishments include an endpoint in their meaning. I place this endpoint (as in Hoekstra 1988; Snyder 1995) low in the structure. The resulting computation of ASP will capture this endpoint. Japanese Accomplishments would represent it only optionally.[48] This will be reflected in the computation of ASP. If the endpoint is present, ASP will be [+telic] and the construction will pattern with the other [+telic] class, Achievements, for the relevant tests. If the endpoint is not present, ASP will be computed as [–telic], and the construction will pattern with the other (dynamic) [–telic] class, Activities. Below we shall see that this type of Accomplishment class is not unusual and exists in a range of language families.

[47] This translation was provided by Junko Shimoyama.

[48] I suggest that there is always a complement to V_2 and it is the specification of this endpoint that encodes the telicity of these predicates. It might be that these zero complements are vague for Japanese Accomplishments or ambiguous between being telic (like the P *to*) or atelic (like the P *toward*).

4.5.2 Chinese

It has been pointed out that Chinese (Mandarin) is also a language in which Accomplishment predicates do not entail inherent endpoints.[49] Tai (1984) gives the following examples to show this. Like in Japanese and unlike in English, the endpoint is defeasible, as shown in (68a). In order to insist on the Achievement of the final point, a resultative V-V compound can be formed, as in (68b) (adapted from Tai 1984: 291).[50]

(68) a. Zhangsan[51] sha-le Lisi liangci, Lisi dou mei si
Zhangsan kill-PERF Lisi twice Lisi QUANT NEG die
'Zhangsan killed Lisi twice but Lisi didn't die.'

b. * Zhangsan sha-si-le Lisi liangci, Lisi dou mei si
Zhangsan kill-die-PERF Lisi twice Lisi QUANT NEG die
'Zhangsan killed Lisi twice but Lisi didn't die.'[52]

It is important to point out that this is very different from the system found in Slavic languages, where the bare form of the verb encodes imperfective meaning. The distinction in Japanese and Chinese is not an imperfective vs. perfective distinction. In these languages, the first interpretation of the bare verb form is the telic interpretation. The implicature is that the endpoint has been reached. Further, both languages have a system of outer aspectual distinctions—viewpoint aspect distinctions—that work independently of this system of telicity. Now we will turn to a very different language family that shows similar variability in the Aktionsart system.

4.5.3 Tagalog and Malagasy

Like Chinese and Japanese, both Tagalog and Malagasy have atelic Accomplishments.[53] The facts of Tagalog are clearly presented in Dell (1983). Using terminology from Schachter and Otanes (1972), Dell discusses a productive alternation of verb forms in Tagalog. Verbs may come in either the neutral form

[49] Chinese will be discussed more in Chapter 8. Interested readers should also look at a paper by Soh and Kuo (2005), where it is shown that some predicates are telic.

[50] Tai translates (68a) as 'John performed the action of attempting to kill Peter, but Peter didn't die'.

[51] The form of Zhangsan (Zhang San) varies depending on the author (Tai 1984; Sybesma 1992; Juffs 2000). I have kept the form of the source.

[52] Tai does not include 'twice' in his translation which I assume was just an oversight.

[53] I will continue to call these predicates Accomplishments though, in fact, they are not necessarily telic. They are distinguishable as a class, however, since the primary reading is telic, unlike the interpretations of Activities in these languages.

(N) or the Ability and Involuntary Action form (AIA or A). As the label suggests, the neutral form is most commonly used but, as in the languages discussed above, the natural endpoint of such a form is implied but not entailed. A typical example is given below (Dell 1983: 185). The relevant verb forms are indicated as being either N(eutral) or A(bility); otherwise the glossing is made consistent with other Tagalog examples in this book.

(69) **Sinipsip** niya ang buko, pero may nakabara sa istro,
N.TT.PERF.aspirate GEN.3 NOM coconut but have obstruct *SA* straw

kaya hindi niya **nasipsip**.
hence NEG GEN.3 A.perf.aspirate
'He sucked at the coconut milk, but the straw was blocked and nothing came (into his mouth).'

While the English translation is modified to make sense in English, a more accurate translation would be something like 'He aspirated the coconut milk but the straw was blocked so he didn't (succeed in) aspirate(-ing) (it)'.

Not surprisingly, Malagasy, a related language, has a similar alternation. This alternation will become the focus of much of Chapter 7 so I will just introduce the issue here. The examples below exemplify the same contrast that was seen in Tagalog. Again this is a productive alternation, and again the natural endpoint of the event is part of a conversational implicature, but not entailed. The "neutral" verb form is given in (70a), while (70b) shows that the endpoint is defeasible. When the verb is affixed with *aha-*, however, the end result is entailed, as (71b) shows.

(70) MALAGASY
a. nisambotra ny alika ny zaza b. ... nefa faingana loatra ilay alika
PST.*I*.captive DET dog DET child but quick too that dog
'The child caught the dog.' '... but the dog was too quick.'

(71) a. nahasambotra ny alika ny zaza b. * ... nefa faingana loatra ilay alika
PST.A.HA.captive DET dog DET child '... but the dog was too quick.'
'The child caught the dog.'

4.5.4 The Telicity Parameter

We have seen several languages from several families that encode telicity in quite a different way from English and other well-studied languages. Endpoints have become definitional in determining aspectual predicate classes: Achievements and Accomplishments must be telic. What would be considered as Accomplishments in Japanese, Chinese, Tagalog, and Malagasy, however, are not necessarily telic in their unmarked form. Importantly, however, they

have some sense of telicity. The endpoint is strongly implied. In an attempt to make the English translations more accurate, one could use, for the neutral forms, the progressive, as in 'The child was catching the dog', or add additional information such as 'The child set out to catch the dog' or 'The child intended/tried to catch the dog'. However, these translations are at best silent about the successful completion of the action and at worst carry a strong implicature that the completion was unsuccessful.

What appears to be different about these languages is that the verb itself lacks (or only optionally has) whatever it takes to designate the natural endpoint. In other words, English *catch* is, in fact, $\sqrt{\text{CATCH}}$ + telic while Malagasy *misambotra* is $\sqrt{\text{CATCH}}$ (+ telic). Now the question is how this telicity is represented. I set out two possibilities. Which one is preferable depends more generally on where one assumes the telicity value of the verb is encoded. It could be part of the meaning of the root, that is, the root CATCH contains this information. An alternative is that the larger lexical entry, the one that can be spread through the various heads of the L-syntax domain, namely the E-word, contains a zero head that encodes telicity. Now another set of questions can be asked concerning which head encodes telicity. This head could be located in the PP complement position, similar to a Hoekstra/Snyder view. Alternatively, it could be located in ASP, where telicity is computed. The various positions of telicity are the topic of the first half of Chapter 7, so I shall shelve the discussion until then.

4.6 Conclusion

The issues raised in this chapter are large ones, and ones that require more breadth and depth of study before they can be confidently given an account. One of my goals was to show that the basic phrase structure set up in Chapters 2 and 3 is correlated with event structure phenomena. The link between semantics and the syntactic and morphological representations of this semantics can be made quite direct. Further, I argue that all three components converge in having Aspect appear internal to the VP. My other goal was to set up the framework needed to discuss the phenomena that will be investigated in the remaining chapters. In Chapter 5, I investigate the interaction of both situation aspect and viewpoint aspect and the form of the direct object. In Chapter 6, I outline a view of the lexicon that allows, within a predetermined domain, access to both the lexicon and syntax. In Chapter 7, I look more closely at the particular makeup of Achievements, and in Chapter 8, I examine various places within the VP where endpoints can be represented and suggest a syntactic representation for coercion facts.

The rest of my proposals are based on certain assumptions that I outline here. Two basic ideas are taken from de Swart (1998). One is that there are various layers of aspectual computation and the second is that, in spite of these

many layers, there is still a two-way partition between situation aspect and viewpoint aspect. I give syntactic content to these claims by computing situation aspect (Aktionsart) within the VP and viewpoint aspect VP-externally. The layering of the computation can occur in both domains, while the hierarchy of computation is determined by the hierarchy of the syntactic heads. With these assumptions laid out explicitly, we can move on to the following chapters.

Chapter 5
Interaction of Objects and Aspect

In the previous chapters, I have argued that, within the VP, there is a landing site position for objects and that this position is the Specifier position of an event-related category, Inner Aspect. This raises the question of whether there is any relation between objects and aspect. In our discussion of aspectual predicate classes in the last chapter, we saw that the shape of the object can affect the aspectual predicate class. This is at least suggestive of a link between objects and Inner Aspect. In this chapter, I look at the relationship more closely, especially as it relates to grammatical issues such as case marking and syntactic position. I show how they may be related and then answer specific questions about this relationship.

5.1 The Interaction of Case and Aspect

In our investigation of the relationship between the grammatical representation of objects and aspect, we will see that both viewpoint and situation aspect appear to have an effect on the grammatical marking of the object. I will eventually argue, however, that only situation aspect, that is, Inner Aspect, has a direct relationship with the object. This means that any apparent effect of viewpoint aspect on the form of the object must be indirect. This conclusion is important to the overall thesis of this book in that any change in the form of the object will be due to VP-internal factors.

5.1.1 Objects and Viewpoint Aspect

In discussions of the relationship between grammatical case and viewpoint aspect, Finnish is usually the exemplifying language. Below is an example that shows a difference in viewpoint aspect that is indicated entirely by a change of case (from Arad 1998, credited to Pylkkänen 1997). In (1a), where the object appears with partitive case, the meaning is imperfective/incomplete. With

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accusative case on the object, as in (1b), the meaning is perfective/complete (from Arad 1998: 74, footnote 15).

(1) a. Anne Rakensi taloa
Anne built PART-house
'Anne was building a/the house.'

b. Anne rakensi Talon
Anne built ACC-house
'Anne built a/the house.'

Furthermore, the syntactic position of an object also seems to depend on viewpoint aspect, as we have already seen in Chapter 2. The clearest case is that of Scots Gaelic where, as Ramchand (1997) shows, depending on the verb's aspect, the object appears either after the verb (2a) or before it (2b) (Ramchand 1997: 51–52).

(2) a. Bha Calum a'faicinn **a'bhalaich** PAST PERIPHRASTIC
be-PAST Calum *AG* see-VN boy-GEN
'Calum saw the boy.'

b. Bha Calum air **am balach** (a) fhaicinn PAST PERFECT
be-PAST Calum *AIR* the boy-DIR *A* see-VN (PERIPHRASTIC)
'Calum had seen the boy.'

Crucially, it is the perfective form that takes the preverbal object, while the imperfective (present, past) has the postverbal object. The correlation of perfective with accusative case or higher (moved) objects is pervasive in a wide range of genetically unrelated languages.

In the case of Hindi, Mahajan's work (Mahajan 1990), outlined in Chapter 2, shows that the perfective form, as in (3b), creates a situation where the object is in a higher position than the object of an imperfective construction, as shown in (3a).[1]

(3) a. raam roTii khaataa thaa (Mahajan 1990: 76)
Ram(M) bread(F) eat.IMP.M be.PST.M
'Ram (habitually) ate bread.'

[1] The interaction with case assignment is different in Hindi as, according to Mahajan, the imperfective assigns accusative case while the perfective does not. This is the reverse of Finnish. However, accusative, absolutive, and nominative case are all zero-marked in Hindi, so giving them names is theory-internal. One can think of it as follows: the functional head related to structural case is associated with perfectivity and the accusative case assigned by imperfective verb forms is an inherent case.

b. roTii raam ne khayii (Mahajan 1990: 79)
bread(F) Ram(M) ERG eat.PERF.F
'Ram ate bread.'

While Hindi is a language with fairly free word order, Majahan argues that the surface position of the DP in (3b) is higher in the structure than that of the DP in (3a). Finnish, Scots Gaelic and Hindi, then, are three languages in which viewpoint aspect appears to affect the syntactic realization of an object by affecting the case and/or the position of that object. Before concluding, however, that the main indicator of Case shift is viewpoint aspect, let us look at interactions between case assignment and situation aspect. My aim is to show that Case is more closely related to situation aspect than to viewpoint aspect and that the link between viewpoint aspect and Case is always mediated by situation aspect.

5.1.2 Objects and Situation Aspect

We saw in the previous chapter the importance of the presence and shape of an object for the determination of a predicate's aspectual class.

(4) a. He ran *in five minutes/√for five minutes.
b. He ran the race √in five minutes/*for five minutes.

(5) a. He drank the beer √in five minutes/*for five minutes.
b. He drank beer *in five minutes/√for five minutes.

It is the presence of the object *the race* with the verb *run* in (4b) that makes the event telic (thereby allowing the frame PP *in five minutes*). But as (5) shows, it is not simply the *presence* of an object that is important but also its *shape*. If the object is a bare plural or a mass noun, as in (5b), no explicit endpoint is encoded and the event remains atelic (thereby allowing the duration PP *for five minutes*). Now the question is whether the case on the object can affect the aspectual class of the predicate, or in other words, affect situation aspect. One example from English is the conative, as shown below.

(6) a. The hunters shot the deer (*for five minutes).
b. The hunters shot at the deer (√for five minutes).

(7) a. The child ate the apple (*for five minutes).
b. The child ate at the apple (√for five minutes).[2]

[2] *Eat at* does not exist in many English speakers' dialect, but they nevertheless find (7b) quite comprehensible. While not a minimal pair, one can see the difference between *The child ate the apple* and *The child picked at the apple*.

Another way that situation aspect interacts with case assignment involves the distinction between State predicates and eventive predicates. As Noonan (1992b) points out, many languages appear to have a restriction against accusative case assignment by stative predicates. She gives examples of this from Irish and I add some examples from Japanese.

In Irish, there are no transitive stative predicates that would be the counterparts to the English verbs *know, fear, respect,* etc. The relevant structures for these verbs in Irish are those given in (8).

(8) a. Tá gaeilge ag Fliodhais (Noonan 1992b: 186)
is Irish at Fliodhais
'Fliodhais knows Irish.'

b. Ta eagla roimh an bpúca ag Ailill
is fear before the Puca at Ailill
'Ailill fears the Puca.'

c. Tá meas ar Meadhbh ag Ailill
is respect on Meadhbh at Ailill
'Ailill respects Meadhbh.'

In Japanese, stative predicates also affect case assignment to the object. Many stative predicates in Japanese assign nominative case to their object, as shown in (9a) below. Compare this to a regular dynamic verb, which would assign accusative case, as in (9b).[3]

(9) a. John-ga nihongo-ga wakaru (koto)
John-NOM Japanese-NOM understand fact
'John understands Japanese.'

b. John-ga nihongo-o hanasu
John-NOM Japanese-ACC speak
'John speaks Japanese.'

Now we will return to Scots Gaelic, Hindi, and Finnish. Ramchand (1997) shows very clearly that case assignment in Scots Gaelic is also sensitive to the situation aspect of the predicate. Recall that certain aspectual forms of the verb require the objects to be in the genitive case and others require them to be in the direct case. This is summarized in the table below.

[3] *Koto* is added to the stative construction to avoid use of the topic marker *-wa*.

(10) Scots Gaelic

	PAST PERIPHRASTIC	PRESENT PERIPHRASTIC	PRESENT PERFECT PERIPHRASTIC	PAST PERFECT PERIPHRASTIC	SIMPLE PAST
CASE	Genitive	Genitive	Direct	Direct	Direct
POSITION	Post-V	Post-V	Pre-V	Pre-V	Post-V

To begin our discussion of the interaction between case and situation aspect, we first note that stative verbs may be used with the periphrastic present or periphrastic past, as shown in (11).[4]

(11) a. Bha mi 'ga chreidsinn PAST PERIPHRASTIC
be-PST I-DIR *AG*.he-GEN believe-VN (Ramchand 1997: 45)
'I believed him.'

b. tha mi ag iarraidh a'bhuill PRESENT PERIPHRASTIC
be-PRES I-DIR *AG* want-VN the ball-GEN (Ramchand 1997: 48)
'I want the ball.'

In both past and present periphrastic, the object, if there is one, receives genitive case. These stative verbs, however, may not appear in forms in which the object is given direct case marking, such as the simple past or the past or present perfect periphrastic, and retain their stative meaning. As we see below, there is a meaning shift from stative to eventive in (12a, b, b') where there is direct case on the direct object.

(12) a. Chreid mi e SIMPLE PAST
believe-PAST I-DIR he-DIR (Ramchand 1997: 45)
'I came to believe him.'

b. Dh'iàrr mi am ball SIMPLE PAST
iarr-PAST[5] I-DIR the ball-DIR (Ramchand 1997: 48)
'I got the ball.'

b'. Tha mi air am ball iarraidh PRESENT PERFECT
be-PRES I-DIR *AIR* the ball-DIR want-VN PERIPHRASTIC
'I have got the ball.' (Ramchand 1997: 49)

[4] *'ga* is a portmanteau for *ag* and the genitive pronoun (see Ramchand 1997: 30). Normally genitive DPs appear after the V.

[5] Here, rather than glossing the root, Ramchand leaves it in its untranslated form *iarr*.

Two things are shifting, however, in these structures. Concomitant with the shift of case is a shift of viewpoint aspect. We can see that what is at stake is not so much the case marking of the object, however, as the choice of viewpoint aspect, which limits the type of situation aspect we can have. Looking at verbs that do not take direct objects, there is still a restriction on the situation aspect of verbs that can appear in the perfect constructions. Verbs such as the stative reading of 'look' or the stative reading of 'run' may appear in imperfective constructions, as in (13a, b). However, they are not allowed in, for example, a simple past construction as in (13c, d).

(13) a. Bha e a'coimhead gòrach PAST PERIPHRASTIC
be-PAST he-DIR *AG* look-VN silly (Ramchand 1997: 44)
'He looked silly.'

b. Bha abhainn a'ruith seachad PAST PERIPHRASTIC
be-PAST river-DIR *AG* run-VNpast (Ramchand 1997: 45)
'A river ran past.'

c. * Choimhead e gòrach SIMPLE PAST
look-PAST he-DIR silly (Ramchand 1997: 44)
'He looked silly.'

d. * Ruith abhainn seachad SIMPLE PAST
run-PAST river-DIR past (Ramchand 1997: 45)
'A river ran past.'

When used in the nonstative (and nonidiomatic) sense, the verbs can, not surprisingly, appear in this form as shown below.

(14) a. Choimhead e a-mach SIMPLE PAST
look-PAST he-DIR out (Ramchand 1997: 44)
'He looked out.'

b. Ruith gille seachad SIMPLE PAST
run-PAST boy-DIR past (Ramchand 1997: 45)
'A boy ran past.'

Ramchand points out that verbs that have no dynamic meaning, such as *ciallachadh* 'to mean', can only appear in a periphrastic construction (imperfective) such as the periphrastic present given in (15) and not in a simple past construction (perfective).

(15) Dè tha thu a'ciallachadh? (Ramchand 1997: 39)
What be-PRES you-DIR *AG* mean-VN
'What do you mean?'

It is quite common for viewpoint aspect to place restrictions on situation aspect. For example, in English, the progressive is at best odd with most stative predicates and Achievement predicates, as the data below show.[6]

(16) a. * The children are knowing the answer.
b. * The children are finding the key.

Further, the sort of shift one gets in examples such as (12a) occurs cross-linguistically. In the Spanish example below, the stative reading of the verb *conocer* 'to know [people, places]' is expressed when the verb appears in the imperfective form (17a). When the verb appears in the perfective, however, a slightly different meaning emerges, as in the Scots Gaelic example (12a) above. This is shown in the translation given for (17b).[7]

(17) SPANISH
a. Cuando estudiaba en la escuela, **conocía** muchas personas.
when study.IMP.1SG in DETschool know.IMP.1SG many people
'When I was in school, I knew many people.'

b. **Conocí** a Juan en 1980
know.PERF.1SG in a Juan 1980
'I met Juan in 1980.'

Even in English, a dynamic reading of a stative verb can be coerced with the relevant context, as shown in (18) below.

(18) All of a sudden, the child knew the answer.

In Spanish, the same effect is achieved via a change in viewpoint aspect with the verb *saber* 'to know [information]', as shown below.

(19) a. Hace dos días sabía la respuesta.
exist two days know.IMP.1SG DET answer
'Two days ago I knew the answer.'

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[6] To the extent that (16b) is acceptable, it describes the preparatory stage of "looking for" not "finding"; see Smith (1991: 114) for more discussion of this point.

[7] Thanks to Gustavo Beritognolo for the Spanish data and related discussion.

b. De pronto supe la respuesta
from quickly know.PERF.1SG DET answer
'Suddenly, I came to know the answer.'

The more striking examples are ones where the meaning of the verb seems to change more dramatically, as in the shift from 'want' to 'get' in the Scots Gaelic example in (11b) and (12b) above. Ramchand (1997) suggests that verbs such as *iarr-* in Scots Gaelic are difficult to represent appropriately in an English translation. She writes:

> It is important to note that while English must use two different verbs to gloss these different examples, this is a reflection of the lack of a suitable equivalent in that language of the quite specific and consistent content of the SGaelic root. The SGaelic verb means really something more like 'seek to get'—the accomplishment interpretation expresses the completion of the act, and thus can imply the actual 'getting', whereas the stative or process interpretation emphasizes the state of 'wanting'. (Ramchand 1997: 47–48)

Ramchand stipulates that the meaning is underspecified for aspectual information and that, once this information is supplied, the lexical item will take on the appropriate meaning.[8]

It is interesting to note that Hindi appears to show the same sort of effects. While not mentioned explicitly, the data and the translations given by Mahajan echo Ramchand's observations on the Scots Gaelic data. Note the two examples given below.

(20) a. siitaa-ne laRkaa dekhaa (Mahajan 1990: 103)
Sita-ERG boy(M) saw-M
'Sita saw the boy.'

b. siitaa laRkaa dehk rahii hE
Sita boy(M) see-PROG-be-F
'Sita is looking for a (suitable) boy (to marry).'

The change in viewpoint aspect (from perfective in (18a) to imperfective in (18b)) brings with it not only a change of status of the object (from object agreement to subject agreement) but also a change of situation aspect (from a telic event to an atelic event).[9] Mahajan brings these data to the discussion because of a further change in the object, from specific to nonspecific. Specificity and the effect it has on object placement will be discussed at greater length in the next section.

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[8] In a footnote, Ramchand notes that the Accomplishment form of this verb can also mean 'a completed act of seeking to get'.

[9] Here I assume that 'see' is the Achievement version of this verb.

Before turning to the question of specificity, however, we return to the Finnish data which are so often referred to. It turns out that Finnish case marking interacts not only with viewpoint aspect, but also with situation aspect. Objects of stative verbs are also marked with partitive case, as shown below (taken from Arad 1998: 74, and credited to Pylkkänen, personal communication).

(21) Minä rakastan sinua / * sinut
I love-1SG you-PART / you-ACC
'I love you.'

I propose that Case alternations of the type we have just seen are dependent on only VP-internal information. The two heads that are directly involved are V_1 and (Inner) ASP, and the landing site for elements checking accusative case is Spec, ASP. I categorize the Case variations we have seen into four types. These are summarized below.

(22) CASE VARIATION

SITUATION ASPECT	*States [–dynamic]* no accusative (e.g., Irish, Japanese, Finnish)
	Activities [–telic] no accusative (e.g., English)[10]
VIEWPOINT ASPECT	*Imperfective [–bounded]* no accusative (e.g., Finnish)
	Perfective [+ bounded] object movement for case (e.g., Hindi, Scots Gaelic)

The generalization appears to be that dynamism and telicity/boundedness favor accusative case assignment, within the domains of both situation and viewpoint aspect. This conclusion is further confirmed by the data showing that perfective aspect and placing a bound on an event also force the event to be dynamic. Next we shall relate these observations to the phrase structure. In the previous chapter, I suggested that V_1 encodes dynamicity and the ASP head encodes telicity. Now let us look at the four cases in turn in the context of phrase structure.

We have seen that stative predicates in some languages do not assign accusative case to their logical objects. Following Noonan (1992a, b), I assume that the VP-internal structure of a stative verb determines its case-assigning abilities.

[10] As discussed in the previous chapter, the object in question must be an incremental object in order to be relevant. Since the direct objects of *push* or *stir* do not measure out the event, accusative case assignment is irrelevant.

The V_1 of all stative verbs will be [–dynamic]. In the unmarked case, this will be all the information given in V_1, in some senses similar to a copula verb like *be* in English. Some languages, however, will allow this head to also contain a case feature making it similar (but not identical) to the English verb *have*.[11]

The second example of case variation is tied to the telicity of the situation and is related to observations made by, for example, Tenny (1987, 1994). In order to measure out an event and thereby provide an endpoint, an object must be in Spec, Asp. In English conative constructions like *to eat at an apple*, the logical object does not move to Spec, Asp, is not assigned accusative case, and does not provide an endpoint for the event. In the first two cases given in the table in (22), we can see how the VP-internal configuration affects both case assignment and interpretation.

The second two cases in (22) are the ones that raise problems for the view that only VP information can affect case assignment to an object. Looking first at the Finnish case, I suggest that three problems may point to a similar solution. My proposal is tentative and is the subject of ongoing research, but my impression is that imperfective/progressive, while technically Outer Aspect, can have interesting effects on Inner Aspect. We can see this using observations from semantics, morphology, and syntax. In the domain of semantics, imperfective can be seen as stripping the endpoint off a telic situation. While *I built the house* entails *the house was built*, *I was building the house* does not. In morphology, we have seen Outer Aspect appear on an Inner Aspect head in the case of Tagalog [+incomplete]. In syntax, we have seen that the imperfective can turn off the assignment of accusative case. Exactly how this is done depends on the theoretical tools available to us. It is not clear what tool would be able to encode this dependency. Whatever it is, it must have the semantic effect of modifying the contents of Inner Aspect, the morphological effect of realizing morphemes, and the syntactic effect of neutralizing a case feature.[12]

The final case I treat separately, since the use of perfective affects not only case assignment but also the interpretation of the predicate. We saw this in Scots Gaelic and Hindi. As I argue in Chapter 8, these are instances of coercion. Perfective Outer Aspect selects situations of a certain shape. More specifically, perfective Outer Aspect requires a dynamic V_1. In order to satisfy these selectional requirements, a dynamic V_1 is coerced (I shall save the details of this for Chapter 8). Further, the case marking specifications of the Inner Aspect are modified by the perfective nature of the Outer Aspect, creating the other observable changes, namely the movement of the object to the derived object position, Spec, Asp.

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[11] There may be cases where the copula be itself assigns case (see Lasnik (1991) and Maling and Sprouse (1995)). This issue requires further investigation.

[12] Cinque places progressive aspect between terminative and completive. I assume that completive is most similar to Inner Aspect. Progressive would be the lowest Outer Aspect and therefore the one that can enter into an Agree relationship with Inner Aspect.

A more careful study of case and its interaction with both viewpoint aspect and situation aspect is needed before drawing any firm conclusions, but my hypothesis is that case is related only to situation aspect, in particular the specifications of V_1 and (Inner) Asp. Apparent connections between accusative case and viewpoint aspect are indirect. Now we turn to the question of the object position.

5.2 The Position of Incremental Themes[13]

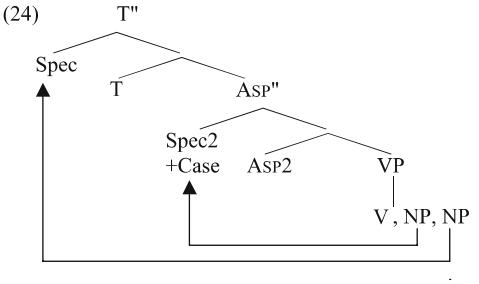
In this section, I look at claims in the literature that Themes that measure out an event must appear outside of the VP. We have already seen that the complement structure of the V is involved in the determination of aspectual verb classes. The point of this section, however, is to show that these complements may remain within the VP throughout the syntactic derivation. This is particularly crucial in the discussion of DP complements since there have been claims that only DPs that have moved outside of the VP (generally to AGR_O) may, in fact, take part in aspectual computation (e.g., Borer 1994; van Hout 1996). For example, van Hout outlines her CHESS-mapping system (CHecking Event-Semantic Structure). This is given below (taken from van Hout 1996: 206).

(23) The CHESS-mapping conditions: CHecking Event-Semantic Structure:

1. Mapping requires that the event structure of a predicate be identified.
2. There are two structural argument positions: the specifier positions of AGR_S and AGR_O. An argument in either of these specifier positions identifies an event or subevent by referring to an event participant that is involved in that (sub)event.
3. Telic event type features must be checked in AGR_OP.

Borer also relates telicity to the assignment of accusative case and a specific position in the syntactic structure. In her view, there are no positions within the VP; the head V is projected with a list of arguments that then appear in Specs of functional categories. A structure where there is an accusative object is presented in (24) below (Borer 1994: 30).

(24)



[13] Much of the material in this section appeared in Travis (2005a).

For Borer, Asp2 represents the position for the Event Measurement (EM). In this view of how syntactic structure represents event structure, it is crucial that the position of the event-measuring object be external to the VP.[14] These views of the relationship between phrase structure and event structure are similar to the one presented here in that derived objects appear in a position connected to aspect and telicity. They fly in the face, however, of the claim that the derived object position or the Aspect head that encodes telicity are both crucially VP-internal. We will turn to this issue next.

5.2.1 German VP-Internal Objects

I begin by looking at data from German because German was used in some of the original research on object movement and the correlation of object movement with interpretation (Diesing 1992; Kratzer 1996). My goal is to show that DPs that do not move out of the VP, overtly or covertly, can still affect the interpretation of the event structure of the verb. My aim, then, is to find a DP that is interpreted within the VP and show that this DP can measure an event. I look at indefinites because indefinites are ambiguous between a quantificational reading and an existential reading. The claim is that the two readings come from two different structures. Quantificational indefinites are assumed to move out of the VP and are thereby interpreted in the restrictive clause of a sentence. Existential indefinites are purported to remain within the VP and from this position are interpreted within the nuclear scope. Given that the difference in interpretation can be difficult to determine, I will rely heavily on the syntactic tests that have been argued to distinguish the two uses structurally.

To get a flavor of the issues, let us look at the sentence below, which is ambiguous between a specific reading and a nonspecific reading (taken from Flegg 2004).

(25) I am looking for a book about giraffes.

A book about giraffes may be specific, indicating a book that the speaker has in mind and is known to exist. It may also be nonspecific, however: the speaker does not have a specific book in mind and, while such a book may exist, there is also a possibility that it does not exist. A follow-up comment can disambiguate the two readings. With the specific reading, the follow-up in (26a) is appropriate, while the follow-up in (26b) is not. With the quantificational reading, the opposite is true: now (26b) is appropriate while (26a) is not.

[14] To be fair, since Borer technically has no positions within the VP, appearing outside the VP is trivial. What is more important to me is that the event measurement position of the object be below the merged position of the external argument.

(26) a. It has pictures in it. SPECIFIC BOOK
b. It must have pictures in it. NONSPECIFIC BOOK

Now let us turn to the syntactic tests that have been used to support this structural distinction. One of the tests that Diesing uses to determine whether a DP remains within the VP or not involves extraction. The idea is that extraction out of a DP that itself has moved out of the VP will violate Huang's (1982) Condition on Extraction Domains.[15] We will see two uses of the extraction tests below. The type of extraction that Kratzer (1996) uses is quantifier split. Her claim is that the subjects of individual-level predicates such as *wissen* 'know' are external to the VP while subjects of stage-level predicates such as *helfen* 'to help' are generated within the VP. She supports this claim with extraction facts. The data below show that a quantifier can be split from a subject DP that is arguably still within the VP, as in (27), and that it cannot be split from a subject DP that it not within the VP, as in (28).

(27) a. ... weil uns [viele Lehrer] geholfen haben
since us many teachers helped have
'... since many teachers helped us.'

b. $[\text{Lehrer}]_i$ haben uns $[\text{viele}]_i$ geholfen
teachers have us many helped
'As for teachers, many of them helped us.'

(28) a. ... weil das [viele Lehrer] wissen
since this many teachers know
'... since many teachers know this.'

b. * $[\text{Lehrer}]_i$ haben das $[\text{viele}]_i$ gewusst
teachers have this many known
'As for teachers, many of them have known this.'

Another set of extraction facts comes from the *was für* split in German. Data like (29) and (30) below are meant to show once again that elements that remain within the VP, in this case objects, allow extraction out of them. First we see that there is a difference in interpretation depending on whether the object DP appears to the left (29a) or the right (29b) of the adverb *immer* 'always'. The bare plural gets a nonspecific reading in (29a) and a specific reading in (29b).

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[15] The Condition on Extraction Domains (Huang 1982: 505) is given below:

CONDITION ON EXTRACTION DOMAINS
A phrase A may be extracted out of a domain B only if B is properly governed.

(29) a. … dass Hilda **immer** Sonaten von Dittersdorf spielt
that Hilda always sonatas by Dittersdorf plays
'… that Hilda is always playing sonatas by Dittersdorf.'

b. … dass Hilda Sonaten von Dittersdorf **immer** spielt.
that Hilda sonatas by Dittersdorf always plays
'If it is a sonata by Dittersdorf, Hilda plays it.'

Now we apply the syntactic test of extraction to these two examples. The lower DP allows extraction, as shown in (30a), while the higher DP does not, as shown in (30b).[16]

(30) a. Was_i hat Hilda **immer**$[_{DP}\ t_i$ für Sonaten] gespielt?
what has Hilda always for sonatas played
'What kind of sonatas did Hilda always play?'

b. * Was_i hat Hilda $[_{DP}\ t_i$ für Sonaten] **immer** gespielt?
what has Hilda for sonatas always played

As a final test for which DPs appear internal to the VP, we turn to a particular class of verbs that Diesing (1992) claims have only VP-internal objects. She shows that verbs of creation do not let their objects undergo scrambling in German.

(31) a. dass Otto **immer** *Büche über Wombats* schreibt
that Otto always books about wombats writes

b. * dass Otto *Bücher über Wombats* **immer** schreibt
that Otto books about wombats always writes

She proposes that this syntactic restriction in German reflects a semantic restriction that is exhibited more generally. Indefinite objects of creation verbs will be restricted in interpretation: they do not allow the quantificational reading. This correlates with the syntactic behavior of these DPs since they are unable to appear outside the VP. Diesing gives further data supporting her claim that creation verbs do not have quantificational objects. Her examples from English appear below.

(32) a. I usually write a book about slugs.
b. * I usually write any book about slugs.
cf. I usually buy any book about slugs.

[16] It is not clear whether this construction is ungrammatical for purely syntactic reasons given the specificity requirements on the fronted object.

c. * I usually write the answers that you do.
cf. I usually like the answers that you do.

Example (32a) is a sentence with a creation verb. (32b) shows that the quantificational use of *any* is not possible, while (32c) shows that Antecedent Contained Deletion structures are not possible with the indefinite object of a verb of creation. Diesing's conclusion is that indefinite objects with verbs of creation can only be interpreted VP-internally.

Using the tests just discussed, I now return to the question of whether a VP-internal object can measure out an event. In each example, I use verb choice, extraction, and position with respect to an adverb to ensure that the DP's position is in fact VP-internal. In (33) and (34), I combine at least two of these tests. First of all, the head of the VP is a creation verb, *schreiben* 'to write'. If Diesing is right, a nonspecific object of such a verb must remain within the VP. Further, the object in this construction has undergone quantifier split in (33) and *was für* split in (34). As shown in the examples above from Kratzer and Diesing, elements that have undergone quantifier split or *was für* split must have remained within the VP. Finally, the element left behind by quantifier split is to the right of two adverbs in (33), showing that the DP is still within the VP. In (33b) and (34b), however, we can see that these VP-internal DPs are capable of measuring the event. In each case the event is telic and can be modified by a frame PP *in nur einer Woche* 'in only one week' and *in einer Stunde*'in one hour', respectively, showing that these DPs have made the predicate telic.[17]

(33) a. [Atikel]$_i$ habe ich schon einmal [einen]$_i$ geschrieben.
article have I already once one written
'As for articles, I already wrote one once.'

b. [Artikel]$_i$ habe ich schon einmal [einen]$_i$ in nur
article have I already once one in only

einer Woche geschreiben.
One week written
'As for articles, I already wrote one once in only one week.'

(34) a. [Was]$_i$ hat Otto [für ein Buch]$_i$ geschrieben?
what has Otto for a book written
'What kind of book did Otto write?'

[17] I thank Eva Dobler and Susi Wurmbrand for help with these data.

b. [Was]$_i$ hat Otto [für ein Buch]$_i$ in einer Stunde
what has Otto for a book in 1 hour

geschrieben?
written
'What kind of book did Otto write in one hour?'

I am assuming that constructions such as these argue that VP-internal material is capable of entering into the computation of aspectual verb classes. If this effect is achieved by having the relevant DPs move to a position where they may enter into the computation of event structure, then this position must be VP-internal.

5.2.2 Turkish and Malagasy Objects

Aydemir (2004b) has similarly observed that Turkish DPs may measure out an event from a VP-internal position. She claims that there are three different positions for objects in Turkish: (i) adjacent to the V, (ii) within the VP but not necessarily adjacent to the V, and (iii) outside the VP.[18] DPs in positions (ii) and (iii) can measure out the event. In other words, a DP that has not moved out of the VP is able to measure out the event and make the predicate telic.

5.2.2.1 Turkish Objects

First we note that there are three different types of objects in Turkish (see Kornfilt 1984; Aydemir 2004a, b). One type of object must be bare (no adjectives, determiners, or number); a second type may appear with these elements, but has no case marking; and the third type not only may appear with these elements but is also overtly marked for case. Some examples of each are given below (taken from Aydemir 2004b).

(35) a. Yasemin anahtar kaybet-ti BARE N
Yasemin key lose-PAST
'Yasemin lost keys.'

b. Yasemin bir anahtar kaybet-ti FULL DP (NO CASE)
Yasemin one key lose-PAST
'Yasemin lost a key.'

[18] Kornfilt (1984: 206ff and especially 250, footnote 27) also describes a typology of direct objects in Turkish. I will concentrate on Aydemir's account as it relates the object typology to event structure.

c. Yasemin anahtar-ı kaybet-ti CASE-MARKEDDP
Yasemin key-ACC lose-PAST
'Yasemin lost the key.'

Aydemir shows clearly that the three nominal arguments are syntactically distinct. First, the bare N cannot be modified; a prenominal adjective is forced to have an adverbial interpretation (see (36a)). Second, the bare N cannot be elided, though the whole predicate can be (see (36b)). Finally, the bare N does not provide a referent in the discourse (see (36c)).

(36) a. Mehmet kötü araba kullan-ıyor
Mehmet bad car use-PROG
'Mehmet drives badly.'

b. Bütün gün kitap oku-du-m, *sana-a da oku-ma-n-i
All day book read-PAST-1SG you-DAT too read-NOM-AGR.2SG-ACC

tavsiye ed-er-im
recommend-AOR-1SG
'I read books/did book reading all day, I recommend you to read (it), too.'

c. * Dün film$_i$seyret-ti-m, o-nu$_i$/on-lar-ı$_i$ sen de
yesterday film watch-PST-1SG that-ACC/that-PL-ACC you too
seyret-meli-sin
watch-MOD-2SG
'I watched movies/did movie watching yesterday, you should watch it too.'

In these ways, the bare N differs from the two other types of objects in Turkish. The other two types differ from each other in the following ways. While the caseless DPs may appear with modifiers, they must, nevertheless, always be adjacent to the verb, unlike the case-marked object. Caseless DPs cannot be scrambled (see (37a)) and cannot be separated from the verb by an adverbial expression (see (37b)).[19]

(37) a. * Bir anahtar Yasemin kaybet-ti
a key Yasemin lose-PST
'Yasemin lost a key.'

b. * Yasemin bir anahtar dün kaybet-ti
Yasemin a key yesterday lose-PST
'Yasemin lost a key yesterday.'

[19] Kornfilt (1984: 250, footnote 27) suggests that if the caseless DPs are made "heavy" enough, they can act more like the overtly case-marked DPs.

As we can see in (38), case-marked objects show no such restrictions.

(38) a. Bir anahtar-ı Yasemin kaybet-ti
one key-ACC Yasemin lose-PST
'Yasemin lost one key.'

b. Yasemin bir anahtar-ı dün kaybet-ti
Yasemin one key-ACC yesterday lose-PST
'Yasemin lost one key yesterday.'

To summarize these observations, I give the very simplified characterization below. The bare N is very closely tied to the V, most notably because it cannot elide on its own as the other two forms can. The caseless DP, however, is also tied to the V in that it must always be adjacent to it. Finally, the overtly case-marked DP has the most liberal distribution.

(39) . . .. DP-case . . .. DP . . .. N V

Aydemir's proposal is slightly different from the one that I will offer here. She argues that the bare N is part of a complex predicate, the caseless DP is in a nonderived position as sister to the V, and the case-marked DP is in a derived position. Using arguments from Kornfilt (1984) and data from Malagasy, I will question parts of Aydemir's proposal. In particular, I will claim that bare Ns are the elements that appear in a nonderived position. The argument will be that elements in this position cannot measure an event. The apparently caseless DPs do appear in a derived position and, in this position, can measure out an event. The overtly case-marked DPs move through the derived object position, but from there, because of their overt case, show a freer range of movement and may, in fact, move outside of the VP.

Let us start with Kornfilt's arguments against an incorporation analysis of the bare N. While such an analysis is not identical to a complex predicate analysis, they share the assumption that the nominal is not assigned case by the verb, and it is this part of the incorporation analysis that Kornfilt argues against. She gives data from Turkish causatives to support her claim that even bare Ns check case with the verb. Like many other languages, the case of the causee in a Turkish causative is determined by whether the embedded verb assigns case to an object or not. If the embedded verb is intransitive (does not assign accusative case), the causee will be assigned accusative case. If the embedded verb is transitive, however, the causee will be assigned dative case (from Kornfilt 1984: 167).

(40) a. Ali ko7s7 -tu
Ali run-PAST
'Ali ran.'

b. Ali-yi/*ye ko7 s-tur-du-m
Ali-ACC/*DAT run-CAUS-PAST-1SG
'I made Ali run.'

(41) a. Ali süt-ü ic7-ti
Ali milk-ACC drink-PAST
'Ali drank the milk.'

b. Ali-ye/*yi süt-ü ic7-ir-di-m
Ali-DAT/*ACC milk-ACC drink-CAUS-PAST-1SG
'I made Ali drink the milk.'

When a verb with a bare N object is causativized, the case array is the same as with a transitive verb rather than an intransitive verb, as the examples below show. In this way, the bare N object behaves similarly to an overtly case-marked object (compare (42b)–(42c)) (from Kornfilt 1984: 212[20]).

(42) a. Hasan pasta ye-di
Hasan cake eat-PAST
'Hasan ate cake.'

b. Hasan-a/*ı pasta ye-dir-di-m
Hasan-DAT/*ACC cake eat-CAUS-PAST-1SG
'I made Hasan eat cake.'

c. Hasan-a/*ı pasta-yı ye-dir-di-m
Hasan-DAT/*ACC cake-ACC eat-CAUS-PAST-1SG
'I made Hasan eat the cake.'

An account that is built on the assumption that the bare N does not receive case from the verb will have to explain these facts. I assume that a DP that remains within the VP still must rely on the verb for its case-marking (perhaps an inherent accusative case such as that proposed by Pereltsvaig 2000 for accusative DPs that do not measure out an event), and this case-marking will have the same effect on the case array of the causative as does the structural accusative assigned in the Spec, Asp position.[21]

[20] I have changed Kornfilt's transcription to make it consistent with the system used by Aydemir.

[21] The notion of inherent accusative case requires more research.

5.2.2.2 Malagasy Objects

Now I turn to evidence from Malagasy that bare Ns have a syntactic identity separate from the V. First, let us note that Malagasy has a counterpart to the bare N in Turkish. While some apparently bare Ns in Malagasy are better analyzed as DPs with no overt material other than the N (as in (43)), others appear obligatorily without determiners (as in (44)). The examples I give below in (44a) and (44b) are a bare N instrument (see Paul 2000: 35 for a discussion of instrument advancement) and a bare N possessee (see Keenan and Ralalaoherivony 2000; Paul 2004 for a discussion of possessor raising). Neither the instrument nor the possessee can appear with a determiner as shown in (44c) and (44d).

(43) a. Manasa lamba Rabe
PRES.AT.wash clothes Rabe
'Rabe is washing clothes.'

b. Manasa ny lamba Rabe
PRES.AT.wash DET clothes Rabe
'Rabe is washing the clothes.'

(44) a. Manosotra menaka ny latabatra Rasoa (FN: RH)[22]
PRES.AT.polish oil DET table Rasoa
'Rasoa polishes the table with oil.'

b. Manety volo an-janany Rabe (K&R: 60a')[23]
PRES.AT.cut hair ACC-child.3GEN Rabe
'Rabe cut his child's hair.'

c. * Manosotra ny menaka ny latabatra Rasoa
PRES.AT.polish DET oil DET table Rasoa
'Rasoa polishes the table with the oil.'

d. * Manety ny volo an-janany Rabe[24]
PRES.AT.cut DET hair ACC-child.3GEN Rabe

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[22] I have noted the data that come from my own field notes (FN) and which consultant supplied them (RH).

[23] K&R refers to Keenan and Ralalaoherivony (2000).

[24] This example is considered grammatical by Keenan and Ralalaoherivony (2000: 81) but my consultant did not accept it. I have found that this type of possessor raising varies considerably

Taking the type of object DP in (43a) to be similar to the apparently caseless (and nonspecific) DP of Turkish, the DP in (43b) to the overtly case-marked (and specific) DP of Turkish, and the nominals in (44) to the bare N of Turkish,[25] we can see below that they have something else in common with their Turkish counterparts. Only the specific DP can be separated from the verb by an adverb. No adverbs can intervene between the V and either the bare N (as in (45a)) or the indefinite DP (as in (45b)). This can be compared to (45c), where an adverb may intervene between the V and a specific DP.

(45) a. * Manosotra tsara menaka ny latabatra Rasoa
PRES-AT-polish well oil DET table Rasoa
'Rabe polishes the table well with oil.'

b. * Manasa tsara lamba Rabe
PRES-AT-wash well clothes Rabe
'Rabe washes clothes well.'

c. Manasa tsara ny lamba Rabe
PRES-AT-wash well DET clothes Rabe
'Rabe washes the clothes well.'

When material cannot appear between two linguistic elements, one can hypothesize that the two elements form one syntactic unit and explain the adjacency in that way. However, there is an alternative explanation. The two elements may be separate syntactic units but it is their structural relation that precludes any intervention. For example, Johnson (1991: 584) argues that it is syntactic structure that conspires to prevent material from appearing between an English verb and its object, not an adjacency condition on case assignment. I propose here that, while the Turkish data cannot provide evidence that the bare N is a separate syntactic element, the Malagasy data do. Malagasy has V-movement around the external argument that has remained in the specifier position of V_1P. When this movement occurs, we can see that, even when there

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across speakers. What is important is that the same speaker who rejects (44c) accepts (46c) below, showing that the obligatory lack of determiner does not ensure linear adjacency.

[25] Aydemir has other tests for the bare N which are important to her discussion but work less well for the instrumental NP in Malagasy. She shows that bare Ns do not represent an entity in discourse, and thus they cannot be referred to, for example. Further, they cannot be modified. For Malagasy instrumentals, I have mixed results on these issues with my consultants. Paul (2004), however, shows that a bare possessee cannot introduce an entity into discourse. However, like the bare instrumentals above, it can be separated from the verb by the VP-internal Agent.

is a bare N, only the V moves.[26] Here, then, we have a construction that shows that the adjacency between the bare N and the V can be broken, and we can see that the V is a separate linguistic unit.

(46) a. Inona no nosoran'iRasoa menaka (FN: RH)
what *NO* PST-TT.polish'Rasoa oil
'What did Rasoa polish with oil?'

b. . . . [V_i [$_{VP}$ Rasoa [t_i menaka . . .

c. Hetezan-dRabe volo ny zanany
TT.cut-Rabe hair DET child.3GEN
'His child has his hair cut by Rabe'

d. . . . [V_i [$_{VP}$ Rabe [t_i volo . . .

I have presented two types of bare Ns from Malagasy: the bare instrumental and the bare possessee. The bare possessees are the most similar to the bare Ns of Turkish. Paul (2004) shows that bare Ns fall into different classes, which she terms bare objects and bare possessees. Bare objects, unlike Turkish bare Ns, introduce an entity into discourse.

(47) Manam-bady Rakoto ary tiany izy.
AT.have-spouse Rakoto and love.3GEN 3NOM
'Rakoto has a wife and loves her.'

Bare possessees, however, do not, as shown in (48a) and (48b) below.

(48) a. Maty vady tampoka Rabe (K&R: (19b))
dead spouse suddenly Rabe
'Rabe was suddenly widowed.'

b. # Efa antitrantitra (izy) (K&R: (16b))
already oldish 3.NOM.SG
'She was already oldish.'

As we have just seen in (46c), even these bare possessees are separable from the V. Facts such as these from Malagasy call into question an

[26] This V movement alone distinguishes it from the V + N movement that occurs in Niuean. For Massam (2001), the complex movement is an indication of XP predicate fronting. In Malagasy, verb movement is clearly head movement.

account in which these bare Ns do not have a syntactic position of their own.[27]

5.2.2.3 Turkish Objects Revisited

I use the arguments from Kornfilt and from the Malagasy data to support a view of the bare N in Turkish that places it in the merged position of Themes.[28] If this is on the right track, the typology of Turkish DPs comprises the following three syntactic types: a DP within V_2P that never moves to Spec, Asp; a DP that has moved to Spec, Asp; and a DP that must at some point in a derivation be in Spec, Asp, but which, because of its overt case/specificity marking, is allowed to scramble more freely.

Of particular importance to the present discussion is that there is a derived object within the VP that can measure out an event. Aydemir (2004ab) shows that the bare Ns do not measure out an event while the caseless and case-marked DPs both do. The bit of data that we are most interested in is given below. We see that the caseless DP *bir kitap* 'one book' allows the predicate to appear with the frame adverbial.

(49) Esen (1 saatte) bir kitap oku-du
Esen (1 hour.LOC) a/one book read-PST.3SG
'Esen read a book (in an hour).'

Through discussion of the German data and Aydemir's observations on Turkish we have seen that VP-internal DPs are able to enter into the computation of Aktionsart.

5.3 Conclusion

The purpose of this chapter was to investigate the relationship between derived objects and aspect. In Chapter 2, using syntactic data, I argued for a VP-internal derived object position. In Chapter 3, using morphological data, I argued for an aspectual head within the VP. While Chapter 4 set out a view of event structure

[27] One may look to separable prefixes in German for an alternative account. In other words, perhaps only part of the complex predicate moves. However, I assume a late adjunction analysis of separable prefixes in German (see Newell 2005). Such an analysis cannot be extended to the Malagasy facts since the element that would have to be analyzed as the adjunct would be an argument of the head. Late adjunction of an argument is unacceptable in Newell's analysis.

[28] There are many other languages that allow bare NPs appear in a position adjacent to the verb such as Niuean (Massam 2001) and Hindi (Dayal 1999). Without further research, I make no claims about these languages.

that offered a possible link between these two conclusions, it was important to provide evidence for the claim that the event-related object position is indeed VP-internal. The data from Turkish were particularly helpful in showing that there are multiple object positions. There is a merged position that simply encodes the content of the event participant. Then there is a grammaticized position that allows the DP to measure an event. Finally, for appropriately licensed DPs, there are VP-external positions that interact with specificity and information structure.

Now that the phrase structure has been set up, I shall look more closely at the intersection of syntax and the lexicon (Chapter 6), the status of Achievements (Chapter 7), and an account of coercion (Chapter 8).

Chapter 6
L-Syntax and S-Syntax

In this chapter, I look more closely at the domain of phrase structure below and above the E projection.[1] What I have been creating below the E projection is an articulated VP, which encodes parts of the verb meaning that are often not independently realized. For instance, while in Tagalog the intransitive verb *tumba* ('fall down') and the transitive verb *pagtumba* ('knock down') are distinguished through morphology, in English they are not. One of the questions that can arise, then, is whether this is a matter of syntax or something that should be kept in the lexicon. In particular, we will see that many of the phenomena discussed above are quite idiosyncratic in their application, suggesting that, indeed, they are part of the idiosyncrasies of the lexicon rather than part of the computational system of syntax.

Hale and Keyser (1993) introduce a new level to the grammar by suggesting that syntax may be divided between s-syntax (syntactic syntax) and l-syntax (lexical syntax). As with any innovation, the range of application of this new level must be motivated and constrained. Below I shall examine the characteristics of l-syntax with the aim of both determining and restricting its use. I will argue that event-related categories such as ASP and EVENT play an important role in the representation of event structure within the phrase structure and that the event-related category E represents the phrase structure boundary between l-syntax and s-syntax. Evidence will come from causatives in Tagalog and Malagasy and from empty anaphors in Tagalog. When we investigate these two languages, issues that are obscure in many better-studied languages become clearer.

[1] Much of the material in this chapter appeared in Travis (2000b).

L. deMena Travis, *Inner Aspect*, Studies in Natural Language and Linguistic Theory 80, DOI 10.1007/978-90-481-8550-4_6,

6.1 Background

As we have already seen in Section 4.2.2.3, Hale and Keyser (henceforth H&K 1993) observe, following Clark and Clark (1979), that denominal verbs such as *shelve* appear in structures for which a near paraphrase containing the nominal exists. A typical example of such paraphrase pairs is given in (1).

(1) a. The librarian put the books on the shelf.
b. The librarian shelved the books.

They argue that, while traditionally such pairs would be related only through some morphological relationship within the lexicon, in fact the relation can be described using the vocabulary of syntax. Their argument is that, since denominal verb formation displays the same array of constraints as head movement, it is best accounted for through the same syntactic notions.[2]

> Thus, for example, if established principles of syntax function to constrain denominal verb derivations, then the simplest assumption to make is that these derivations are, in fact, syntactic in nature. (H&K 1993: 54)

Given the pair in (1), one could imagine a derivation in which the two structures have similar underlying representations, but in the denominal form shown in (1b) there is head movement from the prepositional object position through the P to the V. The derivation would be as shown in (2) below (H&K 1993: 70).[3]

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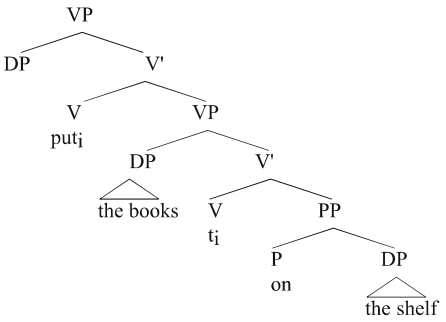
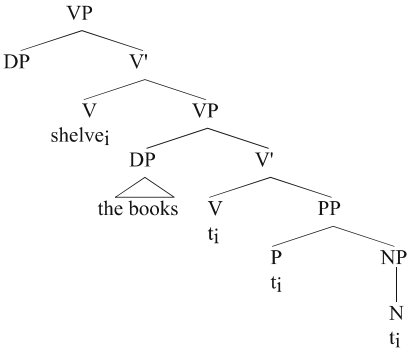
[2] I apply a combination of the framework presented in Hale and Keyser (1993) and Hale and Keyser (2002). Because the structures and processes I argue for are in several ways more compatible with the older work, I often use the trees, the terminology, and the account of Hale and Keyser (1993). However, on more minor issues such as the use of DPs rather than NPs, I follow Hale and Keyser (2002). I will discuss differences between the two accounts as they come up.

[3] Here I have updated the NPs to DPs. I have chosen not to use the representation in Hale and Keyser (2002) as there is no lower V in that structure (see Hale and Keyser 2002: 7). The morphology in the languages central to my research (e.g., Malagasy and Tagalog) suggest a need for two verbal heads.

(2) a.



b.



In Hale and Keyser (2002), syntactic movement is reserved for deadjectival verbs such as *to thin* and they use a different process, conflation, for denominal verbs. In my discussion of causatives, it is the deadjectival type of construction that interests me.

If H&K have succeeded in demonstrating that certain cases of verb formation are created through syntactic means, one might ask why it is not simply syntax. Why does the notion of an L-syntax have to be introduced? Not surprisingly, given that this process is generally considered to be a lexical rule, it is quite easy to argue that denominal verb formation has lexical characteristics. I use four diagnostics for lexical rules: change of category, semantic idiosyncrasies, phonological idiosyncrasies, and lexical idiosyncrasies (nonproductivity).[4,5] In what

[4] One of the idiosyncrasies of denominal verb formation is that the verb must reflect the canonical use of the noun. For example, Kiparsky (1997) notes that *saddle* is a locatum verb and *corral* is a location verb because the canonical use of a corral is as a location and the canonical use of a saddle is in its appropriate position on a horse. He argues that it is this canonical use of the element and not syntactic structure that predicts possible denominal verbs. His arguments are convincing but I do not see that a syntactic account is precluded. The point would still be that the N → V shift (or, as we will see shortly, A → V) occurs in the syntax.

[5] Marantz discusses apparent lack of productivity. Marantz (2001: Section 3) suggests that, in some cases, lack of productivity does not point to anything deep, but rather to accidental gaps. I still distinguish VP-internal processes, in which idiosyncratic processes are common.

follows, I will be looking at two different processes that may arguably occur in both L-syntax and S-syntax. My aim will be to examine the differences in the L-syntax and S-syntax uses of the construction to determine whether a principled distinction may be made between the two. Not surprisingly, my conclusion will be that there is a principled distinction. One process is idiosyncratic and therefore appears to happen in the lexicon; this will be the L-syntax version of the process. The other process is productive and therefore arguably happens in the computational system (i.e., syntax); this will be the S-syntax version of the process.

Other distinctions, however, must also be accounted for and it is the investigation of these that leads us to interesting results. One distinction involves a consistent difference in morphological realization in certain L-syntax and S-syntax processes. I claim that this difference is due to morphology that appears in E. The other is a principled account for what syntactic processes can and cannot occur in the L-syntactic component. This, I argue, follows from a view of event structure and a related view of phrase structure, which I will elaborate on later in the discussion.

6.2 Causatives

Causatives provide an obvious place to start looking at the lexical versus productive distinction.[6] I will begin by looking at the two causatives in English, arguing that the lexical causative is part of L-syntax and the productive causative is part of S-syntax.[7]

6.2.1 English

A clear example of an L-syntax causative in English comes from deadjectival verbs such as *to thin*. H&K use this verb to argue for an L-syntax operation, which, through head movement, incorporates an adjective into a verb, as shown in (3) (H&K 1993: 72).

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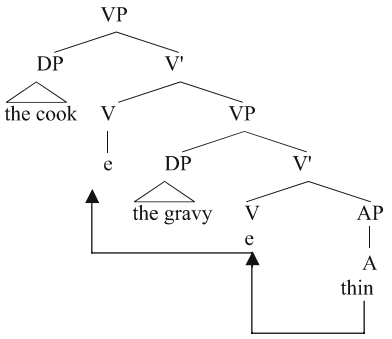
[6] Shibatani (1976) provides a nice overview of the distinction.

[7] In fact, it may be that examples like *shelve* have become lexical. Note that we can say *Shelve the books on the windowsill*. In such a construction, it is difficult to see what the exact structure would be if it were to be derived through syntactic movement. This is one of the reasons why Hale and Keyser (2002: 71) derive denominal verbs by a different process, conflation. Deadjectival verbs, however, do not have this sort of doubling, supporting the idea that they may be derived in the syntax (Hale and Keyser 2002: 98). See Kiparsky (1997) for a typology of these constructions.

(3) a. The cook thinned the gravy.

b.

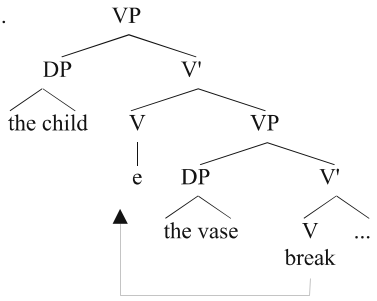


c. The cook (CAUSE) the gravy (BECOME) thin.

We can see the transitive verb *to thin* as containing sublexical items meaning something like 'cause' and 'become' and it is through these two empty V heads that the adjective *thin* moves. We can also assume that this process is used to account for transitivity alternations such as the one given in (4). The structure for (4b) is given in (4c).

(4) a. The vase broke.
b. The child broke the vase.

c.



d. The child (CAUSE) the vase break.

The fact that these causatives are lexical (or part of L-syntax) is clear from their characteristics. As we can see in examples (5)–(7) below, they can change category,[8] they are semantically idiosyncratic, and they undergo lexical phonological changes.

[8] An alternative is that roots are category-neutral and all lexical category information is added syntactically (see Marantz 2001). Demirdache and Matthewson's (1995) work on Salish

(5) [A thin] ⇒ [V thin]

(6) The make-up artist reddened the movie star's cheeks.
≠ The make-up artist caused the movie star's cheeks to redden.

(7) The chef softened the butter.
= sofnd
≠ softnd

Furthermore, it is not a productive process. As we will see later, only unaccusative verbs in the sense of Perlmutter (1978) can undergo lexical causativization. But as (8) below shows, not even all unaccusatives can be causativized in this way.[9]

(8) a. * They will appear the children. (=They will cause the children to appear.)
b. * They died the plants. (=They killed the plants.)

Productive causatives in English are formed by the addition of a causative verb such as *make*.[10] Unlike the lexical causative, the productive causative cannot trigger a change in category or any lexical phonological processes. The semantics are fairly predictable and the process is productive. So, for example, while the lexical causative could not apply to the unaccusative verbs given above, the productive causative can.

(9) a. They will make the children appear.
b. They made the plants die.

In English, then, we have the two types of causative that we want to study. The lexical causative is idiosyncratic in the expected ways and need not be indicated by overt morphology. The productive causative is always indicated by a separate lexical item and is productive with predictable results.

6.2.2 Tagalog and Malagasy

Tagalog and Malagasy also have two types of causative (we briefly looked at Malagasy causatives in Section 3.3.1.2), but they are more instructive than the English equivalent as both use affixation. In fact, I will argue that the morpheme used is exactly the same not only in Malagasy, as we have seen, but also

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and my own work on Malagasy (Travis 2001) has convinced me that roots do have categorial information.

[9] One way of looking at this, however, is simply that *kill* is a suppletive realization of CAUSE-*die*.

[10] There are other causative verbs such as *cause* and *have,* which show the productivity of *make* but which have characteristics of their own, as described, for instance, by Ritter and Rosen (1993).

in Tagalog. The difference in appearance is due, I argue, to a morpheme that always co-occurs with the productive causative morpheme but not with the lexical causative morpheme. I will provide evidence that the difference in behavior between the productive and lexical causatives has to do with where on the tree the morpheme is generated, since the position on the tree will determine whether the morpheme is part of L-syntax or S-syntax.

In Tagalog, the lexical causative is formed by adding the prefix *pag-* to the root. Some examples of the alternation already seen in Section 3.2.1 are repeated in (10).

(10) Alternations (Maclachlan 1989)

a.	**tumba**	X fall down	b.	**pagtumba**	Y knock X down
	sabog	X explode		**pagsabog**	Y scatter X
	luwas	X go to the city		**pagluwas**	Y take X to the city
	sabit	X be suspended		**pagsabit**	Y hang X
	sali	X join		**pagsali**	Y include X

Note that the morpheme *pag-* may be used even when there is no alternation, that is, when only the transitive form of the root exists. Thus, even though there is no form *luto* meaning something like 'X be cooked', there is a form *pagluto* meaning 'Y cook X'.

Within sentences, the forms given in (10) above are combined with another morpheme. In (11a) the other morpheme is *-um-* and in (11b) it is *n-*, which I assume to be an Actor Topic morpheme and a perfective morpheme, respectively, following Maclachlan (1989) and the discussion in Chapter 3.

(11) a. Tumumba ang bata t-um-umba
AT-PERF-tumba NOM child um = AT; 0 = PERF
'The child fell.'

b. Nagtumba ng bata si Rosa n-pag-tumba
AT-PERF-pagtumba ACC child NOM Rosa 0 = AT; n = PERF
'Rosa knocked the child down.'

We have already seen that in Malagasy we can find similar alternations, also mediated by morphology. Again, my assumptions here, following Hung (1988), are that the inchoative form is *-i-* and the lexical causative is formed by the addition of *-an-*. The *m-* found in both members of each pair I analyze as an Actor Topic morpheme similar to the *-um-* found in Tagalog. Further, as in Tagalog, there are some forms that do not have an unaccusative counterpart such as *manome* 'Y give X to Z'. The forms are given in (12) with exemplifying sentences in (13).

(12) Alternations (Malagasy)

a.	**mihisatra**	X move slowly	b.	**manisatra**	Y move X slowly
	milahatra	X be in order		**mandahatra**	Y arrange X
	milona	X soak		**mandona**	Y soak X
	misitrika	X hide		**manitrika**	Y hide X
	No alternation:				
				manome	Y give X to Z

(13) a. Nisitrika tao an-trano izy (Abinal and Malzac 1988: 612)
PST.AT.hide PST.there ACC-house NOM.3SG
'He hid in the house.'

b. Nanitrika ny vola tao an-trano izy
PST.AT.hide the money PST.there ACC-house NOM.3SG
'He hid the money in the house.'

It is immediately clear that these causative alternations are lexical in nature. It can be argued, in Malagasy at least, that they always change category. Typically the roots are either nominal or adjectival in nature. Some examples of typical roots are given in (14).[11]

(14) MALAGASY
a. hisatra_{N} action of slowly moving
b. lahatra_{N} organization
c. lona_{N} action of putting in a liquid
d. sitrika_{N} action of hiding

Also, there are clear cases of semantic drift. In Tagalog, the bare root *sabog* means 'to explode' while the causativized form means 'to scatter'. This has the result that one form may be used in situations where the other one would produce a semantically odd sentence.

(15) TAGALOG
a. Sumabog sa Boston ang bomba
AT-PERF-sabog in Boston NOM bomb
'The bomb exploded in Boston.'

b. # Nagsabog ng bomba sa Boston ang terorista
PERF-pag-sabog ACC bomb in Boston NOM terrorist
cannot mean: 'The terrorist exploded the bomb in Boston.'
gets the odd reading: 'The terrorist scattered the bomb in Boston.'

[11] See Phillips (2000) for an extensive discussion of the use of roots in Malagasy. In the main Malagasy-French Dictionary (Abinal and Malzac 1988), which was first published in 1888, all roots are given a category label even though the root might never be used on its own.

Further, it is clear in Malagasy that the causativizing suffix triggers a lexical rule of phonology rather than a postlexical rule. In a postlexical rule, such as reduplication, a nasal preceding a consonant triggers prenasalization. In the lexical rule that is triggered by the lexical causative affix, the result is fusion: the voiceless consonant drops.

(16) MALAGASY

POST-LEXICAL (prenasalized consonant)

$n + p \rightarrow {}^{m}_{p}$	pentso**n** + **p**entson	pentso**^{m}p**entsona	N 'chatter'
$n + s \rightarrow {}^{n}_{ts}$	m + an + sampo**n** + **s**ampon	manampon**^{n}ts**ampona	V 'to stop'

LEXICAL (fusion)

n + p → m	ma**n** + **p**etraka	ma**m**etraka	'to put'
n + s → n	ma**n** + **s**itrika	ma**n**itrika	'to hide'

Finally, the lexical causative, while more productive than in English, is not completely predictable. Some forms may appear with or without the prefix with no change in meaning, as example (17a) shows; some, where we expect the prefix because the verbs have external theta-roles (i.e., are not unaccusative), do not have it, as (17b) shows.

(17) a. TAGALOG

hiwa or **paghiwa** X cut/slice Y

b. MALAGASY

mividy X buy Y

All of these characteristics simply confirm that this is a lexical causative rule with all the expected idiosyncrasies. The end result, however, is that there is a morpheme that is used in both languages that in many cases indicates a transitivity alternation (i.e., causativization) between two forms. Also, in both languages, this morpheme may be used simply to indicate a transitive (or agentive) structure even if there is no intransitive counterpart. In Tagalog, the lexical causative morpheme is *pag-* and in Malagasy it is *an-*.

(18)

	INTRANSITIVE (UNACCUSATIVE)	TRANSITIVE (agentive) (LEXICAL CAUSATIVE)	(generally)
Tagalog	0	*pag-*	
Malagasy	*i-*	*an-*	

Both Tagalog and Malagasy also have another causative which is much more productive and predictable. As we saw in Chapter 3, in Malagasy, the productive causative appears to be formed by attaching the causative morpheme *amp-* to the stem, and we reanalyzed this morpheme as *an* + *f*. The examples in (19) show that the stem may either take the form of the lexical causative verb (*anitrika*) or the unaccusative verb (*isitrika*). It is clear that the productive

causative (PC) morpheme can be attached to a form containing the lexical causative (LC) morpheme. This is shown in (19b′).

(19) MALAGASY (*amp-*, or *an-* + *f-*)

	STEM		PRODUCTIVE CAUSATIVE	
a.	*misitrika*	'X hide'	*mampisitrika*	'Z make X hide'
b.	*manitrika*	'Y hide X'	*mampanitrika*	'Z make Y hide X'

b'. *m* + *an* + *f* + *an* + *sitrika*
M + PC + *F* + LC + ROOT

In Tagalog, the productive causative prefix is, for the most part, *pagpa-,* which I will argue is *pag* + *pa,* parallel to the Malagasy *an* + *f*.[12] What makes it different from Malagasy is the effect that the addition of this morphology has on the realization of the stem. Once the productive causative morpheme has been added, the lexical causative morpheme drops. This has the end result of collapsing the unaccusative form with the lexical causative form, thereby making the productive causative ambiguous between the two. In other words, when the productive causative morpheme *pagpa-* is attached to the stem *pagbukas*, instead of getting *pag-pa-pag-bukas*, the form is *pag-pa-0-bukas*, homophonous with the productive causative form of the unaccusative.

(20) TAGALOG (Actor Topic: *pagpa-*)

	STEM		PRODUCTIVE CAUSATIVE	
a.	*bumukas*	'X open'	*magpabukas*	'W make X open'
b.	*magbukas*	'Y open X'	*magpabukas*	'W make Y open X'

b′. *m* + *pag* + *pa* + ?? + *bukas*
M + PC + *PA* + LC + ROOT

Thus far, we have been looking solely at Actor Topic forms. In the Theme Topic form of the productive causative, however, where the Causee appears as the Subject/Topic, we get two interesting results. One is that the form of the productive causative morpheme changes from *pagpa-* to *pa-*. The second is that the lexical causative morpheme reappears on the transitive stem. This is shown in (21) below. Sentences are given showing the use of each form. With the morphological change of the verb comes a change of the Subject/Topic.

(21) TAGALOG (Theme Topic: *pa-*)

a.	pabuksan[13]	'X be made to open'	(see (20a))
b.	pa**pag**buksan	'Y be made to open X'	(see (20b))

[12] The forms of the verb that do not surface as *pagpa-* will be very important to the discussion of the morphological analysis of the causative and will be looked at in more detail below.

[13] There is a syncope in the root when a suffix is added.

b′. ?? + pa + pag + bukas + an
PC + pa + LC + ROOT + ThemeTopic

The first observation suggests that the productive causative morpheme, in fact, consists of two morphemes, *pag-* and *pa-*, and the *pag-* drops in the Theme Topic form. Independent evidence for this analysis comes from the fact that the lexical causative morpheme *pag-* also drops in the Theme Topic form of the simple lexical causative. The relevant forms are given in (22) below.

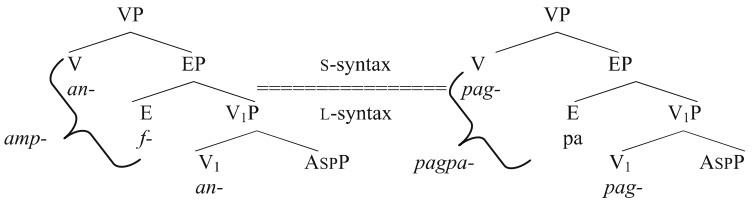
(22) TAGALOG
a. Actor Topic of lexical causative: *pagbukas* 'X opens Y'
b. Theme Topic of lexical causative: *buksan* 'Y is opened by X'

While I will save the account of why the "top" *pag-* drops off in the Theme Topic form till Section 6.4.2, we can now at least make the observation that *pag-* drop occurs with both the productive causative and the lexical causative, in particular forms.

This brief excursion into Tagalog morphology has left us with two results. One result is the realization that, underlyingly, Tagalog and Malagasy are quite similar. The productive causative morpheme may be attached to a form containing the lexical causative morpheme. In Tagalog, this fact is obscured by the null realization of the lexical causative when the productive causative is overt. The second result is that, because we are forced to reanalyze the productive causative morpheme in Tagalog as *pag-* and *pa-*, we can now see that at least part of the productive causative morpheme is identical to the lexical causative morpheme (*pag-* in both instances).[14] In fact, this is very similar to the analysis of the Malagasy productive causative, which I argued in Chapter 3 also consists of two morphemes, *an-* and *f-*. As proposed earlier for the morpheme *f-* in Malagasy, we will assume that the extra Tagalog morpheme *pa-* is generated in E. What distinguishes the productive causative from the lexical causative is where the causative morpheme is generated on the syntactic tree—productive causatives are generated above E and lexical causatives are generated below E.

[14] This analysis of causatives in Tagalog is not universally accepted. Many authors see the causative morpheme as unanalyzable. Schachter and Otanes (1972) simply list it as *magpa-* in the Actor Topic form and *pa-* in the Theme Topic form. Carrier (1979) breaks *magpa-* down into *mag-* and *pa-* but treats *pa-* as the causative morpheme and *mag-* as the Actor Topic morphology. Rackowski (2002) analyzes *pag-* as an anti-EPP marker found in voiceP, following some ideas expressed by Pylkkänen (2002). I will comment on Rackowski's analysis in Section 6.4.3.

(23) a. MALAGASY b. TAGALOG



My account for these morphemes is basically a development of the analysis presented in Hung (1988), but I have used her results as a starting point to investigate the differences between L-syntax and S-syntax. We have seen that causatives divide nicely between L-syntax and S-syntax, but we would expect this distinction to show up in other areas of the grammar. We will see in the next section that Tagalog offers another phenomenon that shows the same split in properties.

6.3 Empty Anaphors in Tagalog

In Tagalog there is evidence for an empty category that is obligatorily bound. Because it is empty but in a position that can be filled, I assume that this empty category is pro. Because it is obligatorily bound, I assume that it is anaphoric. Del Pilar (1993) argues that this anaphoric pro appears in productive (syntactic) causatives and has very particular characteristics which suggest that it has syntactic status (and is not simply pragmatically determined). As she points out, anaphoric pro also appears in some noncausative structures. In the next section, I develop her observations and conclude that anaphoric pro may be licensed by morphology that is added either in the L-syntax or the S-syntax. If it is licensed by the L-syntax morpheme, it shows the idiosyncrasies expected at this level. If it is licensed by the morpheme added in the S-syntax, however, its behavior is predictable.

6.3.1 S-Syntax Anaphoric pro

Del Pilar (1993) begins by introducing the productive causative in Tagalog, which we have already seen above. As we can see in (24a, b) below, the productive causative turns a two-argument predicate into a three-argument predicate with the addition of an Agent.[15]

[15] I use del Pilar's data, which indicate arguments with letters. I have merely changed the letters in (24) to make the relevant argument structures clearer.

(24) a. Sumundo si A ng B
AT-PERF-fetch NOMA ACCB
'A fetched a B.'

b. Nagpasundo si K kay A ng B
AT-PERF-pagpa-fetch NOMK OBLA ACCB
'K caused A to fetch a B.'

She notes further, however, that in the productive causative, one can leave out the third argument and get obligatory binding with the causer.

(25) Nagpapuri si A kay B
AT-PERF-pagpa-praise NOMA OBLB
'A caused/let B (to) praise A's self.'

This is unlike pro-drop in that the antecedent may not come from outside the sentence. So, for instance, (25) cannot mean that A caused or let B praise K. Furthermore, the empty category must exist in the syntax since it is able to control PRO in a control structure, as in (26b) below.[16]

(26) a. Nagpahikayat si A kay B ng K na bumili ng bahay
AT-PERF-cause-persuade NOMA OBLB ACCK COMP AT-buy ACC house
'A caused/let B (to) persuade K to buy a house.'

b. Nagpahikayat si A kay B na bumili ng bahay
AT-PERF-cause-persuade NOMA OBLB COMP AT-buy ACC house
'A caused/let B (to) persuade **A** PRO to buy a house.'

c. $[_{IP}$ nagpahikayat $[_{DP}$ si A$]_i$ kay B $[_{DP}$ pro$]_i$ $[_{CP}$ na $[_{IP}$ bumili PRO_i ng bahay$]]]$

In (26a), the third argument, K, controls the empty subject of the embedded clause. In (26b), this third argument is not lexically realized and the empty embedded subject appears to be controlled by the highest argument, A. Del Pilar assumes that the control facts are captured by assuming a syntactically active but not lexically realized third argument. This argument is an anaphoric pro that takes as its antecedent the highest argument, A. This is shown structurally in (26c) where A binds pro and pro controls PRO.

What is interesting for my purposes, however, is that these forms cannot passivize (i.e., be put in the Theme Topic form), as (27) below shows.

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[16] Some speakers find this construction odd, not because of the binding, but because they do not get object control structures; (26a) is also not possible for them. In dialects, then, that do not have object control, this cannot be tested. I am relying on data provided by del Pilar (1993). I am grateful to R. Mercado for discussion of these data.

(27) Pinapagpuri ni A si B
TT-PERF-papag-praise GENA NOMB
≠ 'B was caused by A to praise B/A's self.'

At this point, we can make the following observations. With the productive causative morpheme, we can license an empty category that behaves like an anaphor in that it must be bound, and its antecedent must be the Agent in an Actor Topic construction.

What I will suggest in this section and hope to confirm in the next is that the anaphoric pro of Tagalog is similar to the long-distance subject-oriented anaphors of languages like Icelandic and Chinese. I argue that two conditions must hold in order for the anaphor to be licensed: the *pag-* morpheme must be overt, and the antecedent must be in subject position. Before turning to my account of Tagalog, I will briefly introduce one of the first accounts of long-distance anaphora.[17]

Pica (1987) investigates the problem of long-distance anaphora, using data from Scandinavian languages. His observation is that long-distance anaphors must be monomorphemic whereas local anaphors may be compound. This is very clear in Chinese, for example, where the long-distance anaphor is *ziji* and the local anaphor is *ta ziji*. In the Danish and Icelandic examples below, we see in (28a, b) that the long-distance anaphor may be bound by a DP that is outside of a small clause in (28a) and outside of an embedded (subjunctive) sentence in (28b). Example (28c) shows that this anaphor in Danish cannot take an object as its antecedent.[18]

(28) a. Han_i betragter patienten som farlig for sig_i DANISH (Pica 1987: 484)
'He considers the patient as dangerous for himself.'

b. Jón_i upply!sir aD María elski sig_i ICELANDIC (Pica 1987: 484)
'Jon says that Mary loves himself.'

c. * Jeg fortæller Hans_i om sig_i DANISH (Pica 1987: 485)
'I told John about himself.'

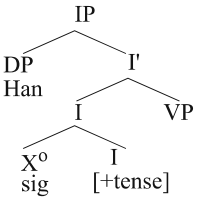
Pica's account links the monomorphemic shape of the anaphor with the facts that it may be bound long-distance and that it is subject-oriented. He assumes

[17] The phenomenon of long-distance anaphora has been the topic of many papers. Some of the relevant references can be found in Cole et al. (2001). Pica's account is sufficient for my needs.

[18] These examples appear in Pica's paper without glosses. I have modified b) slightly. Joan Maling (p.c.) has pointed out to me that the original example *Jón_i upply!sti aD María elski sig_i* translated by Pica as 'Jon says that Mary loves himself' has several problems with it. She also notes that the verb *upply!sa* means 'to inform' rather that 'to say' but given that 'inform' requires an object, I have left the translation as 'say'.

that monomorphemic anaphors are X^os rather than XPs. As X^os, they move to INFL[19] at LF and in this position take the closest c-commanding DP, which is the subject, as their antecedent. In this account, the structure for (28a) would be as in (29).[20] Example (28c) is ungrammatical since the object will not c-command the anaphor at LF and therefore cannot act as its antecedent.

(29)



(structure for (28a))

Along the same lines as Pica, one could propose that the empty anaphor in Tagalog is an X^o which must move to INFL to be licensed; in the position of INFL, it can take only the subject as its antecedent. The question remains, however, why these forms cannot passivize (i.e., appear in the Theme Topic form) as in (27). Recall from our discussion of productive causatives above that the *pag*-morpheme in a productive causative disappears in the Theme Topic form. I hypothesize for the moment that it is this morpheme that licenses the empty anaphor in INFL; if this morpheme is not lexically realized, then the empty anaphor cannot be licensed. This issue will be addressed again in the next section.

6.3.2 L-Syntax Anaphoric pro

What is interesting about the anaphoric pro found in the causative construction is that a similar phenomenon occurs in structures that do not contain a productive causative. Del Pilar points to a few examples in her paper such as the one in (30) below.

(30) a. Bumaril si A ng B
AT-PERF-baril NOM A ACC B
'A shot a B.'[21]

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[19] In fact, the X^o anaphors must move to INFL to be saturated. I refer the interested reader to Pica's article for more details. Whether or not this is the appropriate way to account for long-distance anaphora is actually not crucial to my analysis. It is only important to note that Tagalog anaphoric pro behaves like a long-distance anaphor in being subject-sensitive.

[20] In (28b), the anaphor would have moved to the higher INFL.

[21] Accusative objects are invariably indefinite in Tagalog.

b. Nagbaril si A
AT-pag-baril NOM A
'A shot himself/herself.'

Other verbs that allow this alternation, according to del Pilar, are *wash, shave, dress, clean, shoot, cure, hit/whip, shut in, blame, force, lose*.[22] Note that the Actor Topic form of the verb changes from the paradigm that shows *-um-* insertion (*b-um-aril*) to the paradigm that contains *n + pag* (*n + pag + baril*). In these cases of anaphoric pro, the fact that there is a missing argument seems to have as much to do with the meaning of the verb as with the construction in which the verb appears. In fact, many of the Tagalog verbs that allow a reflexive reading also allow a reflexive reading in English when the second argument is dropped, such as *wash* and *shave*.[23] On closer examination, however, we can see that what is crucial for the anaphoric reading of these verbs is not merely the choice of verb but also the syntactic configuration that it appears in. To show this more clearly, I turn to an article by Carrier-Duncan (1985), which discusses the issue in more depth.

Using lexical rules, Carrier-Duncan sets out to collapse two phenomena in Tagalog. She starts by describing Rule 1 and Rule 2. With Rule 1, the second argument of a verb appears to be bound to the first argument (this is similar to del Pilar's examples given in (30)). In (31a, b), we can see her description of the facts. She assumes that the verb form remains the same, but that the choice of topic paradigm changes. The verb in (31a) with no binding chooses the *-um-* form of the Actor Topic, while the verb in (31b) with the argument binding chooses the *mag-* form of the Actor Topic. The paradigm choice is indicated by the morphemes placed above each of the arguments in a theta-grid. For example, with the root $\sqrt{hiwalay}$, if the theme (highest argument) becomes the subject,[24] the morphology that appears on the verb is the infix *-um-*. If the source argument becomes the subject, the relevant affix on the verb is *-an*. In the form of the root that shows the binding effect, the verb form which surfaces when the highest argument (Theme) is the subject is a *mag-* form. Since the

[22] Del Pilar does not give the Tagalog equivalents of these verbs. Since this process is so variable across speakers, it is difficult to know exactly which forms she had in mind.

[23] It is equally important to note, however, that other Tagalog verbs are quite different from their English counterparts. For example, while *wash* becomes reflexive when used intransitively in English, other verbs such as *hit*, *cure*, and *blame* do not. (*The child hit* cannot mean 'the child hit himself.')

[24] Carrier-Duncan assumes that this promotion of arguments via verbal morphology is a process of topicalization and not a process of promotion to subject. So as not to confuse the reader, I describe and gloss the Tagalog data in a way that is consistent with my view of this process. In doing so, I depart from Carrier-Duncan's original characterization of these facts. Further, I continue to refer to the *-um-* and *mag-* forms as Actor-Topic forms, and the *-in* forms as Theme-Topic, as is done in the Austronesian literature. In my analysis of the Austronesian morphemes, they designate subjects not topics.

source argument in this form is always null (i.e., bound by the theme argument), it never appears as the subject so no morpheme is required.

(31) *-um-* *-an*

a. HIWALAY: (theme source)
'X separate from Y'

mag-

b. HIWALAY: (theme_i $\text{source}_{rec,i}$)
'X and Y separate from each other'

Rule 1, which binds the second argument with the first argument, can be used with other verbs such as *fight with*, *meet*, *see*, *converse*, and triggers a reciprocal reading, as shown in the Actor Topic constructions below.[25]

(32) a. H-um-iwalay sa kaibigan ang bata (adapted from Carrier-Duncan)
AT-PERF-separated *SA* friend NOM child
'The child separated from his friend.'

b. Nag-hiwalay ang mga kaibigan
AT-PERF-*PAG*-separated NOM PL friend
'The friends separated from each other.'

Carrier-Duncan's conclusion, then, is that by changing from the *-um-* Actor Topic paradigm to the *mag-* Actor Topic paradigm, the verb triggers the binding of the second of its arguments by the first of its arguments. The result is that a two-argument verb becomes a one-argument verb with a reciprocal interpretation.

Rule 2 applies to three-argument verbs and binds the third argument to the second argument. Once again, according to Carrier-Duncan, the rule does not add morphology to the verb, but it does affect the choice of paradigm for topic morphology. Without the binding, the Theme Topic morphology is *i-*, but with the binding, this morphology is *-in* (again shown by the morphemes listed over the respective theta-grids).

(33) *mag-* *i-* *-an*

a. SAMAH (agent theme goal)
'X puts Y with Z'

[25] Carrier-Duncan also gives only the English translations and not the relevant Tagalog roots.

		(mag-) -in
b.	SAMAH	(agent theme$_i$ goal$_{rec,i}$)

'X put Y and Z together'

Other verbs that can undergo this process are *join* (X joins Y and Z to each other), *paste* (X pastes Y and Z to each other) and *put* (X puts Y and Z near each other). As shown in the examples below, the resulting meaning is again reciprocal.

(34) a. I-sasamah ang karne sa gulay ng magluluto
TT-IMP-put NOM meat *SA* vegetables *GEN* cook
'The cook will put the meat with the vegetables.'
(adapted from Carrier-Duncan)

b. Pag-sasamah-in ang karne at gulay ng magluluto
PAG-IMP-put-TT NOM meat and vegetables *GEN* cook
'The cook will put the meat and vegetables together (with each other).'

The verb forms undergoing Rule 2 are the most interesting at this point because of the restrictions placed on them and a morphological quirk that they show. Note first that the morphological paradigm given for these verbs has the Actor Topic form (*mag-*) in parentheses in (33b). It is in parentheses because this verb form never appears in an Actor Topic construction, but only in a Theme Topic construction. Carrier-Duncan explains this as follows:

> For subclass 2 [verbs undergoing Rule 2], the [**Actor Topic**] **form is not used in a sentence**, a quirk shared by a few nonderived verbs as well. However, the [Actor Topic] form exists since it **serves as the stem to which the** [**Theme Topic**] **suffix -in** is added (causing *mag-* to show up as *pag-*) (Carrier-Duncan 1985: 15) (emphasis added)

It is strange that the derived verb form is part of a small idiosyncratic verb class when the nonderived form behaves normally. Another way to explain this fact, however, is to say that there is a syntactic restriction on the binding relation and that the antecedent must always be in the subject position. This is central to my account.

There is a further oddity to be noted. A strange morphological fact about these verb forms is that the *pag-* from the Actor Topic form remains in the Theme Topic form (and Carrier-Duncan cites this as the reason why she knows that the Actor Topic form is *mag-* even though it is unattested). This retention of *pag-* in the Theme Topic form is unlike both the productive causative *pag-* and the lexical causative *pag-*. It is certainly unlike any other paradigm of topic

morphology. To see this more clearly, let us look more closely at the paradigm choice for the bound forms described in (33b). The paradigm chosen by these verbs is *mag-* for Actor Topic (which, in fact, never surfaces) and *-in* for Theme Topic. While most nonderived verbs that take *-in* for Theme Topic take *-um-* for Actor Topic, there are some verbs that take *mag-* as Actor Topic and *-in* as Theme Topic. When they do, however, the *pag-* predictably disappears in the Theme Topic form. A few examples of this are given below. In fact, returning to (34a) above, we see that *m+pag* is not realized on this form of the same root (cf. (34b)).

(35)

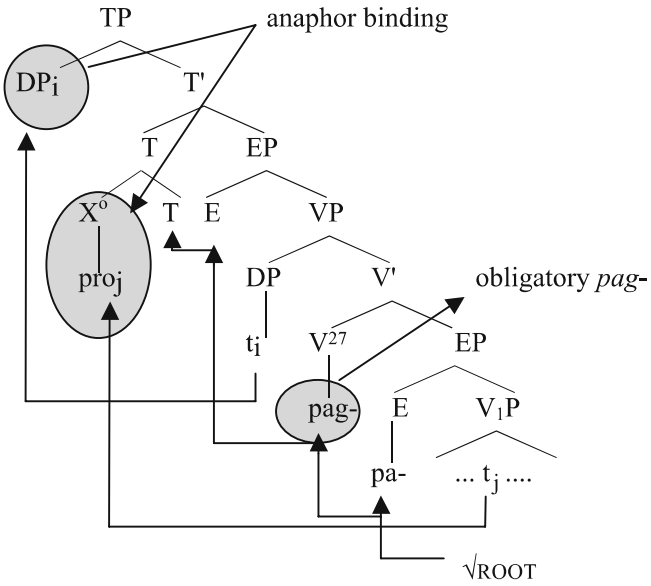
	AT	TT	
'pray'	*magdasal*	*dasalin*	**pagdasalin*
'water'	*magdilig*	*diligin*	**pagdiligin*
'mix'	*maghalo*	*haluin*	**paghaluin*

The paradigm for the Rule 2 verbs, then, is odd for two reasons. The Actor Topic form never surfaces, and the Theme Topic form retains the *pag-* morpheme. In fact, though it is not as clear in the case of the Rule 1 verbs, we can make a generalization that the antecedent will always be the subject in both sets of verbs (forcing the Rule 2 verbs to appear in the Theme Topic form), and the *pag-* must always be present (forcing the unexpected Theme Topic form of the Rule 2 verbs).

These characteristics now make Carrier-Duncan's reciprocal verbs (e.g., (32b) and (34b)) look very similar to del Pilar's productive causative reflexive constructions (e.g., (25)) and the lexical reflexive verbs (e.g., (30b)). In all of these cases, the antecedent must be the subject and the *pag-* must be lexicalized. To try to relate these data to Pica's analysis of long-distance anaphora, I will assume that the empty anaphor in Tagalog is a head (perhaps nonhead anaphors in Tagalog must be lexically realized) and it moves to an INFL (or T position) that contains a phonetically realized *pag-*. This would explain the obligatory presence of *pag-*. In the T position, the anaphor may have only the subject as its antecedent. We can then propose the structures below for anaphoric binding in the four types of verb we have been discussing: productive causatives, lexical reflexives, lexical reciprocals (Rule 1), and lexical reciprocals (Rule 2).[26]

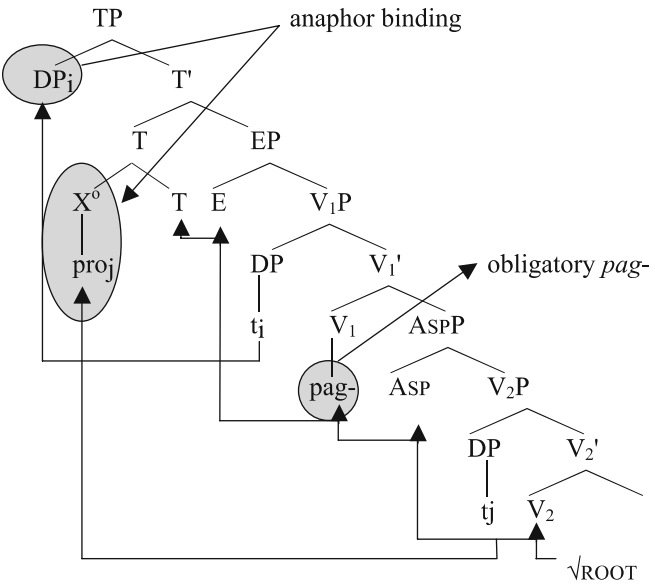
[26] An alternative would be the one presented in Reinhart and Reuland (1993). What I have been calling anaphoric pro would be an SE (Simplex Expression) in their terms. They would specify the L-syntax cases as being reflexive roots but I am not sure how they would ensure the right binding relation.

(36) a. PRODUCTIVE CAUSATIVES (del Pilar)

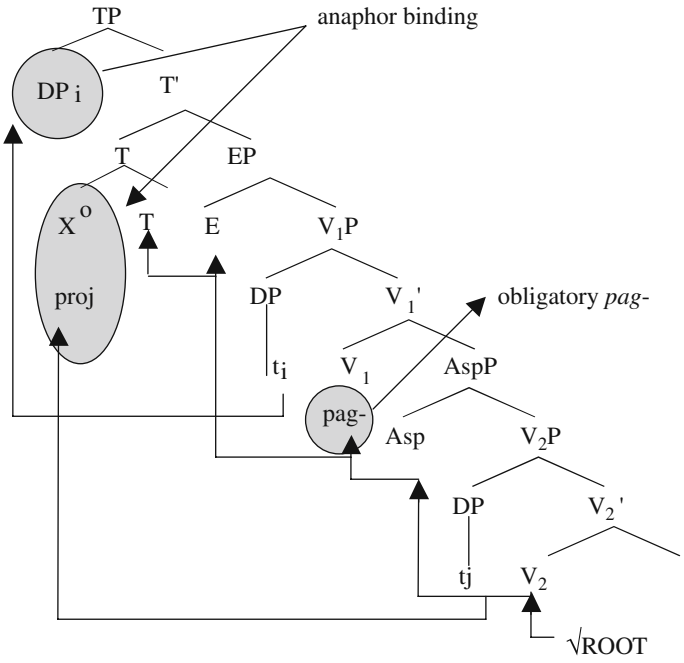


[27] I have not indicated whether the productive causative *pag-* is a V_1 or a V_2. We will see shortly that it acts like a V_1 in terms of morpheme deletion, and it has the same form as the lexical causative V_1. Then the question arises as to whether there is a V_2 that selects for EP. I'm assuming that there is but have no firm grounds at this point and therefore shall not include it. I will leave this V unspecified throughout.

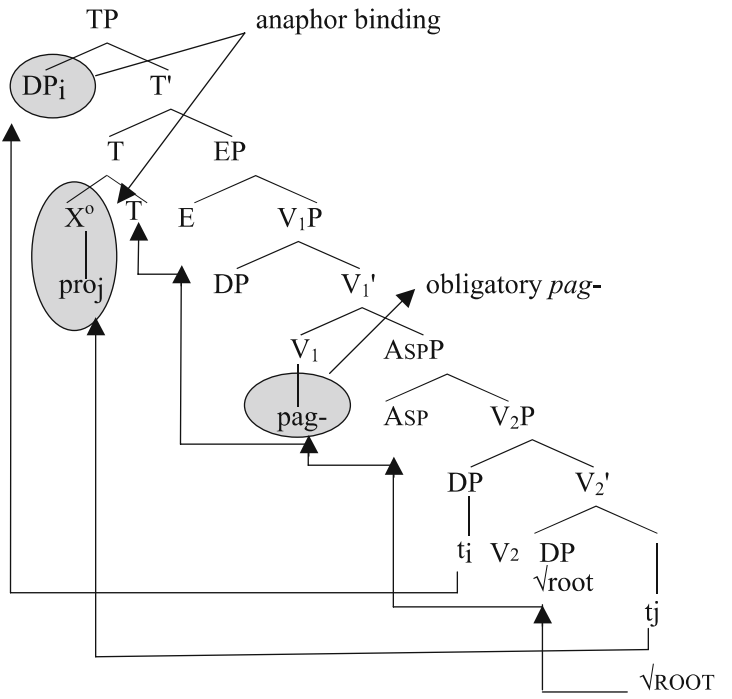
b. LEXICAL REFLEXIVES (del Pilar)



c. LEXICAL RECIPROCAL VERBS (Rule 1: Carrier-Duncan)



d. LEXICAL RECIPROCAL VERBS (Rule 2: Carrier-Duncan)



This analysis is an attempt to account for what these phenomena have in common. There are ways in which they differ, however. In the spirit of this chapter, I feel that the most appropriate way to categorize the binding cases we have seen is to put the productive causative on one side (36a) and the lexical type binding on the other side (36b, c, d). This means putting Carrier-Duncan's Rule 1 and Rule 2 cases together with the lexical reflexive examples given by del Pilar. These would all be cases of the L-syntax use of the anaphoric *pag-*. The productive causative cases would be S-syntactic uses of the anaphoric *pag-*.

It is easy to see that the L-syntax examples show L-syntax characteristics. Not all verbs can undergo this process. In other words, only certain verbs may add a *pag-* to their stems and thereby bind one argument with another, and that list of verbs varies from speaker to speaker. Further, which argument is the bindee and which the binder must be determined verb by verb. In some cases, the Agent binds the Theme, while in other cases, the Theme binds the Source, as in (31), or the Theme binds the Goal, as in (33).[28] Finally, the verb must determine whether the anaphoric pro will be a reciprocal (as in Carrier-Duncan's examples) or a reflexive (as in del Pilar's examples).

[28] There seem to be some restrictions on this since the binder is always higher in the theta-hierarchy. While one might argue that this makes this binding look like a lexical process and

The productive causative form of anaphoric *pag-* shows none of these idiosyncrasies. All productive causatives can license the empty anaphor, and in every case the anaphor will be interpreted as a reflexive.

Once again, as with the causative, we have the same morpheme creating essentially the same effect. The differences are determined solely by the position that the morpheme is placed in. If the morpheme is above E (as in (36a)), it acts like a lexical item on its own which has consistent properties. If it is below E (as in (36b, c, d)), its behavior may be determined by the lexical item of which it is a part, accounting for its idiosyncratic nature. What is important to note, however, particularly with respect to the licensing of the empty anaphor, is the close connection with syntax. Causative formation creates complex words with complex argument structure—both processes that can arguably be kept within the lexicon. The setting up of anaphoric relations has much more of a syntactic flavor to it, however, as it relates to XPs and is sensitive to the grammatical relation (subjecthood) of the antecedent. This provides further support for the syntactic side of L-syntax. In the next section, I will look more closely at the nature of L-syntax.

6.4 Where and What is L-syntax?

L-syntax is assumed to have some characteristics of the lexicon (category changing, idiosyncrasies, etc.) and some characteristics of syntax (head movement), but the question remains as to where it is located in the grammar.[29]

6.4.1 Syntax in the Lexicon

Hale and Keyser (1993) appear to want at least a bit of the syntax to appear in the lexicon. This would mean that, for denominal verbs such as *saddle* and *shelve*, the lexical entry would include a phrase structure tree. They put it as follows (H&K 1993: 95).

> In thinking about this [the idiosyncrasies of denominal verb formation], we have taken the conservative view and assumed that this array of facts compels us to suppose that the lexical entry for *shelve* includes at least the full syntactic structure depicted in [(37)].

In being conservative, they keep the idiosyncratic information within the lexicon. But, given that there are syntactic components within their account, this forces them to put a bit of syntax in the lexicon as well. The lexical entry for the verb *to shelve* would then be as in (37) (Hale and Keyser 1993: 74).

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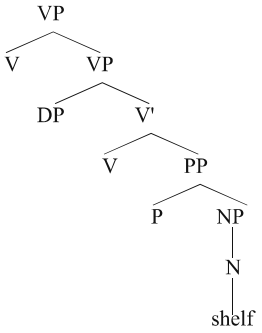
not a syntactic process, the fact that the binder must also be the syntactic subject must be explained. I am assuming that syntax is the obvious place to find such an explanation.

[29] Butt and Ramchand (2005) use the term first-phase syntax. This is similar but not identical to L-syntax. I leave it to the reader to make a comparison.

(37) = (H&K: 74)



No distinction is made, however, between the syntax that occurs in the lexicon and the syntax that occurs in the computational component.

> The "structures" implicated in that usage [Lexical Relational Structure] are simply syntactic structures expressing such normal syntactic structural relations as "head," "specifier," and "complement." And they are present in the syntactic representations over which normal syntactic processes and principles are defined. The qualification "lexical" refers to the property that the argument structures of verbs are "listed" in the lexicon, perhaps in the manner suggested by the conservative view of lexical entries (H&K 1993: 97).

Here I choose to follow a different approach.[30] Rather than assuming that a bit of syntax has slipped into the lexicon, I would like to explore the possibility that a bit of the lexicon has slipped into the syntax. This approach will be outlined below. Before doing that, however, I would like to begin with a problem that H&K raise. This problem arises with the ungrammatical sentences in (38). I also give H&K's characterization of the problem.

(38) a. * The clown laughed the child. (i.e., got the child to laugh)
b. * The alfalfa sneezed the colt. (i.e., made the colt sneeze)

> These sentences represent an extremely large and coherent class of impossible structures in English. In particular, unergative VPs cannot appear as complements of V in LRS representations—that is, an unergative may not appear in the lexical syntactic "causative" construction. (H&K 1993: 74–75)

In other words, if a zero causative morpheme can be added to (unaccusative) intransitives such as *melt* and *break* to form causative counterparts, why can this not be done with unergative verbs like *laugh* and *sneeze*? Since both of these

[30] As mentioned earlier, Hale and Keyser (2002) present a slightly different picture. English denominal verbs are derived through conflation rather than syntactic movement, while English deadjectival verbs are derived through head movement, and in the syntax. In both cases, however, there is complex structure in the syntax.

verbs may undergo productive causativization, as the intended meanings show, this question can be reworded as: what is the boundary of L-syntax?

H&K's answer to this question depends on their conception of external argument. They assume that external arguments are truly external and can only be added in the syntax (through either predication or the introduction of functional categories and their requirements). External arguments, then, are not generated in the Spec, VP position through the argument requirements of the verb.

This solves the problem raised in (38). Since the external arguments of *laugh* and *sneeze* are added in the S-syntax, they cannot be made into internal arguments by additional L-syntax morphology. In other words, at the point where L-syntax applies, these verbs have no arguments. The addition of the causative, then, cannot create a two-argument verb.

For independent reasons (see the discussion of the Malagasy *maha-* forms in Chapter 7), I assume that external arguments are part of the verb's lexical entry, so I must look for a different solution. My proposed solution solves the problems raised by the data in (38) as well as providing an account of causative morphology in Tagalog and Malagasy productive causatives.

6.4.2 Lexical Entries in Syntax

It would be very nice if we could find evidence that L-syntax has to be part of the computational component. Hale and Keyser's strongest argument was that denominal and deadjectival verb formation appear to be restricted by the Head Movement Constraint, arguably a restriction on syntactic movement. However, if L-syntax is truly syntax, we expect to see other types of syntactic effects. In this section, I argue that we have evidence of Spec, Head relations at the level of L-syntax. It is difficult to argue that Spec, Head relations *cannot* be captured by information added in the lexicon.[31] I will suggest, however, that this is most easily done in the computational component.

The data relevant to this argument involve the *pag-* drop that we have already seen in the discussion of Tagalog causatives. We have seen two different cases of this in the productive causative. First we saw that if the productive causative was added to a lexical causative, the lexical causative morpheme *pag-* dropped. This is shown again in (39) and (40) below;[32] (39) shows this schematically while (40) gives a relevant example.

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[31] This can be done by having a feature introduced on morphology added in the lexicon and then having a condition on the syntactic configuration in which this feature must appear.

[32] Data were provided by Raph Mercado.

(39) Productive Causative (Causer = Topic)
m + **pag** + pa + **??** + √bukas ‘ to cause to open$_{\text{TRANS}}$’
M + PC + E + LC + ROOT

(40) a. *magbukas* ‘open$_{\text{TRANS}}$’
Nagbukas si Pedro ng kahon
PST.*PAG*.open NOM Pedro ACC box
‘Pedro opened a box/boxes.’

b. *magpabukas* ‘permit/cause to open$_{\text{TRANS}}$”
Magpabukas ako kay Pedro ng kahon
PST.*PAG*.*PA*.open 1S *KAY* Pedro ACC apple
‘I had Pedro open a box/boxes.’

c. pag - pa - 0_{pag} - √

If, however, the Theme Topic form of the productive causative is used (meaning that the causee is the Subject/Topic), then the lexical causative morpheme reappears, but the productive causative *pag*- is dropped.

(41) Productive Causative (Causee = Topic)
papagbuksan ‘Y is made to open X by W’
?? + pa + **pag** + bukas + an
PC + E + LC + root + ThemeTopic

(42) a. Pinapagbukas ko si Pedro ng kahon
PST.*PA*.*PAG*.be.with GEN.1S *SI* Pedro ACC box
‘I had Pedro open a box/boxes.’

b. 0_{pag} - pa - pag - √

As we have seen, a similar phenomenon occurs with the lexical causative alone. In the Actor Topic form of the verb, the lexical causative is overt as in (43a). In the Theme Topic form, however, the lexical causative morpheme drops.

(43) Lexical Causative
a. ACTOR TOPIC
pagbukas ‘X opens Y’
pag + bukas
LC + ROOT

b. THEME TOPIC
buksan 'Y is opened by X'
?? + bukas + an
LC + ROOT + Theme Topic

The chart in (44) summarizes these facts and correlates *pag-* drop with the overt realization of arguments. *Pag1* is the lexical causative while *pag2* is the productive causative. Agt1 is the Agent of the lower (or sole) verb, Agt2 is the Agent of the productive causative. Note that when Agt1 is external, *pag1* is overtly realized. When Agt2 is external, *pag2* is realized. Ross (1993) captured this fact by saying that the Agent that is promoted to the subject position must be related to an overt cause morpheme.

(44)	a.	AT: lexical	pag1 - √	(Agt1 external)	(Th in place)
	b.	TT: lexical	0_{pag1} - √	(Th external)	(Agt1 in place)
	c.	AT: productive	**pag2** - pa - 0_{pag1} - √	(Agt2 external)	(Agt1 in place)
	d.	TT: productive	0_{pag2} - pa - **pag1** - √	(Agt1 external)	(Agt2 in place)

Example (45a) is the most telling case. With this form of the verb, the Theme of the lower predicate moves to the matrix subject position. Since neither Agent has become the subject, neither *pag-* is realized.

(45) a. Pinabuksan ko kay Pedro ang kahon (Schachter and Otanes 1972: 328)
PST.*PA*.open GEN.1S *KAY* Pedro NOM box
'I had Pedro open the box.'

b. 0_{pag} - pa - 0_{pag} - √

The generalization, then, that we want to be able to capture is the relation of syntactic movement of an argument to the subject position in Tagalog and the appearance of the related *pag-* morpheme.

Ross's observation is that, when the relevant Agent moves, then the related *pag-* morpheme is overt (46a). Looking at it a bit differently, when the relevant Agent has not moved, the morpheme must be covert (46b). To put this in terms of a filter, we could formulate the generalization as (46c).[33]

[33] In fact, we would also have to rule out the possibility of having both the head and the Spec empty. I assume that this is due to a problem of recoverability of information.

(46) a. [t_{AGENT} [pag-]]
b. [Agent [0_{pag-}]]
c. * [Agent [pag-]]

This is reminiscent of the Doubly Filled Comp Filter in English, which rules out a relative pronoun from appearing with the complementizer *that,* thereby accounting for the following pattern.

(47) a. * the children [who [that [I know t]]]
b. the children [who [e [I know t]]]
c. the children [e [that [I know t]]]
d. the children [e [e [I know t]]]

Sportiche (1990, 1998) generalizes this restriction to other cases of Spec, Head realization and proposes a Doubly Filled Voice Filter.

(48) DOUBLY FILLED VOICE FILTER (Sportiche 1998: 273)
*[$_{HP}$ XP [H . . .]]
where H is a functional head licensing some property P and both XP and H overtly encode P.

In his paper, this filter is intended to account for language variation in clitic doubling. If a language does not allow clitic doubling, then in that language both the Spec and the head (clitic) encode some relevant property, perhaps Case. Regardless of exactly how this prohibition on double realization is achieved, it seems that the overt realization of *pag-* above should be part of the same phenomenon.[34] The overt realization of *pag-*, then, is sensitive to what is in its Spec position. If the Doubly Filled Voice Filter is part of syntax, it seems that *pag-* drop must also be part of syntax. Further, as I assume that externalization of arguments in Tagalog is a syntactic rather than a lexical rule (contrary to, e.g., Travis and Williams 1982), one could say that *pag-* drop is sensitive to a syntactic rule.

Of course there is always an alternative. One could always say that *pag-* is optionally added in the lexicon, creating all of the possible combinations. Once the form was introduced in syntax, however, and the features that *pag-* was generated with were checked in the relevant heads, then something similar to (48) could be applied, checking the contents of Specs and the

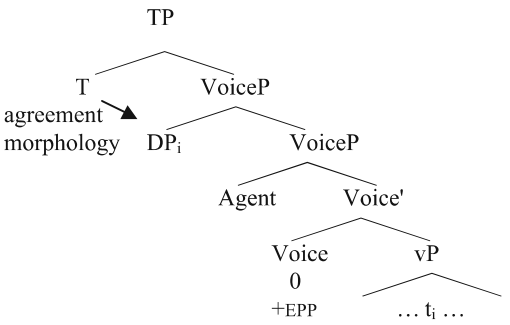
[34] A concern I have is that this sort of doubling or lack thereof occurs with functional categories, while I have been arguing that *pag-* and what it stands for is a lexical category. Others, however, such as Bowers (1993), Chomsky (1995), Harley (1995), and Kratzer (1996) would base-generate the subject in the Spec of a functional category. These facts from Tagalog could be used as an argument in favor of their view of phrase structure and against mine. I nevertheless maintain that V_1 is a lexical category, as discussed in Chapter 1.

feature content of heads, all with the same effect. In other words, what I am claiming happens in syntax could, with some technology, be applied in the lexicon. Further, Anderson (1974) discusses similar cases, which he calls "disagreement," where agreement morphemes in Abkhaz are sensitive to the position of the relevant arguments. If the argument is adjacent to the verb, the agreement is deleted. If the argument is not adjacent (for example, if it has scrambled or there is an intervening adverbial), then the agreement form must be realized. Presumably this too can be captured in the morphological component. I stand by the claim, however, that this Spec, Head effect looks syntactic enough to at least lead one to suspect that L-syntax is part of the computational component. We will see other examples later of lexicon-like behavior of syntax, but now I shall discuss an alternative syntactic account for the appearance of *pag-*.

6.4.3 Pag- as an Anti-EPP Morpheme

Rackowski (2002) presents a very different view of the function of *pag-* that is quite difficult to distinguish in its effects from the one presented here. As noted above, the distribution of *pag-* can indicate what acts as the highest syntactic argument (the highest argument of the event introduced by *pag-*) or what is *not* acting as the highest syntactic argument (any other, necessarily lower, argument). I have chosen to follow the first direction, whereas Rackowski follows the second. In Rackowski's account, *pag-* is in the head of Voice, which is just above v in her structure. It alternates with a zero morpheme that has an EPP feature which forces movement of the closest DP that it c-commands. This means that, when *pag-* is absent (i.e., the morpheme is zero), a DP other than the highest semantic argument has been moved above this highest argument. It is this other argument (*not* the Agent) that will behave as the highest syntactic argument. One of the behaviors of this highest syntactic argument, according to Rackowski, is that the verbal morphology agrees with its function, accounting for the voice morphology on the verb. The tree below gives the flavor of her account.

(49)



As mentioned earlier, it is very difficult to find empirical differences since one account focuses on what has moved, and the other focuses on what has not moved. I provide one set of data that may be used to support my account of *pag-* deletion. However, I concede that the EPP account is an interesting alternative.

In Section 2.5.3, we saw cases of NOMINATIVE-3RD (N3) languages, such as Kalagan and in Section 3.4, I suggested an account for these structures using partial A-movement. Rackowski's account of Tagalog depends on the highest syntactic argument moving to a position above the highest semantic argument when *pag-* is not present. The actual position of movement is difficult to determine in Tagalog, which has fairly free word among the elements that appear postverbally. Recall that N3 languages have the following word orders (e.g., Pangasinan, adapted from Mulder and Schwartz 1981: 244); the DP in bold is the subject.

(50) Pangasinan: V – (Actor) – Subject

a.	V	**Act**		Pat	Rec	Ben	Instru	Loc
b.	V	Act	**Pat**	—	Rec	Ben	Instru	Loc
c.	V	Act	**Rec**	Pat	—	Ben	Instru	Loc
d.	V	Act	**Ben**	Pat	Rec	—	Instru	Loc
e.	V	Act	**Instru**	Pat	Rec	Ben	—	Loc
f.	V	Act	**Loc**	Pat	Rec	Ben	Instru	—

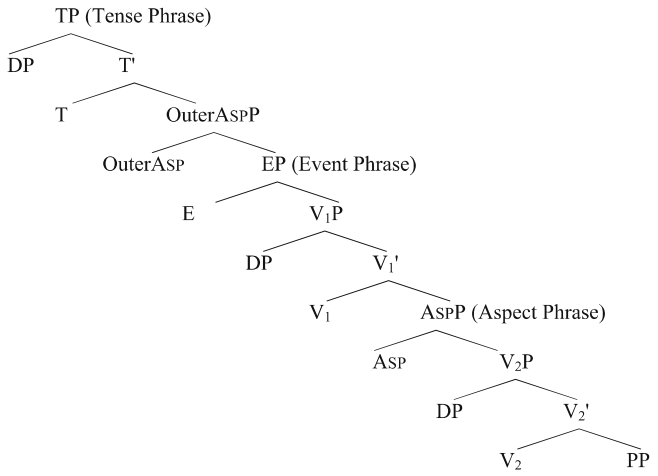
There are two reasons why it would be difficult to extend Rackowski's account to N3 languages: (i) the verb will not agree with the closest DP, and (ii) the DP will not have moved across the external argument, suggesting that it cannot be an EPP feature that is at work. Note that verbal morphology in this language agrees with the DP in bold. I refrain from extending Rackowski's account to these data, but some nontrivial changes would have to be made to account for the similarity of the distribution of *pag-* and the voice morphology on the verb.

Now I will turn to some questions concerning L-syntax and, more generally, the role of the lexicon.

6.5 L-Syntax and the Lexicon

The phrase structure that I have been arguing for is given in (51).

(51)



In this section of the chapter, I have been arguing that what happens below E is both similar to and different from what happens above E. The same morpheme may be added both below and above E. Some of the effects of this morpheme addition are the same in both cases: the V_1 morpheme may add an extra Case and an extra external argument. Some of the effects of this morpheme addition are different: the productivity, phonology, and meaning of the morpheme may not be predictable below E but are expected to be predictable above E. I want to capture the similarities by saying (i) that it *is* the same morpheme, and (ii) these morphemes are added in the syntax. And I want to capture the differences by saying that below E we find a syntax that is very lexical in nature—L-syntax. Now I want to look more closely at why there should be any differences, and what the extent of L-syntax can be.

We have seen that productive causatives are constructed in S-syntax while lexical causatives are constructed in L-syntax. Further, the research on causatives has shown that productive causatives often encode two events while lexical causatives encode only one (e.g., Fodor 1970; Shibatani 1972, 1976). As well, we can see in many languages that, at least on the surface, productive causatives are always morphologically complex while lexical causatives can be monomorphemic. Putting all of these facts together, I propose that the limit of L-syntax is the same as the limit for a lexical entry, which is the same as the limit for one event. Carter (1976) investigates what the limit on a "word" should be. If we worry about what information a word can contain, we must also worry about how "big" a word can be. For instance, one of the restrictions that Carter proposes is given in (52a) (Carter 1976: 31 (16)), while one of his observations is given in (52b) (Carter 1976: 39 (k)).

(52) a. there exists a number n such that there is no verb in the lexicon to which we are led to assign a SR [semantic representation] with more than n occurrences of "CAUSE"

b. there is no verb paraphraseable as 'to $verb_i$ to $verb_k$ ...' except where $verb_i$ is 'cause'

I will claim that the number n is 1 and therefore the largest number of verbs in a lexical representation of a verb is 2.[35] These two verbs will correspond to V_1 and V_2 in the trees that I have been presenting.

In English, the lexical causative clearly consists of one word and the productive causative consists of two words. In Malagasy and Tagalog, the demarcation between lexical and productive causatives is not so clear since both types of causative morphemes are affixal. There is something, however, that distinguishes the lexical causative from the productive causative and that is the head E. I claim, then, that the position of E demarcates the edge of an event and therefore the edge of a word in Carter's terms (in some sense to be determined later). E binds the event variable in V_1P, but this only makes sense if we understand what V_1 represents. For those who share the assumption that phrase structure and event structure are related, V_1 often introduces some causal element. For those who believe that subjects are internal to the VP, the Spec, V_1P introduces the Agent argument. Work that studies lexical entries in terms of lexical decomposition (e.g., Carter 1976; Dowty 1979) recognizes CAUSE as the highest possible predicate.[36] Work that studies lexical entries in terms of theta-grids recognizes Agent as the highest possible theta-role in any theta-role hierarchy (Baker 1988; Larson 1988; Grimshaw 1990). Further, not only are CAUSE and Agent the highest predicate and theta-role, respectively, in a lexical entry, they are unique in any lexical entry. In other words, no lexical entry can have two CAUSES nor can a single theta-grid contain more than one Agent. This has the result that, once a CAUSE predicate has been introduced in a lexical entry, or an Agent theta-role added (if we think of constructing a lexical entry from the bottom up), the lexical entry must be complete. In terms of the tree being discussed, once V_1 has been added, no more lexical categories may be added (since no more predicates can be introduced). Therefore, E, by virtue of its position as the binder of the event variable in this top V, marks the edge of a lexical entry, that is, the edge of the domain of the lexicon. After this, as we move further up the tree, any additional lexical categories must contain an independent lexical entry. As such, E also marks the boundary between L-syntax and S-syntax.

We now have an explanation for why the examples in (38) are ungrammatical. The Agents of *laugh* and *sneeze* must have been introduced by V_1. The event variable *e* of this lexical head must be theta-bound by E (as discussed in Section 3.3.2.2). If an additional argument is to be introduced, then, it must be done via an additional lexical item added above E. In English, such a lexical item would be the

[35] Carter allows for two CAUSES and therefore three verbs. He needs to do this to allow for four-argument verbs such as *trade* (W trades X to Y for Z), though he acknowledges that this sort of verb is quite restricted (Carter 1976: 34). I do not have a proposal for how to handle these predicates but still want to retain a more restrictive system.

[36] Or DO if an Agent may be introduced by a DO predicate. It may be that, when DO selects a BECOME predicate, it is CAUSE.

productive causative *make*. While we have seen that lexical items that appear to be monomorphemic (such as $melt_{\text{TRANS}}$) are in fact morphologically complex with zero morphology, no productive causative morpheme is consistently represented by a zero morpheme.[37] This would explain Carter's claim concerning the limitations on what can be encoded in one "word."

Now we can see how lexical causatives and productive causatives are distinguished in syntax. This is very clear in Tagalog and Malagasy, where the morphology is much more transparent. While only one causative morpheme exists in each of these languages, it can serve as either the lexical causative or the syntactic causative depending on where it occurs in the phrase structure. If it occurs below E, it is part of L-syntax and is the lexical causative. This is because it is part of a lexical entry and as such shows the idiosyncrasies of lexical entries. If it is above E, then it must be attached to the stem via S-syntax and it represents a lexical item on its own. This explains its productivity and predictability. The position of the morpheme is easy to determine in these languages due to the fact that E is lexically realized. A causative morpheme appearing closer to the root than the E morpheme will be a lexical causative and a causative morpheme appearing further from the root than the E morpheme will be the productive syntactic causative.

(53)

		V	-	E	-	V	-	√
	Malagasy:	an	-	f	-	an	-	√
	Tagalog:	pag	-	pa	-	pag	-	√
		PC				**LC**		

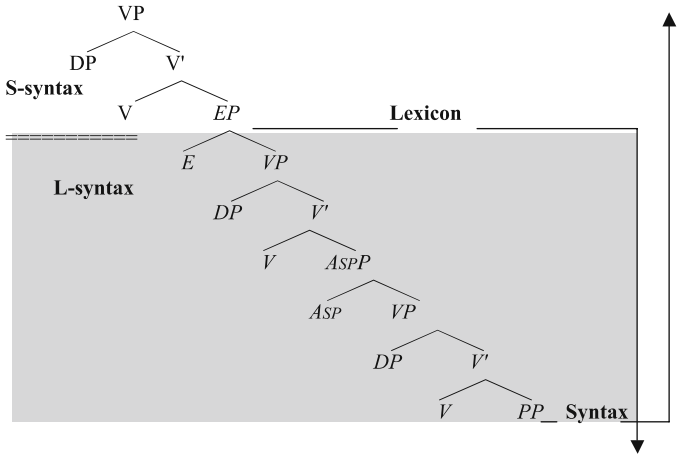
6.6 Summary

The goals of this section were twofold. I want to contribute to the discussion of L-syntax as a definable submodule of the grammar, and more particularly a submodule of the syntactic component. I also want to show the importance of looking at a wide variety of languages when investigating these questions. In English, where many morphemes are arguably zero, it is often hard to find evidence for abstract heads (like E) or operations (like lexical causativization). Other languages often provide the needed evidence for these heads or processes. After looking carefully at causativization in Tagalog and Malagasy, I have proposed that the differences between lexical causatives and productive causatives are not determined by the choice of morphemes, since the same morpheme is used for both processes in each of these languages. Rather, the difference stems from the position of these morphemes in the tree. Further, I argue that the difference in these positions is easily determined in these two languages because of an intervening morpheme, which I assume indicates the existence of an event-related head marking the boundary between lexical processes and syntactic

[37] We have seen that the Tagalog productive causative *pag-* is, in certain configurations, realized as zero, but it does have an overt form.

processes. I present a picture of syntax in general and the interaction of L-syntax and s-syntax in particular in (54).

(54)



I claim that the lexicon and the computational component are allowed to overlap up to a structurally defined point. In terms of phrase structure, that point is the event-related head that I have labeled E. In terms of semantics, the lexicon can encompass, at most, one event. In other words, a lexical entry may refer to any of the lexical head positions that occur below E since those head positions encode subparts of a single event. It is harder to argue that this must be a case of the lexicon exerting an influence on the syntax, rather than the syntax exerting an influence on the lexicon. One of my main reasons for taking the direction that I have chosen has to do with the productivity and predictability of the event-related categories that appear within the domain of L-syntax. Hale and Keyser (1993) make it very clear that functional categories cannot be part of L-syntax. They write "no functional categories are involved in the verb formation processes at issue here … no functional projections are present at points internal to the domains defined by lexical entries" (H&K 1993: 98). But here we encounter a problem with forms such as the Navajo ones we saw in Chapter 3 (Section 3.2.2). In the template given for the order of morphemes in Navajo, functional material is interspersed with the lexical material. Furthermore, the lexical material has the idiosyncratic earmark of L-syntax. Repeating an example from Chapter 2, I give the morphological make-up of the verb meaning 'to pray' below. It consists of three parts: two prefixes, which, according to Speas (1990: 208), are not productive, and a stem that cannot occur on its own.

(55) so … di … zin 'to pray' 1 … 6 … stem

These subparts of the lexical entry occur in particular places in the template, as indicated by the numbers given to the right of the entry above. In between these

parts of the lexical entry appear such inflectional-type elements as aspectual markers, tense, and object and subject agreement. If the inflectional-like material cannot appear in the lexicon, the solution is to allow the lexical entry to be formed in the syntax.

This view of syntax has drawbacks, mainly having to do with semantic and lexical idiosyncrasies. For example, the semantics within this component is often not compositional. The whole does not entail the subparts, so, for example, the (a) utterances below do not entail the (b) utterances in English or Tagalog.[38]

(56) a. Nagsabog ng bato ang magsasaka
PERF-*PAG*-sabog ACC stone NOM farmer
'The farmer scattered the stones.'

b. Sumabog ang bato
AT-PERF-sabog NOM stone
'The stone exploded.'

(57) a. The make-up artist reddened the movie star's cheeks.
b. The movie star's cheeks reddened.

In order to account for those idiosyncrasies, I am proposing that syntax has recourse to the lexicon once the structure of an event is complete. While head movement may continue to form longer words beyond this domain, they are not the "words" whose limits Carter investigated. To distinguish between the two types of words, we can label one set E-words (event words) and the other M-words (morphological words). Clearly the two are not necessarily represented through a one-to-one mapping. The table below shows that the boundaries of M-words and E-word may vary (as we have already seen in Chapter 1).

(58) M-words vs. E-words

	1 M-word	2 M-words
1 E-word	English: *wash*	Edo: *naki kiri* 'kill' Fongbe: *kú drO∼* 'dream'
2 E-words	Malagasy: *m-an-f-an-sasa* 'make wash' Tagalog: *m-pag-pa-0-bukas* 'make open'	English: *make wash*

[38] The view of modularity internal to syntax that I have sketched has much in common with Marantz's work (e.g., Marantz 1997, 2001). Marantz also develops a view of syntax that includes an idiomatic/idiosyncratic component. I leave it to the reader to compare the two views.

The category E limits the domain of an E-word and one event. We can see why English is not the best language to study when investigating these boundaries, since English generally has a one-to-one mapping. English does not have M-words that go beyond the E-domain, whereas Malagasy and Tagalog do.[39] Moreover, English does not have multiple M-words within one E-word, while Edo and Fongbe do, as we will see below.

Chomsky (2000: 99–101) dismisses as uneconomical the possibility that the lexicon might be accessed more than once. He uses a metaphor to clarify the notion of operational complexity.

> Suppose automobiles lacked fuel storage, so that each one had to carry along a petroleum processing plant. That would add only bounded "complexity," but would be considered rather poor design. Something similar might well be true for language.

In applying this to the question of access to the lexicon, he writes,

> The obvious proposal is that derivations make a one-time selection of a *lexical array* LA from Lex[icon], then map LA to expressions, dispensing with further access to Lex. . . . If the derivation accesses the lexicon at every point, it must carry along this huge beast, rather like cars that constantly have to replenish fuel supply.

Of course, Chomsky also points out in his discussion that ultimately "[t]he questions are empirical. Investigating them, we can hope to discover whether (and if so how) what might reasonably be considered complexity/economy enter into language design." Given the idiosyncratic nature of L-syntax, it is clear that the lexicon has to be involved with the output of the lexical item that encodes the final argument (e.g., Agent) or the final predicate (e.g., DO or CAUSE). If the lexicon can be accessed only once, then the process of L-syntax in its entirety has to occur within the lexicon. We lose on several counts, however, if this is the case. We lose the generalizations that would now appear in two different grammatical components—in the computational system and in the lexicon. The processes that we have seen are restrictions on head movement, subject sensitivity of anaphors, and restrictions on Spec and head positions that are filled simultaneously. We also lose generalizations provided by a theory of multifunctionality that allows lexical items (such as *an-* in Malagasy and *pag-* in Tagalog) to appear at different positions on a syntactic tree, with differences in function being derived from these differences in position. Finally, we lose the flexibility of allowing inflectional-type material to appear internal to lexical entries, as we have seen in Tagalog (aspectual reduplication) and Navajo. As is often the case, we have found the computational system to be less than optimal. However, we can contain the domain within which this less than perfect design must function.[40]

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[39] A different question arises with words that represent features on a root like tense, such as *go*/*went*. This sort of syncretism would be dealt with differently. Importantly, the semantics of these forms is always compositional.

[40] Much work being done within Distributed Morphology (Halle and Marantz 1993) is ignored here. There is also the issue of Multiple Spell-Out, where bits of syntax are sent to

6.7 Discontinuous Lexical Items

The cases we have seen for L-syntax above all involve predicates that are encoded in one M-word, created through head movement. It is fairly easy to argue that M-words can contain bits of syntax, as implied by Baker (1985) and argued for explicitly in Baker (1988). The clearest cases of this are words that are created in the S-syntax, as they are morphologically productive and semantically compositional. Let us take the example of future tense in English versus French. In English, the string *will eat* is represented by two syntactic heads. In French, it is less clear that the morphological word *mangerai* 'will eat (1SG)' represents two (or more) separate syntactic heads, but one can make the conceptual argument that, languages being more similar than different, the French affixes act similarly to the separate words in English. The French morphological word *mangerai*, then, is also represented by (at least) two heads, T and V.[41] We have used similar argumentation to claim that the Malagasy morphological word *mampanasa* 'make wash' should have the same syntactic representation as its English translation, which is represented by (at least) two syntactic heads. In both the French future and the Malagasy productive causative, the morphology is productive and the meaning is compositional. This, combined with the language variation, makes a syntactic analysis appealing.

It is harder to argue for a syntactic account of phenomena that are less productive and whose meaning is not compositional, such as *magsabog* 'to scatter' in Tagalog. It becomes harder still to argue for syntactic complexity for a form that appears to be morphologically simple, such as *kill* in English. However, as in the cases of S-syntax, we can find cross-linguistic variation that supports a syntactic analysis. For this reason, I shall turn to other languages where one E-word can be represented by two M-words, in other words, languages that appear in the top right-hand corner of the table in (58).

I have been arguing for an articulated VP structure. While one argument for this structure comes from the position of derived elements within the VP, many of the other arguments come from verbal morphology such as reduplication in Tagalog and morpheme order in Navajo. In this view of phrase structure, the VP contains more than one lexical head and we have seen these heads filled with different morphemes in different languages. In Tagalog, V_1 is filled with *pag-* and V_2 with the verb root while a reduplicative morpheme can be attached between the two. In Navajo, a verb like *so. . . di . . . zin* 'to pray' has parts that can be separated by aspectual-type material. If all of these heads do exist, however, we might expect to see them filled with freestanding words as

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the morphological component and lexical insertion is done at that point. I am optimistic that the observations above could be made to fit into this view of the computational component, but I leave it for future work.

[41] I am representing the minimum number of heads. In my phrase structure, *mangerai* contains many more heads, as discussed in Section 3.3.1.1.

well. In this section, I present some plausible examples of languages that do fill these heads with separate words. As pointed out by Hale and Keyser (1993), given various views of articulated VPs and especially their own view of the projection of arguments, such languages are expected to exist (Hale and Keyser 1993: 96).[42]

> In reality, all verbs are to some extent phrasal idioms, that is, syntactic structures that must be learned as the conventional "names" for various dynamic events. That is our view of the matter, in any event, and it seems to be forced on us by the very framework we are considering. Moreover, it is not without empirical support, at least at the observational level. In many languages a large percentage of verbal lexical items are *overtly* phrasal (e.g. Igbo, Nwachukwu 1987); in others a healthy inventory of "light verb" constructions represent the class of overtly phrasal lexical entries (e.g. Japanese, Grimshaw and Mester 1988; English, Kearns 1988); and in still others (e.g. the Tanoan languages, including Jemes, Tewa, and the Tiwa languages), the verbal lexicon contains an extraordinary number of entries whose morphological make-up is overtly the result of incorporation. To be sure, many languages boast a large inventory of simple monomorphemic verbs. But our guess is that most, probably all, superficially monomorphemic verbs are lexically phrasal, possessing a structure that is syntactic. . .

In the next two sections, I present two language types with phrasal lexical items. First I discuss serial verbs, then inherent complement verbs.

6.7.1 Serial Verb Constructions

In Navajo, we have seen an extreme case where a lexical item seems to be split up over several nonadjacent morphemes in a *morphologically* complex structure. Serial verb constructions (SVCs) are cases where a lexical item can be seen to be split up over several nonadjacent words in a *syntactically* complex structure. Here I present the possibility that SVCs exemplify a case where we can see the articulated VP in the syntax. In particular, I suggest that SVCs are the most obvious place to find V_2Ps being realized independently. This view of SVCs follows on the analyses proposed by Baker (1989, 1991) and Larson (1991).[43]

To start with the theory rather than with the data, we can ask what properties a V_2P standing alone would have. As we have seen in Chapter 4, a single VP generally characterizes an (end)state. Therefore, one property that a V_2P would have is stativity. Further, given that no higher VP will be projected, the external theta-role in the sense of Williams (1981), generally the Agent, will have to be satisfied through an alternative means to regular theta-role assignment. Finally, since the traditional external theta-role cannot be assigned, some other theta-role will appear to be the highest. These properties are summarized below.

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[42] Marantz (1997, 2001) also discusses idiosyncratic phrases.

[43] There is a vast literature on serial verb constructions and many different accounts (see Déchaine (1993), and, for an overview, Muysken and Tonjes (2006)). Baker and Stewart (1999b, 2002), and Collins (1994) present two current views of serial verb constructions. In fact, many analyses of SVCs have to have some notion of a split VP with an independently occurring V_2P.

(59) Properties of V_2P

(a) Stative

(b) External theta-role (Agent) satisfied by different means

(c) Internal theta-role (Theme) appears external

Turning to the relevant data, we see that all of these properties can be found in a certain set of SVCs. Further, by assuming that the second (and in these cases) last V in an SVC is, in fact, an instance of V_2, we are able to use an analysis of SVCs proposed by Larson (1991) while avoiding the problems that this analysis raises, which were pointed out by Baker (1989).

Larson (1991) suggests that SVCs of the type given in (60a, b) below are like resultative predicates in English (60c).

(60) a. Sranan (English-based Creole of Surinam)

Kofi naki Amba kiri[44] (Larson 1991: 10a)

Kofi hit Amba kill

'Kofi struck Amba dead.'

b. Fon (West African Kwa language)

Kòkú só àsõ ó távò-j̈í (Larson 1991: 7b)

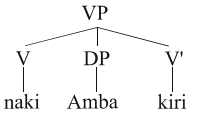
Koku take crab put table-on

'Koku put the crab on the table.'

c. Black Flag kills bugs dead. (Larson 1991: 20b)

The analysis that Baker (1989) proposes for an SVC of the type in (60a) is given in (61) below.[45]

(61)



Baker tries to formally capture the following characteristics of SVCs. If the first V has an object, this object is shared by the second V. Further, the second V must assign an internal theta-role to this object. Baker's phrase structure captures this observation since the DP between the two Vs is structurally

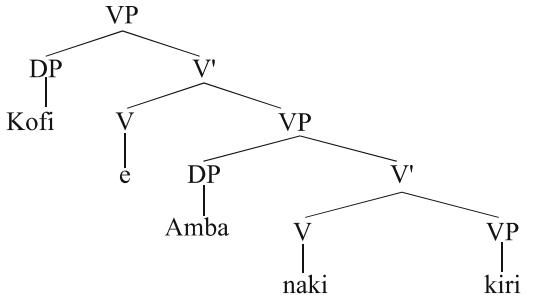
[44] The use of the verb 'kill' here rather than 'die' is an interesting cross-linguistic distinction, which I shall set aside for now.

[45] In the discussion of older accounts, I update the terminology using DP instead of NP.

internal to the projection of both of the Vs. The Projection Principle, then, would force both Vs to assign a theta-role to the DP. UTAH will ensure that both of these theta-roles are internal (under the assumption that external arguments must be external to the VP).

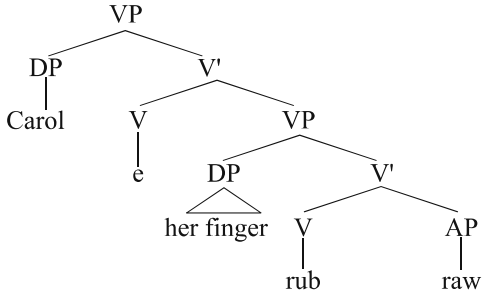
Larson (1991) views this differently. It is clear that Baker must make some innovative assumptions concerning X′-theory to allow structures such as the one in (62) since the VP will contain two head Vs. Larson suggests that these innovations are unnecessary. Instead, he proposes the following structure for the same string, relating it to resultative predicates, which he gives the structure in (63).

(62)



(Larson 1991: 40)

(63)



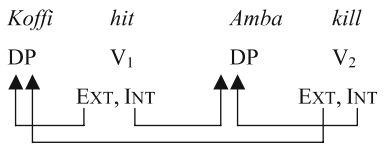
(Larson 1991: 39)

Just as the internal DP *her finger* in the resultative structure is "shared" by both the main V *rub* and the secondary predicate *raw* (i.e., both assign theta-roles to it) in (63), so is the internal DP *Amba* in the SVC shared by both Vs in (62). In both constructions, the main V assigns the primary theta-role, and the resultative predicate, be it a VP or an AP, assigns a further theta-role.

Baker (1989) presents an interesting argument against Larson's analysis of SVCs. As he points out, secondary predicates in English, for example, are APs and PPs, and while they assign an additional theta-role to the object of the transitive main verb, they assign an external theta-role to this position, not an internal theta-role. Taking our original SVC example in (60a), we see that the second verb *kiri* 'kill', the one we are trying to relate to a secondary predicate, assigns its internal theta-role, Theme, to the shared object. Its external theta-

role, Agent, is co-assigned with the main verb to the subject position. This is shown schematically below.

(64)



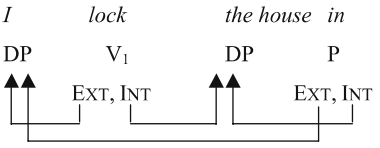
Baker points out that a true parallel between an SVC and a secondary predicate would appear be an example such as the following, which are clearly ungrammatical.

(65) a. * I locked the house in. (Baker 1989: 22)
= I locked the house such that I was in the house.

b. * John tested his son proud.
= John tested his son, and, as a result, John was proud of his son.

In each case, the external argument of the secondary predicate is co-assigned with the main verb to the subject of the sentence, and the internal argument of the secondary predicate is co-assigned with the main verb to the shared object. In other words, in (65a), the shared subject *I* is the external argument of both *lock* and *in*, and the shared object *the house* is the internal argument of both *lock* and *in*, giving the intended reading that I locked the house and I was in the house.

(66)



Obviously, this sort of construction is not possible. Given the proposal that V_2P can act independently, however, we can explain this difference, not by changing how we look at secondary predication, but by changing how we look at SVCs.

I will assume Larson's structure in (62) with the additional claim that the VP of the secondary predicate is crucially a V_2P. Why must it be a V_2P? This is explained by the first property of V_2Ps given above. The resultative must be a state. This is clear in the English examples where the resultative is encoded by an AP or a PP, archetypal states.[46] The requirement that the result be a state, then,

[46] Note that a change of state predicate cannot be used, as the following contrast shows (see Embick 2004).

(i) I cracked the egg open/*opened.

forces a verbal projection to be restricted to V_2Ps.[47] Once this structure is set up, the rest follows since the theta-assignment properties of V_2P more closely follow the theta-assignment properties of PP and AP. The "external" argument (i.e., the highest argument) of the V_2 will be an *internal* argument within its theta-grid. In other words, as we saw for Larson's tree, the Theme is like the inner subject, an external argument of V_2.

How exactly this shared theta-role is assigned is debatable. I see two possibilities. One is that PPs and APs, when acting as predicates, do not assign their external arguments to their Spec positions, but rather, as maximal projections with an unsaturated theta-role, they assign this theta-role through predication, as in Williams (1980). Another possibility is that there is an empty category in the Spec position. Collins (1994) argued for the existence of an empty category in SVCs using agreement facts to support his claim.

The topic of SVCs is enormous and deserves a book of its own. The conclusion to be drawn now for the purposes of the present chapter is that the separate parts of the articulated VP can occur as independent lexical items.

6.7.2 Inherent Complement Verbs

Another case where the articulation of the VP can be seen in its syntactic configuration is in VPs that contain inherent complement verbs (ICVs). Some examples of this construction from Fongbe (Avolonto 1995: 72ff) are presented below. In (67a), we can see that the verb *kú*, used on its own, means 'to die'. However, this same verb, when in construction with the N *drɔ̀* 'dream', means 'to dream'. In (68) and (69), depending on what the direct object of the verb *dó* or *xà* is, the sense of the VP changes completely. In (68a), the verb takes a normal DP complement, while in (68b), it is merged with an inherent object.[48]

(67) a. gbɔ̌ ɔ́ kú
sheep DET die
'The sheep died.'

b. Kɔ̌kú kú drɔ̀
Kokou *KU* dream
'Kokou dreamed.'

Prepositions, however, seem to have to show motion in these structures, resulting in the difference between *I put the book onto the table* and **The book is onto the table*; *I pushed the table to*/**at the wall* and *The table is *to*/*at the wall*. I have no explanation for this.

[47] This raises the question of why stative verbs like 'know' are not acceptable in such constructions. Transitive stative verbs arguably have a more complex structure (see, e.g., Noonan 1992a).

[48] All examples are taken from Avolonto (1995) but the English glosses and translations are my versions of his French glosses and translations.

(68) a. Àsibá dó gbàdé
Assiba sow corn
'Assiba sowed some corn.'

b. Àsibá dó wèzùn
Assiba *DO* race
'Assiba ran.'

(69) a. Kɔ̃kú xà àkwɔ́ɛ́
Kokou count money
'Kokou counted money.'

b. Kɔ̃kú xà yɛ̀whè
Kokou *XA* prayer
'Kokou prayed.'

Other examples of ICV constructions are given in (70). Here the same verb can take a variety of the inherent objects with a concomitant change of meaning.

(70) a. Àr̃inɔ̃lá ɖì zɔ̀nlìn
Arinhola *DI* step
'Arinhola walked.'

b. Kɔ̃kú ɖì xɛ̀sì (nú àvǔn ɔ́)
Kokou *DI* fear (for dog the)
'Kokou was afraid (of the dog).'

(71) a. Kɔ̃kú dó xɛ̀sì *(àvǔn ɔ́)
Kokou *DO* fear (dog the)
'Kokou frightened the dog.'

b. Àr̃ìɔ̀lá dó àwù
Arinhola *DO* Shirt
'Arinhola got dressed.'

In these constructions, while the constituent parts—the verb and in particular the inherent object—lend some meaning to the whole, the specific meaning of the expression is noncompositional. In comparing (70b) and (71a), it appears that *dó* is causative while *ɖì* is stative. This contrast, however, is not found in the comparison of (68b) and (70a). As suggested in the passage below describing the same construction in Igbo, cited by Avolonto (1995: 71) and credited to

Nwachukwu (1987: 22, 1985: 61), these seem to be fixed expressions that must be learned and stored as such.

> An inherent-complement verb is one whose citation form is obligatorily followed by a meaning-specifying noun complement … Because it is lexically specified as part of the verb, the inherent complement is by definition strictly obligatory … and any dictionary entry which excludes the complement is so ambiguous as to be meaningless (1987: page 40).

Avolonto clearly shows that these nominals do not behave syntactically like objects. They cannot undergo WH-movement, cliticization, relativization, or clefting. Examples from the discussion on WH-movement are given below. The construction in (72a) can only be a question formed from the construction in (68a), and could not be used to ask for the content of an ICV construction using the verb *dó*, such as those given in (68b), and (71a, b). Likewise, the question in (79b) can be used to form a question about (69a) but not (69b).

(72) a. étɛ́ Àsíbá dó (cf. (5))
what Assiba sow
'What did Assiba sow?'

b. étɛ́ Kɔ̌kú xà
what Kokou count
'What did Kokou count?'

Cliticization and relativization work similarly, which is not surprising given that the N has no referential content. Clefting, however, has presents an interesting twist. Avolonto first shows that there is clefting of objects and of verbs, and that when the object is clefted, there are three possible interpretations. In (73) below, we see a case where an object is clefted. The three interpretations are given. In essence, the focus can be on the object alone (i), the verb and perhaps the object (ii), or the whole VP (iii) (Avolonto 1995: 83).

(73) àsɔ́n wɛ́ Zuléma xɔ̀
crab FOC Zulema buy

i. It is crab that Zulema bought (and not bread)
ii. It is buy crab that Zulema did (and not prepare crab/rice)
iii. It is buy crab that Zulema did (and not prepare rice)

When the verb undergoes predicate clefting, there is only one reading that involves the verb meaning alone. This is shown in (74) (Avolonto 1995: 83).

(74) xɔ̀ wɛ̀ Zulemà xɔ̀ àsɔ́n ɔ́
buy FOC Zulema buy crab deictic
It is buy crab that Zulema did (and not prepare crab/*rice)

Avolonto stresses the difference in meaning between (73) and (74). This has some interesting implications when applied to clefting in ICV constructions. To begin with, note that only the "object" and not the "verb" can cleft. This is shown in (76), where a cleft construction is formed from the example given in (75).

(75) Kòfí ɖì sà
Koffi DI walk
'Koffi went for a walk.'

(76) a. sà wɛ̀ Kòfí ɖì
walk FOC Koffi DI
(i) It is walk that Koffi did and not work.
(ii) * It is a walk that Koffi did.

b. * ɖì wɛ̀ Kòfí ɖì sà

These facts are particularly interesting given that this is the object that resists movement in WH-constructions, cliticization and relativization. Further, the element that we have been led to believe is a lexical entry is now a discontinuous element. Finally, what appears to be the verb cannot cleft. This shows clearly that the object has to be visible to the syntax as a separate element in spite of its semantic dependency on the verb. As well, Avolonto reports that the cleft construction's meaning is closer to the interpretation of predicate clefting than it is to object clefting. One could imagine that a contrast could be set up between *ɖì sà* 'walk' and *ɖì xɛ̀si* 'fear' by clefting the inherent object, but this does not seem to be possible.

In sum, inherent objects are syntactically independent, as the formation of the cleft construction shows. However, they have no independent semantics. Like serial verb constructions, bits of lexical entries can appear as independent words.

6.8 The Lexicon and Lexical Categories

There are two more questions that I would like to explore having to do with L-syntax and S-syntax. In the end, I will have only suggestions for answers. One question is what information exactly is contained in a lexical entry, and the other is whether there are limits on M-words.

6.8.1 Lexical Entries

Recent work has suggested that the lexicon is quite impoverished (e.g., Marantz 1997; Borer 2005). This trend started with Hale and Keyser (1993), in which much of the lexicon was argued to be, in fact, part of syntax. If argument

structure can be derived from the syntactic structure, one can ask what is left in the lexicon. In fact, the picture that I am developing here is quite conservative. It also contains a certain amount of redundancy. I assume that roots have categorial signatures. This conclusion comes from work by Demirdache and Matthewson (1995) on Salish and work I have done on Malagasy (Travis 2006). I also assume that full theta-grids have to be specified for roots. I argue in Chapter 7 that certain theta-roles are assigned by structural configuration and some by the lexical specifications of the root. Clearly, because there is a distinction, not all theta-roles can be created by syntax. We have also seen that the addition of the external argument through lexical causation can change the meaning substantially. For example, Agent + $\sqrt{\text{EXPLODE}}$ does not mean *X explodes Y* in Tagalog. Therefore, there has to be some return to the lexicon for the details of the semantics of these forms. While I do not have the whole view of the lexicon fleshed out, it still houses a fair amount of information, some of which is redundant with the computational component, not unlike older views. In fact, since most lexical information, in my view, is scattered over syntactic heads, the overlap is substantial.

6.8.2 M-Words

In the discussion above, I have suggested that there is a limit on the domain of an E-word. One could ask whether there is also a limit on the domain of an M-word. In a way, this is the question that Li (1990) addresses in his research on the constraints on head movement. Li claims that improper movement includes not only XP movement from an A position to an A′ position back to an A position, but also X^o movement from a lexical head to a functional head and back to a lexical head. If Li's generalization is derivable from this extension of improper movement, as he suggests, the phrase structure I propose in this book would run into serious problems.[49] In Chapter 3, I argued that there is movement from V (a lexical category) to ASP (a functional category) and back to V.

(77) Tagalog Aspect: V ⇒ ASP ⇒ V

nagtutumba:	n-	m-	pag-	RED-	$\sqrt{}$tumba	
			V_1	ASP	V_2	IMPERFECTIVE 'is taking out'

In this chapter, I propose that causatives in Malagasy involve head movement from V to E to V.

(78) Malagasy causatives: V ⇒ E ⇒ V

0	+	m	+	an	+	f	+	an	+	$\sqrt{}$ala = *mampanala*	'to make X take Y out'
T		E		V_1		E		V_1		V_2	

[49] Li extends Binding Theory to include heads so that improper movement of heads, like improper movement of XPs, can be subsumed under Binding Theory.

While, on one hand, the presence of an intermediate functional category looks problematic, on the other hand, the presence of such a category may solve other problems. In Baker (1985: 374), an example of a causative in Chamorro shows that agreement may occur between the causative morpheme and the verb stem.[50]

(79) Hu#na'-fan-s-in-aolak i famagu'un gi as tata-n-niha
1SS-CAUS-PL-PASS-spank the children OBL father-their
'I had the children spanked by their father.'

In (79), we see the plural agreement marker *fan-* occurring between the causative marker *na'* and the lower verb, which has been passivized.[51] If agreement is to be encoded through Spec-Head agreement or an AGREE relation with a functional category, as assumed above, then the existence of agreement here indicates the existence of a nonlexical category between the causative verb and the lower verb. While this may appear to be counter-evidence against Li (1990), his otherwise robust general observation that inflectional-type material does not occur within causatives demands an explanation. We have seen that the type of phonology in Malagasy changes at E. Further, Li observes that there are no cases of head movement from V through T and C to another V. In my terms, there is no M-word that crosses C. Following ideas presented by Morita (2005) and Newell (2008), I suggest that these two observations are due to phases. E would represent the edge of one phase. If the material below E is sent to PF, any further morphological process must be similar to compounding. C would represent the edge of the next phase,[52] at which point there would be no morphological process to combine elements further. With this much inflectional structure, the construction would have to be periphrastic.

6.9 Conclusion

While most syntax has the blind productivity that one would want in a computational system, I have argued that one corner of syntax, L-syntax, has to be allowed one "pit stop" before continuing in the derivation. An event-related

[50] Transcription and glosses are from Baker (1985).

[51] I assume that, in some languages, passive morphology may appear in V_1, thereby allowing a different representation of the external argument that is introduced by the V. In Chamorro, then, the passive morpheme would be in V_1 just below E.

[52] More exactly, any inflectional material above E would be part of the next phase so that even a TP that is selected by a V would constitute a phase. This is similar to Li's observation that any move back to a lexical category after T or C has been added would violate proper head movement.

category, E, selects V_1P and represents the point at which the syntax may return to the idiosyncratic part of the lexicon. This head E delimits the edge of an event and therefore the edge of an E-word. By granting the syntax this possibility, we allow it to keep control over Spec, Head relations, binding possibilities, adjunction structures, and head movement—all phenomena that arguably hold in L-syntax.

Chapter 7
The Syntax of Achievements

7.1 Introduction[1]

In the preceding chapters of this book, I have set up a view of phrase structure that incorporates insights from the domains of semantics, morphology, and syntax. The result is a proposal that phrase structure mirrors event structure quite closely and this similarity has overt effects in the syntax and in morphology. The contribution of semantics is that proposals for subeventual structure are reflected through an articulated VP structure. The effect of this structure is that aspectual verb classes can be distinguished syntactically, which explains why there appears to be such a tight correlation between verb classes and certain syntactic phenomena such as case assignment. Semantic arguments for phrase structure might work at an intuitive level, but since not all semantic distinctions are necessarily captured by syntactic differences, such intuitions must be confirmed by results from pure syntax. For this reason, arguments from morphology (involving Mirror Principle/head movement-type phenomena) and syntax were advanced to support the claim. We have seen that inflectional-type morphemes can appear within a lexical item, suggesting that (i) there should be some overlap between syntax and the lexicon, and (ii) inflectional heads must appear quite low within the VP. The nature of syntax interacts with these morphological arguments in the following way. If inflectional heads are postulated within the VP, it can be expected that inflectional SPECS appear there as well. I have argued that there is a derived position within the VP that, again, adds further support for my view of phrase structure.

In this chapter, I back up these claims by returning to Malagasy and Tagalog. I examine a particular problem in the characterization of event types and I show that, as with the central issue of this book, there is a semantic angle, a morphological angle, and a syntactic angle. The semantic problem involves the status of Achievements within a theory of event structure. The syntactic

[1] Half of the contents of this chapter was presented at the third meeting of the Austronesian Formal Linguistics Association (AFLA) at UCLA in 1996 and the other half at the eighth meeting of the AFLA at MIT in 2001. Parts were published as Travis (2002, 2005b).

L. deMena Travis, *Inner Aspect*, Studies in Natural Language and Linguistic Theory 80, DOI 10.1007/978-90-481-8550-4_7,

problem is the appearance of an unexpected external argument with telic inchoatives in Malagasy. Finally, the morphological problem is the disappearance of certain morphemes in Tagalog verb forms that we first encountered in Chapter 6. While these issues may seem unrelated, I argue that they provide intersecting evidence for the claim that event structure is mirrored in phrase structure. In the course of the discussion I make the following claims:

(i) Achievements form a linguistically relevant verb class.
(ii) The phrase structure of Achievements, like that of States, is formed without a process V_1.
(iii) Unlike States, Achievements contain a [+telic] ASP head.
(iv) [+telic] ASP may assign a theta-role to its Spec position.
(v) The morpheme responsible for theta-assignment may be covert to conform to a doubly filled projection restriction.[2]
(vi) Morpheme deletion in Tagalog provides insight into an oddity in the morphological paradigm of cognition verbs.

7.2 The Semantic Problem

Achievements occupy an unstable position within the aspectual verb classes. In Chapter 4, I argued that each aspectual verb class is represented by a different phrase structure. In arguing for this, however, I have basically stipulated that Achievements are like Accomplishments (they are certainly both telic), but with a different sort of V_1. In this chapter, I address the problem of Achievements more directly.

7.2.1 Achievements as a Class

We have seen in Verkuyl's table that Achievements are characterized as being [+definite], [−process] (Verkuyl 1989: 44).

(1)

	−PROCESS	+PROCESS
−DEFINITE	State	Activity
+DEFINITE	Achievement	Accomplishment

In this typology, Achievements form a natural class with States, and a test that has been used to show this partitioning is the formation of the progressive in English. Both Activities and Accomplishments may appear in the progressive, while neither States nor Achievements can.[3]

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[2] The restriction on simultaneously filling a specifier and a head position was discussed in Section 6.4.2.

[3] As I have said earlier, this test should just be a rule of thumb since there are some troubling counterexamples.

(2) a. I am pushing the cart. ACTIVITY
b. I am writing a novel. ACCOMPLISHMENT
c. * I am knowing the answer. STATE
d. * I am recognizing her face. ACHIEVEMENT

In the context of the disagreement concerning the status of Achievements outlined in the following sections, it will be important to keep in mind Vendler's (1967) conclusion that Achievements share certain properties with States. Dowty's (1979) characterization, repeated from Chapter 4, closely follows Vendler's system.

(3) STATES: V (. . .)
ACTIVITIES: DO (. . . V (. . .))
ACCOMPLISHMENTS: DO (. . . V (. . .)) CAUSE BECOME (V (. . .))
ACHIEVEMENTS: BECOME (V (. . .))

Note further that, in this system, every Accomplishment contains an Achievement. Keeping these two characteristics in mind—that Achievements have something in common with States and that every Accomplishment contains an Achievement—we turn to some of the problems raised by Achievements.

7.2.2 Achievements Not Linguistically Relevant

Some semanticists believe that the class of Achievements, while perhaps ontologically relevant, is not linguistically relevant but is merely a subset of Accomplishments.[4] I shall discuss two directions that this disagreement has taken. What is interesting for my purposes is that, while all of the researchers involved combine Achievements with Accomplishments, each chooses a different characteristic to explain the apparent distinction from the other types of Accomplishments. I will claim that these two different characteristics are not unrelated and that they can be captured in a phrase structure account of event structure.

Pustejovsky (1991) proposes to characterize Accomplishments and Achievements as two examples of transitions. As his own words indicate, he believes

[4] Ryle (1949: 49), however, writes "the verbs of gettings and keepings are active verbs . . . and this grammatical fact has tended to make people, with the exception of Aristotle, oblivious to the differences of logical behavior between verbs of this class and other verbs of activity or process." While many of the verbs that he discusses, such as *find, discover, win,* and *solve*, are what Vendler would also classify as Achievement verbs, Ryle opposes them to task (process/activity) verbs more than to Accomplishment predicates.

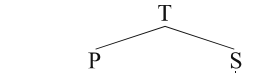
that a difference in agentivity has given the false impression that these two verb types should be classed as different event types (1991: 59).

> . . . we will argue that there is no further distinction necessary in terms of event structure for classifying these two aspectual types [Accomplishment and Achievement]. Rather, achievements and accomplishments can be distinguished solely in terms of an agentive/non-agentive distinction.

As we have already seen in Chapter 4, the event structure of these two verb classes (shown in bold below) is the same. In both cases, it is represented by a Transition (T) from a Process (P) to a State (S).

(4) a. The door closed.

b. ES:



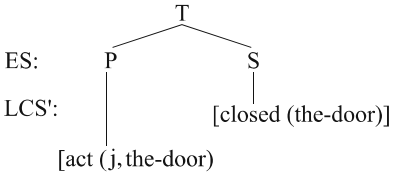
LCS': [closed (the-door)]

[¬ closed (the-door)]

LCS: become ([closed(the-door)]

(5) a. John closed the door.

b.



Where the difference becomes apparent is at the levels of LCS′ and LCS because the agentivity of the external argument is expressed at these levels.

Verkuyl (1993), like Pustejovsky, collapses Achievement and Accomplishment, calling them both events (as distinct from Processes and States), but he sees the key semantic difference between these two classes as stemming from a problem of durativity. He concludes that since the length of time that it takes to complete an act can be manipulated by manipulating the world surrounding the act (typing a letter on a computer by pushing a button to print it vs. typing a letter on a typewriter), "the length of the event does not seem to be a linguistic matter" (Verkuyl 1993: 49).

> Given these considerations, there appear to be no grounds for distinguishing Achievement terms from Accomplishment terms. I would also like to conclude that Vendler's quadripartition is perhaps relevant for philosophical (ontological) purposes, but not for the study of structural meaning involved in aspectual composition.

Pustejovsky and Verkuyl raise one question about the status of Achievements: is this a linguistically relevant predicate class? I would like to raise a further question concerning Achievements: do the verbs that have been argued to be in this class form a linguistically relevant natural class?

To start to answer this question, one has to have an idea of what sorts of predicates have been assigned to the class of Achievements. A sample is given in (6):[5]

(6)	**Achievement verbs**
Vendler:	*recognize, reach, spot, win, realize, identify, lose, find, cross, start, stop, resume, be born, die, catch* (Vendler 1967: 107)
Dowty:	(LOCATIVE) *reach, leave, touch, arrive at, land on, depart from, fall from,* (CHANGE OF PHYSICAL STATE – ABSOLUTE STATE) *melt, freeze, die, be born, molt, ignite, explode, collapse, turn into, turn to, become,* (CHANGE OF PHYSICAL STATE – DEGREE STATE) *darken, warm, cool, sink, improve, become ADJ-er,* (ASPECTUAL COMPLEMENT VERBS) *begin, start, cease, stop, resume, end,* (POSSESSIVE) *acquire, receive, get, lose,* (COGNITIVE) *notice, spot, see, catch sight of, hear, taste, smell, feel, lose sight of, realize, recognize, understand, detect, find, remember, forget,* (CHANGE OF STATE OF CONSCIOUSNESS) *awaken, fall asleep* (Dowty 1979: 68)
Verkuyl:	*win, recognize, reach* (Verkuyl 1989)
Pustejovsky:	*die, find, arrive* (Pustejovsky 1991: 52)
Smith:	*break, reach, recognize, find, hit, lose, miss, explode, knock* (Smith 1991: 58–62, 158)

The group of verbs that I will be concentrating on in this chapter includes two types listed above and excludes one other.[6] I agree with Verkuyl in recognizing that Accomplishments may represent a variety of interval lengths. For this reason, I assume that a predicate that is considered an Achievement solely because it is temporally brief (like typing the letter "p") is really an

[5] I have listed verbs alone in (6) though it is recognized that the choice of complement can affect class membership.

[6] Thanks to Dave Lebeaux for raising the question of whether Achievements form a natural class and to an anonymous reviewer for making me rethink the class's membership. The two types that I include are nonagentive transitive Achievements like *find* and unaccusatives like *die*. The type I exclude are punctual Accomplishments like *type a letter* (as in push a key on a computer).

Accomplishment. These may have slightly different flavors of V_1, but they will all be dynamic. Also, as I will argue, some Achievements are more coercible than others, again making membership less clear.

I start with what I consider the clearest case of Achievements. Examples from this class are verbs like *find*, *discover*, *notice*, and *remember*.[7] As Pustejovsky claims, they are not agentive. And as Verkuyl claims, they are not durative. One might want to characterize them as a change of state like the unaccusative verbs and give them a Lexical Conceptual Structure (LCS) similar to the Dowty-like semantic analysis of BECOME (V), but this raises the additional question of how the external argument receives a theta-role. That question will be one of the concerns of this chapter.

7.2.3 Achievements in Nontelic Languages

Before turning to the morphological and syntactic problems of Tagalog and Malagasy, I want to pursue the question of the status of Achievements by looking at a variety of languages. It is particularly instructive to investigate Achievements in nontelic languages of the type discussed at the end of Chapter 4. Recall that these are languages in which telicity is entailed only where it is overtly expressed with a morpheme or resultative phrase. In these languages, Accomplishments that are stripped of these telic markers are ambiguous between Accomplishments and Activities. In Dowty's terms, once the BECOME has been stripped from the verb, all that is left is the DO.[8] Returning to Dowty's characterization of Achievements, their meaning consists solely of the idiosyncratic information of the verb plus telicity (in the form of BECOME). As there is no DO component to Achievements, in languages in which telicity is encoded by something extra, it is hard to imagine that a bare Achievement verb could exist. There would be no process left to express. In other words, if an Accomplishment stripped of an endpoint is an Activity, what is an Achievement stripped of an endpoint? As we will see below, languages that are basically nontelic handle Achievements in a variety of ways.

Russian, Bulgarian, and other Slavic languages must overtly express telicity in the formation of Accomplishments (see Slabakova 1997b for a description and account of these facts). Taking examples from Bulgarian, Slabakova shows that a bare form of the verb expresses imperfective aspect (7a). In order to express an Accomplishment, that is, an event with a natural endpoint, a preverb

[7] These are good examples of Ryle's (1949: 151) "purely lucky achievements."

[8] CAUSE is not possible without BECOME. One way of thinking of it is that DO is what CAUSE becomes when there is no embedded change of state. This flavor is evident in both Dell's (1983) discussion of Accomplishments (where maneuver is highlighted) versus Achievements (where result is highlighted) or in Ryle's (1949) terminology, where the action belongs to the player in an Activity but to the referee in an Achievement. See the discussion in Section 7.3.5 of this chapter.

must be added. Sometimes, as in (7b), these preverbs simply encode the existence of the endpoint; at other times, as in (7c) the preverb may, in fact, change the meaning of the verb.

(7) Bulgarian (Slabakova 2001: 82–83)

a. pis-a
write-3SG/AORIST
'He wrote'

b. na-pis-a
PV-write-3SG/AORIST
'He wrote up'

c. pre-pis-a
PV-write-3SG/AORIST
'He copied'

Slabakova, following Brecht (1984), argues that the morphological form of the verb overtly marks the aspectual verb class of the predicate. More precisely, the absence or presence of a preverb indicates whether the predicate is atelic or telic. Slabakova proposes that only Accomplishments, in fact, have definable preverbs and she links this to the presence of the CAUSE predicate in the LCS (and, in her framework, also the phrase structure) of the predicate. As we can see by referring to Dowty's characterization of the four Vendler verb classes, only Accomplishments contain the semantic operator CAUSE. Both Brecht and Slabakova show that an Activity may become an Accomplishment[9] through the addition of a preverb.[10]

(8) Toj na-pis-a pisma *3 casa/√za 3 casa
he PV-write-3SS/AORIST letters *for three hours/√in three hours
'He wrote up letters for/in three hours.'

Further, in order to be an Accomplishment, the verb form must contain a preverb, as the Russian examples below, taken from Brecht, show (Brecht 1984: 12).

(9) Russian Accomplishments
vy-polnit 'fulfill'
do-kazat 'prove'

[9] Brecht, in fact, argues that an Activity becomes an Achievement, in other words, it loses the process part of its reading. I will argue that this is also true of Tagalog and Malagasy.

[10] What is interesting to Slabakova about this example is that the [−SQA] object has no effect on the event class of the verb. The preverb marking the event as telic overrides the lack of cardinality of the object.

What is interesting for our purposes is the morphological nature of Achievements. Achievements in Russian, unlike the Accomplishment/Activity distinction shown above, are telic in their bare form. In order to encode imperfectivity on these forms, additional morphology must be added. As Brecht points out, with Accomplishments/Activities, the lack of morphology indicates imperfectivity, whereas with the Achievement class of verbs, a morpheme must be added. In Slavic languages, then, Achievements are a linguistically relevant class since these are the verb forms which have a telic interpretation in their bare form.[11]

As we saw in Chapter 4, Japanese, as described by Uesaka (1996), presents a slightly different picture. Still, as in the two Slavic languages described above, Uesaka's view of Japanese suggests that Achievements must be held to be a separate linguistically relevant class. In her discussion of the *te-iru* construction, she shows that the four traditional Vendler verb classes react differently. The *te-iru* form of the verb gives a different interpretation depending on the verb class to which it belongs. A summary of her findings is given below.

(10)

	Perfect of result	"Progressive"[12]
States	*	*
Activities	*	√
Accomplishments	√	√
Achievements	√	*

One of Uesaka's conclusions is that, as in Russian, the basic verb forms in Japanese are not telic. Unlike the Slavic languages, though, Uesaka argues that there is an empty element in Japanese that may be added to verbs to make them telic, giving the appearance of an ambiguous nature. Once a predicate is telic, the perfect of result reading is obtained. Otherwise, one gets the "progressive" reading. Activities cannot add this null morpheme (though they may add overt elements that express a result), and Accomplishments may. This accounts for the fact that Accomplishments can get both the perfect of result and the "progressive" reading. Finally, Achievements *must* add this element.

(11)

	Perfect of result	"Progressive"	Null telic morpheme
States	*	*	N/A
Activities	*	√	impossible
Accomplishments	√	√	possible
Achievements	√	*	obligatory

[11] Slabakova writes that Bulgarian has 50 verb forms that are perfective without the addition of preverbs. Not surprisingly, they are all Achievements. Nossalik (2009) argues that Russian Achievements are always bimorphemic though some of them contain morphemes that never appear independently.

[12] I am using quotation marks because the use of this form is not identical to the use of the English progressive.

Once again, then, we find a language where Achievements are special in that some specific form must be used to express result. While in Russian and Bulgarian these forms are overtly different from other forms of the verb, in Japanese the form is identical on the surface. It can be distinguished from other verb classes, however, by more subtle means.

My conclusion from this discussion of Achievements in a variety of languages is that they do form a linguistically relevant class. In the rest of this chapter, I will explore the syntactic nature of this class in an effort to determine its phrase structure. Two questions that are subsumed here involve the characteristics mentioned by Pustejovsky and Verkuyl. How are the lack of durativity and the lack of volitionality represented? Part of the second question contains the further question, how is the external theta-role of the transitive Achievement assigned? To shed light on these issues, I turn to two problems from Tagalog and Malagasy. I will begin with a morphological puzzle from Tagalog, then outline a syntactic puzzle in Malagasy. Keeping both problems in mind, I will then propose a syntax for Achievements and suggest that this syntax solves not only the semantic questions concerning Achievements but also the problems of Tagalog morphology and Malagasy syntax. Furthermore, once the account of morpheme deletion in Tagalog is set up, we can use it to probe the argument structure of cognition verbs, a notoriously problematic class.

7.2.4 Achievements in Malagasy

As we know from Section 4.5.3, Malagasy is similar to Russian in that the most commonly used form of the verb need not be telic, but unlike Russian in that, in the absence of any additional information, it is interpreted as telic. For example, under normal conditions, upon hearing (12a) the assumption would be that the dog was caught. As (12b) shows, however, this assumption can be overridden (from Phillips 2000: 22).

(12) a. nisambotra ny alika ny zaza
PST.*I*.captive DET dog DET child
'The child caught the dog.'

b. . . . nefa faingana loatra ilay alika
but quick too that dog
'. . . but the dog was too quick.'

As in Russian, telicity is ensured by choosing a specific form of the verb. Generally this involves special morphology, as the example below shows for the active form of the verb, where the morpheme *aha-* is added (this will appear as *maha-* in the present and *naha-* in the past).[13]

(13) a. Nahasambotra ny alika ny zaza
PST.*A*.*HA*.captive DET dog DET child
'The child caught the dog.'

b. *. . . nefa faingana loatra ilay alika
'. . . but the dog was too quick.'

[13] The *aha* morpheme complex replaces the *an*/*i* morpheme complex.

Given this structure, it is interesting to see how Achievements are realized. Phillips (1996) notes, following Rabenilaina (1985), that the prefix *aha-* can change the meaning of the verb in important ways. Some pairs of predicates appear below, the first column without *aha-*, the second column with *aha-* (Phillips 1996: 37).[14]

(14)	a.	*mijery*	'to look at'	*mahajery*	'to notice'	√JERY
	b.	*mandinika*	'to examine'	*mahadinika*	'to remark'	√DINIKA

The form of the verb containing the normal active prefix (either *i-* or *an-*) describes an Activity, while the *aha-* prefixed form describes a related Achievement. Both qualities mentioned by Pustejovsky and Verkuyl are present: there is no durativity or agentivity in the *aha-* forms. Rabenilaina (1985) also gives a list of verbs which appear only in the *aha-* form, and all are arguably Achievement verbs.[15]

(15) Verbs that must take *aha-* (Rabenilaina 1985: 372)

mahazo	'to understand, to seize'	
mahalala	'to know'	
mahatsiahy	'to feel, to remember'	
mahatsikaritra	'to remark'	
mahatsiaro	'to perceive'	
mahahay	'to know'	(>*mahay*)
mahahita	'to see'	(>*mahita*)

Another realization of Achievement predicates is as a bare root. As we have already seen in Malagasy, most verbs are formed by adding either active (Actor Topic) or passive (Theme Topic) morphology to a root.[16] Some verbs, however, can appear in their root form, which realizes its arguments in the same manner as a passive, that is, the Theme appears in the subject position and the Agent is within the VP. When verbs appear in their root form, there are two effects: (i) the agent is no longer agentive and (ii) the action is no longer durative. I will exemplify each of these properties in turn below.

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[14] These pairs are similar to some given in Nossalik (2009) for Russian: ***za****metit'*-PERF 'noticed' / *metit'*-IMPF 'to mark'.

[15] It is often hard to distinguish States from Achievements and this problem becomes clear in this list. The translations of a verb form like *hazo* 'to understand, to seize' show both sides of the meaning. This is also evident in Japanese, where many statives are created by adding *te-i-ru* to an Achievement to get a perfect of result reading*: waka-te-i-ru* 'understand'. See Uesaka (1996: 36–37, and footnote 27). We will shortly see this again in the case of root passives.

[16] Recall that there is also a third type of form, the Circumstantial Topic form, but it is not relevant here.

In his grammar, Rajemisa-Raolison (1971) gives minimal pairs where the same verb form has both a standard passive form[17] created through suffixation on the verb and a root passive form. Unfortunately, in some cases the difference between the forms is not striking since the morphology for genitive case marking on the Agent within the VP (what Keenan 2000 calls N-bonding) masks the lack of passive morphology. We can see the similarity in forms in (16). However, the stress placement can distinguish between the two: the passive morphology displaces stress one syllable to the right. In (16a), the root form, the natural use of the nonagentive agent is clear through the presence of 'the wind' as the agent. In the case where there is a volitional agent, the suffixed passive form is most naturally used, as in (16b) (based on examples from Rajemisa-Raolison 1971: 95).[18]

(16) ROOT PASSIVE

a. Símban'ny rivotra ny voninkazontsika
ruin.GEN'DET wind DET flowers.GEN1PL(INCL)
'Our flowers were ruined by the wind.' (nondeliberate)

SUFFIX PASSIVE

b. Simbán'ny zanakao ny kilalaonay
ruin.TT.GEN'DET child.GEN2S DET toys.GEN1PL(EXCL)
'Our toys were ruined by your child.' (deliberate)

The example in (17) shows the same effect but with a clearer distinction between the two verb forms (*sitrana* vs. *sitranina*). The difference in meaning is subtle, but in (17b) the doctor is highlighted as a volitional agent (based on examples from Rajemisa-Raolison 1971: 95).

(17) ROOT PASSIVE

a. Sitran'ny fanafody ny ankizy
cure.GEN'DET medicine DET children
'The children were cured by the medicine.'

SUFFIX PASSIVE

b. Sitranin'ny doktera ny ankizy
cure.TT-GEN'DET doctor DET children
'The children were cured by the doctor.'

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[17] More accurately, this is one of the Theme Topic forms. In much of the literature, however, these are referred to as passive forms since the Theme is now in a predicate-external position. In this discussion, I will use the term "passive" in the text, but to be consistent with the glosses elsewhere in the book, I will gloss the appropriate morpheme as Theme Topic (TT).

[18] The issue of the four different passives—the suffixed passive, the *VOA*-passive, the *TAFA*-passive, and the root passive—is an intricate one. I address it in more detail in Travis (2005c, d).

In example (18), the distinction between telic and nontelic is highlighted. The presence of the suffixed passive is also clear in this case since the form of the verb changes (*vita* vs. *vitaina*). In (18a), where the root passive is used, the resultant state of the action is not defeasible. Where the suffixed form of the verb is used in (18b), the result is not an entailed outcome.

(18) ROOT PASSIVE

a. Vitan'ny ankizy ny asa a′. *... nefa mbola tsy vita foana
finish.GEN'DET children DET work... but still not finished yet
'The children finished the work.'

SUFFIX PASSIVE

b. Vitain'ny ankizy ny asa b′... nefa mbola tsy vita foana
finish.TT.GEN'DET children DET work
'The children finished the work.'

These forms can be contrasted with the passive form of the Malagasy example we have already seen. As expected, as a suffixed passive form, it is atelic.

(19) a. Nosamborin'ny zaza ny alika b. ... nefa faingana loatra ilay alika
PST.captive.GEN'DET child DET dog '... but the dog was too quick.'
'The dog was caught by the child.'

Since the root forms denote actions that are not durative[19] and are nonvolitional, it is not surprising that some Achievements are most naturally expressed by roots.

(20) a. *hita* 'see'[20]
Hitako ny ankizy
see.GEN1S DET children
'I see the children.'

b. *re* 'hear'
Reko ny ankizy
hear.GEN1S DET children
'I hear the children.'

c. *azo* 'understand'
Azoko ny ankizy
understand.GEN1S DET children
'I understand the children.'

[19] Rajaona (1972) calls these durative results but it is the result that is durative, not any activity leading up to the result.

[20] See Vendler (1967: 113) for a discussion of *see* as an Achievement.

Malagasy, then, which does not encode telicity in the most common forms of verbs, uses special forms to express Achievements. These forms are of two types: *aha-* forms and root forms.[21]

In order to discuss the syntactic problem in Malagasy, we have to return to our discussion of telicity in that language. We have already seen two ways to mark a verb as [+telic]. One is to add *aha-* to the root, which results in an active [+telic] predicate. Another way is to use a bare root, which results in a passive [+telic] predicate. Two other forms of resultatives (which is probably the best way to refer to these, see Schachter 1996) are the *voa-* passive and the *tafa-*passive.[22] The example of the *voa-* passive in (21) would correlate with the structure given in (19).

(21) *VOA* PASSIVE

voasambotry	ny	zaza	ny	alika	b.	* . . .. nefa faingana loatra ilay alika
VOA.captive.GEN	DET	child	DET	dog		'. . . but the dog was too quick.'

'The dog was caught by the child.'

Since the distribution of the two different forms, *voa-* and *tafa-*, falls along the same lines as the transitivity alternation in Malagasy, before turning to *tafa-* and *voa-*, I will review the facts of this alternation (see Chapter 6 for a longer discussion).

As we saw in Chapter 6, in the active form of Malagasy verbs, roots often come in pairs—an inchoative with an *i-* prefix and a lexical causative with an *an-* prefix. One example of this is the root $\sqrt{vory}$, which appears either as *mivory* 'to meet$_{\text{INTRANS}}$' or *mamory* 'to gather$_{\text{TRANS}}$'.

(22) Transitivity alternation in Malagasy

$\sqrt{}$vory 'meet'

m-an-vory	*mamory*	'X gathers Y'
m-i-vory	*mivory*	'Y meets'

As we can see in (23) and (24), both the inchoative and the lexical causative forms of these verbs can be interpreted as nontelic.[23]

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[21] We will return below to two other forms (*voa-* and *tafa-*), which I will argue also express Achievements, although in these two cases the Achievement nature is less clear.

[22] Rajemisa-Raolison (1971) refers to both of these as passive though, as will become clear below, the *tafa-* form is less clearly a passive.

[23] My consultant found (24b) odd but much better than the resultative form with *tafa-* given in (28).

(23) a. namory ny ankizy ny mpampianatra
PST.*AN*.meet DET children DET teacher
'The teacher gathered the children together.'

b. . . . nefa tsy nanana fotoana izy
. . . but NEG PST.have time 3P
'. . . but s/he didn't have time.'

(24) a. Nivory ny olona b. ?. . .. nefa tsy nanana fotoana izy
PST.*I*.meet DET people ' . . .. but they didn't have time.'
'The people met.'

The lexical causative of this form, naturally, has a suffixed passive form that, like the examples we have already seen, may also be atelic. This is shown in (25).

(25) a. Novorin'ny mpampianatra ny ankizy
PST.meet.TT.GEN'DET teacher DET children
'The children were gathered by the teacher.'

b. . . .. nefa tsy nanana fotoana izy
'. . . but s/he didn't have time.'

One way to ensure that the transitive form of the verb is telic is by adding *aha-,* as we have seen in Section 7.2.4.

(26) a. nahavory ny ankizy ny mpampianatra
PST.*A*.*HA*.meet DET children DET teacher
'The teacher gathered the children.'

b. *. . .. nefa tsy nanana fotoana izy
' . . .. but s/he didn't have time.'

We can also make the passive form of the verb telic by adding the prefix *voa-*.

(27) a. voavorin'ny mpampianatra ny ankizy
VOA.meet.GEN'DET teacher DET children
'The children were gathered by the teacher.'

b. * . . . nefa tsy nanana fotoana izy.
' . . . but s/he didn't have time.'

As we can see, in both cases, the completion of the event is not defeasible. Further, the inchoative form of the verb can also have its telicity forced with additional morphology, in this case the prefix *tafa-*.

(28) a. tafavory ny olona
TAFA.meet DET people
'The people met.'

b. * . . .. nefa tsy nanana fotoana izy.
' . . .. but they didn't have time.'

This contrasts with (24b) above: (28b) is clearly impossible while (24b) is simply awkward.

The effect of this morpheme inventory, then, is that, just as the prefixes *i-* and *an-* distinguish between the lexical causative and inchoative forms of the verb, the prefixes *voa-* and *tafa-* appear to do the same.

(29) a. *voavory* 'X be gathered by Y' [+telic]

b. *tafavory* 'X meet' [+telic]

voa- = [+telic] passive of transitive form
tafa- = [+telic] of inchoative/unaccusative form

	LEXICAL CAUSATIVE	INCHOATIVE
+TELIC	an-	i-
	m-an-vory (*mamory*)	m-i-vory (*mivory*)
−TELIC	voa-	tafa-
	voa-vory (*voavory*)	tafa-vory (*tafavory*)

There are some obvious ways in which the *i-*/*an-* forms differ from the *tafa-*/*voa-* forms. The difference that is important to our discussion so far is that *i-*/*an-* are atelic while *tafa-*/*voa-* are telic. Another way the paradigms differ is that, in the *i-*/*an* pattern, one form of the verb has two arguments, with the Agent in subject position, while the other has one argument, the Theme, which is in subject position. In the *tafa-*/*voa-* paradigm, while the argument structure appears to mirror the *i-*/*an* argument structure, in both cases the Theme is external. We will see shortly, however, that a change in telicity effects a change in argument structure.

7.3 The Shape of Achievements

Now I will investigate the structure of Achievements by looking closely at the argument structure, how the arguments are realized, and what the lexical subparts of the event actually encode. Malagasy and Tagalog together provide information on the argument structure, event structure, and phrase structure of

Achievements through the behavior of the morphology and the interpretation of the constructions.

7.3.1 The External Argument

With further data, we see another unexpected effect of telicity. I have said that the argument structure appears not to be affected by the shift in telicity, but in fact, this is not the case. It is clear in the example given below that the *i-* form of the verb is truly the inchoative form and has only one theta-role to assign. Example (30a) shows that only one argument may appear with the verb, while (30b) shows that no manipulation of the word order or morphology can improve the structure.

(30) a. * Nivory ny ankizy ny mpampianatra.
PST.*I*.meet DET children DET teacher

b. * Nivorin'ny mpampianatra ny ankizy.

Example (31) shows, however, that an additional argument can be added to the telic form of the verb, that is, the *TAFA* form.[24]

(31) Tafavory ny mpampianatra ny ankizy
TAFA.meet.GEN DET teacher DET children
'The teacher was able to gather the children.'

The questions we are left with here are: (i) Why can an inchoative verb, which normally has only one theta-role to assign, realize two arguments? And (ii) why is this only possible in the telic form?

To find a solution, I will briefly examine a problem in Chinese and a solution proposed by Chen (1995). Chen discusses constructions such as the ones given below where the Agent and Theme of a verb are unexpectedly flipped in the syntax.

(32) a. Fangfang he le jiu
Fangfang drink ASP wine
'Fangfang drank the wine.'

b. Fangfang he-zui le jiu
Fangfang drink-drunk ASP wine
'Fangfang drank the wine and got drunk.'

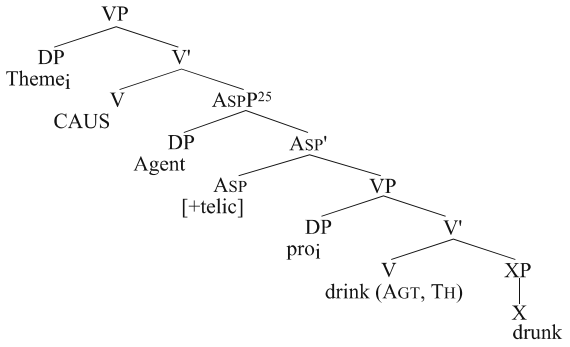
[24] The translation includes the notion of ability. I argue elsewhere, using ideas proposed by Bhatt (1999), that the ability reading is parasitic on the Achievement reading (see Travis 2005c, d).

c. Zhe bei jiu he-zui le Fangfang
This CL wine drink-drunk ASP Fangfang
'This glass of wine made Fangfang drink (it) and she got drunk.'

As we can see in (32a), Chinese is (basically) an SVO language. It is also, as we saw at the end of Section 4.5.2, a nontelic language (e.g., Tai 1984). It has, however, a very rich system whereby results may be expressed either through separate predicates or by predicate incorporation, as in (32b). When telicity is overtly expressed (or a bounded time defined), the object and the subject may appear to flip positions, as in (32c). The flip construction has been the focus of much research and different accounts have been suggested. Li (1995) proposes an account at the level of argument structure. We have seen Sybesma's (1992) account in Chapter 2, where the predicate *he* 'drink' behaves like a manner adjunct (similar to 'The wine caused Fangfang to be drunk via a drinking event'). Chen's account retains *he* 'drink' as the main predicate. I find Sybesma's account of the Chinese data most convincing, but parts of Chen's account work well for Malagasy and Tagalog, where there is only one predicate. For this reason, I will present Chen's account in more detail.

To explain the argument flip that we have seen in (32c) above, Chen proposes the following structure.[25]

(33)



I will walk through the tree from the bottom to the top, discussing primarily the distribution of theta-roles since this is most relevant to the issue at hand. The verb is generated with its theta-grid of (Agent, Theme). The Theme theta-role is assigned to the Spec of the lower VP (V_2P). The ASP head is determined to be [+telic] because of the resultative predicate *drunk*. What Chen proposes is that a [+telic] predicate is able to trigger early theta-role discharge of the Agent theta-role in the theta-grid of the verb. It is this early theta-discharge that accounts for at least half of the flip since now the Agent will be in the typical object position. What allows the Theme to be in the typical subject position is

[25] Chen actually calls this node EP. I prefer to keep it as ASP to be consistent with the other trees in this book.

the CAUSE predicate in the top VP coupled with the anaphoric pro in the Theme position of the lower VP.[26] I refer the reader to Chen's paper for details on these two questions. For my purposes, it is important to note that (i) an external theta-role may be discharged to the Spec, ASP position; (ii) this theta-role assignment is dependent on the telicity value of ASP; and (iii) an Agent in this position is nonvolitional. On this latter point, Chen suggests that the Agent theta-role, which is assigned independently of the CAUSE predicate, results in a nonvolitional Agent.

These characteristics point to a solution for the unexpected argument realization in Malagasy. The problem in Malagasy was that inchoative verbs were unexpectedly assigning external arguments when the telic morpheme was added. Furthermore, these external arguments took on a semantic role different from the role of the external argument of the transitive form of the same verb. Following Chen, then, I propose the following solution: *tafa-* in ASP, as a telic morpheme, may allow a verb to license an external argument, which is not possible when the nontelic form of the verb is used.

Further evidence supporting this account comes from the characteristics of the prefix *aha-*. If we are claiming that the [+telic] ASP realized as *tafa-* is allowed to discharge a theta-role in the Spec, ASP, we can ask whether all [+telic] morphemes in Malagasy are allowed to do the same thing. Given the observations of Phillips (1996), the answer appears to be yes. In order to see this, we have to understand the range of meanings of the prefix *aha-*. We have already seen that this prefix makes the predicate telic and that it creates Achievements. The two meanings of this morpheme that are generally listed in grammars and dictionaries are the abilitative and the causative.

(34) ABILITATIVE

Nahaongotra	ravina	tamin'ny	tanana	Rabe
PST.*A.HA*.pull.out	root	PST.with'DET	hands	Rabe

'Rabe was able to pull out the roots with his hands.'

(35) CAUSATIVE

a. Tsara ny trano
beautiful DET house
'The house is beautiful.'

b. Mahatsara ny trano ny voninkazo
PRES.*A.HA*.beautiful DET house DET flowers
'The flowers make the house beautiful.'

[26] For Chen's account to work, we need both the theta-grid information for the predicate and the event structure information for the predicate. If she is right, there is not necessarily a one-to-one correspondence between the two. I will remain agnostic on her account here since all I need at this point is the proposal that a [+telic] ASP can trigger early theta-role discharge.

Phillips convincingly argues that, in fact, there is one *aha-* that has a different effect depending on the nature of the root to which it attaches. To be more precise, there are two morphemes, *a-* and *ha-*. *A-* is the stative prefix mentioned earlier, which attaches to roots to create adjectives. Below we see some examples of this (from Abinal and Malzac 1988).

(36) Malagasy

dio	cleanliness	*m-a-dio*	clean
loto	dirt	*m-a-loto*	dirty
zava	light, clarity	*m-a-zava*	clear
zoto	diligence	*m-a-zoto*	diligent

This morpheme is located in V_1 and completes the paradigm with the lexical causative *an-* and the unaccusative *i-*. *A-* introduces a stative event variable s, *i-* introduces the event variable e, *an-* introduces the event variable e as well as some process predicate like DO that allows for an external argument.

In fact, all three of these verbal prefixes can be attached to a stem containing the root and the prefix *ha-* (which becomes *ka-* following the nasal). We have already seen the cases of *m-a-ha-*$\sqrt{}$ in (34) and (35b) above, and examples of *m-an-ha* and *m-i-ha* are given in (37) and (38) below.

(37) *manka* 'Y make X A' (m-an-ha-$\sqrt{}$)

hery	strong_A	*mankahery*	Y make X strong
mamy	sweet_A	*mankamamy*	Y make X sweet
rary	pain_N	*mankarary*	Y make X sick

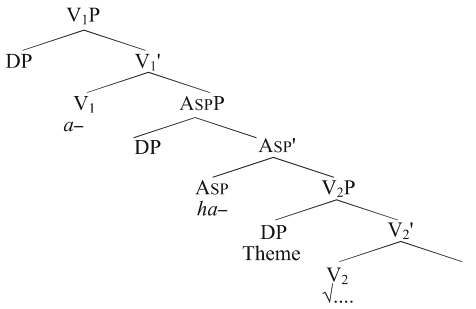
(38) *miha* 'X become A' (m-i-ha-$\sqrt{}$)

tsara	good	*mihatsara*	X get better
ratsy	bad	*miharatsy*	X get worse

Ha- is the morpheme that encodes the telicity of the event and it is located in ASP.[27] This gives the following common structure for the abilitative and causative.

[27] Phillips (1996, 2000) labels the functional projection within the VP Pred rather than ASP.

(39)



The Theme theta-role will be assigned within the projection of the root.[28] Departing now from Phillips' analysis, I take the telicity of ASP to be what allows an additional theta-role to be assigned, and this theta-role will be assigned to the Spec, ASP position.[29] I follow Phillips, however, in relating the meaning of the affixes to a functor predicate, as in Ritter and Rosen (1993), where *have* may assign an additional theta-role but the exact theta-role is not specified. For Ritter and Rosen, this lack of specification accounts for why we can get ambiguities between an Agent reading or an Experiencer reading of *Mary* in the example below.

(40) Mary had all her students walk out.

a. AGENT She asked them all to walk out.

b. EXPERIENCER They all walked out on her.

In Malagasy, again, the exact theta-role is not specified, but in this case it follows from the nature of the root. If the root is an eventive root (and Phillips supplies independent tests to distinguish this), we will get the abilitative reading. If the root is noneventive, we will get the causative reading. This split in interpretation follows from Grimshaw's (1990) claim that eventive elements (in her case, nouns) have argument structure and noneventive elements do not. Returning to the tree in (39), we can see that only the Theme theta-role has been assigned by the time that the [+telic] ASP has been reached. If the root has a theta-grid, and that theta-grid has an Agent theta-role to be assigned, as in Chinese, that theta-role will be discharged in the Spec, ASP. If the root is noneventive, then the theta-role to be discharged will be a default Cause, as in Ritter and Rosen.[30]

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[28] I have shown the root to be a verb but in fact it is more often an A or N.

[29] In previous work, I have mistakenly presented my analysis as being the same as Phillips'. In fact, Phillips keeps the external argument in Spec, VP. I believe there are reasons based on morpheme deletion in Tagalog and tense realization in Malagasy to posit that the external argument is in a lower position. I present both of these arguments below.

[30] It is not clear why Experiencer is not an option here.

Phillips argues, in fact, that the prefix *aha-* has not two meanings but one. There appear to be two interpretations but it is because each gets translated by what is the most salient change in the predicate. Imagine that the meaning of a morpheme is x + y. If this morpheme attaches to a root that already contains the meaning x, then the meaning of the affix appears to be y. If the root already has the meaning of y, the affix appears to have the meaning x.[31] In the case of an eventive predicate with an Agent theta-role in its argument structure, what is most salient is the fact that the Agent is nonagentive.[32] In the case of noneventive predicates, it is the addition of the Cause argument that is most salient. In both cases, however, a stative predicate is being formed (this is what *a-* does), and a [+telic] ASP is discharging a nonagentive Cause theta-role.

There are two interesting outcomes here. One is that the additional Cause of the noneventive predicate cannot be an Agent. This is because the role does not come from a theta-grid. The second outcome is that prefixation of *maha-* onto an unaccusative eventive root (like *tonga* 'arrive') will never give the pure abilitative reading ('able to arrive'), but will always give the causative reading ('(able to) cause to arrive'). This is because the theta-grid, even though it exists, does not provide an external argument. The relevant data for these two results are given below.

(41) a. NO AGENT

* Mahatsara ny trano Rabe[33]
PRES.*A*.*HA*.good DET house Rabe
'Rabe makes the house beautiful.'

b. NO PURE UNACCUSATIVE ABILITATIVE

(i) $\sqrt{}$*tonga* 'arrive' (Phillips 2000: 103)

(ii) *mahatonga* 'able to make arrive'
≠'able to arrive'

(iii) mahatonga ny zanakao ho hendry ny fianarana
PRES.*A*.*HA*.arrive DET child.GEN.2S FUT wise DET studies
'Studies make your child wise.'

---

[31] The assumption here is that one element in the L-syntax cannot have 2x or 2y.

[32] And this nonagentivity gives the abilitative reading (see Travis 2005c for speculation on why this is so, using ideas from Bhatt 1999). While the exact reason is not clear, it is interesting that other languages with stativizing processes often have the same effect, for example stative passives in Chichewa (Dubinsky and Simango 1996).

[33] This construction is good only if Rabe makes the house beautiful through his own beauty.

So far, we have seen three uses of the *aha-* constructions in Malagasy: to form Achievements as in (14) and (15), to form abilitatives as in (34), and to form causatives as in (35). All will have the same structure, as shown below.

(42) a. *aha-* abilitative
$[V_1P\ [V_1'$ **a-** $[_{ASPP}$ DP $[_{ASP'}$ **ha** $[V_2P$ Y $[V_2'$ $\surd$]]]]]]
"Agent" [+telic] (Agt, Th, . . .)

b. *aha-* causative
$[V_1P\ [V_1'$ **a-** $[_{ASPP}$ DP $[_{ASP'}$ **ha** $[V_2P2$ Y $[V_2'$ $\surd$]]]]]]
Cause [+telic] (Th)

c. *aha-* Achievement
$[V_1P\ [V_1'$ **a-** $[_{ASPP}$ DP $[_{ASP'}$ **ha** $[V_2P2$ Y $[V_2'$ $\surd$]]]]]]
"Agent" [+telic] (Agt, Th, . . .)

Having postulated that [+telic] ASP may assign a functor theta-role to its Spec position to solve the problem of the unexpected argument in Malagasy, we turn to the problem of morpheme drop. What I will be arguing for is the placement of the external argument in Spec, ASP rather than in Spec, V_1. The arguments will come from morpheme deletion in Tagalog and tense realization in Malagasy.

7.3.2 ka- *Deletion in Tagalog*

If it is possible for Agents to appear in Spec, ASP, we have two different positions where Agents may appear—Spec, V_1P and Spec, ASP.[34] If this is the case, we would expect these two positions to have some effects beyond simply the Agent's interpretation as being volitional or nonvolitional. In this section, I shall argue that this difference in positions is made visible in two morpheme drop phenomena.

We saw in Section 6.4.2, that *pag-* can drop in Tagalog when certain syntactic requirements are met. A second case of morpheme deletion in Tagalog occurs with the *aka-* prefix (cognate to the Malagasy *aha-* prefix

[34] A reviewer questions whether languages vary in whether [+telic] ASP realizes the Agent in Spec, ASP or whether some languages rely solely on V_1 to realize the external argument. I am assuming that all languages have to encode the possible argument arrays in the root but it is possible that only some languages have this exceptional use of ASP. It is interesting, though, that English [+telic] ASP usually does not demote the Agent to a Cause. However, we will see in Chapter 8 that some English verbs (like *tell*) show similar alternations to the ones discussed here for Malagasy and Tagalog.

discussed above). [35] As in the case of *pag-* deletion, morpheme deletion occurs in the Theme Topic form of the verb. In this case, however, *aka-* becomes *a-*: in other words, *ka-* deletes. [36]

(43) *ka-* "deletion" in Tagalog
AT: m + a + ka + gamit
TT: m + a + 0 + gamit
Schachter and Otanes (1972: 330)
√GAMIT 'use'

a. Nakagamit siya ng manggang hilaw n + a + ka + √gamit
PST.*A.KA.*√use 3NOM *NG* mango green
'He was able/happened to use a green mango.'

b. Nagamit niya ang manggang hilaw n + a + 0 + √gamit
PST.*A.*√use 3GEN NOM mango green
'He was able/happened to use a green mango.'

Again it seems as if movement of a particular argument explains the appearance of a certain morpheme. In this case, movement of the Agent to the subject position allows the *ka-* morpheme to appear, as in (43a). When the Theme has moved to the subject position and the Agent has stayed in situ, as in (43b), then *ka-* deletes. Ideally we would like these two apparently separate phenomena—*ka-* deletion and *pag-* deletion—to have a common solution. In other words, ideally we would be able to use Sportiche's (1998) Doubly Filled Voice filter, discussed in Section 6.4.2, to account for *ka-* deletion as well. This would mean that the Agent was in the specifier position of the head that houses *ka-*. I have argued that Malagasy *ha-* is in ASP. Assuming that *ka-* in Tagalog has a similar account, and we have no reason to believe otherwise, we can construct the schema for *ka-* given in (44b) and compare it to the analysis of *pag-* given in (44a).

(44) a. [V_1P Agent [V_1' **pag**] ASPP [ASP' [V_2P Y [V_2' √]]]]

b. [V_1P [V_1' **a** [ASPP Agent [ASP' **ka** [V_2P Y [V_2' √]]]]

[35] See Dell (1983) for a discussion of Neutral (N) and Ability/Involuntary Action (AIA) forms (following the terminology of Schachter and Otanes 1972). The *pag-* forms are neutral and the *aka-* forms are the AIA forms. He proposes that N constructions focus on Maneuver while AIA forms focus on Result.

[36] Note that the translation of the Tagalog structures captures two aspects of the Malagasy morpheme *aha-* discussed above: achievement of the end result and nonvolitionality of the Agent.

In both *pag-* deletion and *ka-* deletion, it is in the Theme Topic form, that is, when the Agent is in situ, that the deletion occurs. In order to collapse *pag-* deletion and *ka-* deletion, we have to assume that the external argument of a *ka-* construction is merged in the Spec, ASP position. As (44) shows, the morpheme that deletes is in a Spec, Head relationship with the in situ external argument. So, for both *ka-* deletion and *pag-* deletion we can, at least descriptively, use Sportiche's Voice Filter.

To recap, I argue that the nonvolitional Agent or Cause is generated in the Spec, ASP position in Malagasy since it is related to the appearance of the telic morpheme. This view is confirmed by Tagalog, where this telic morpheme may have a zero realization when the nonvolitional Agent or Cause appears in situ.[37]

7.3.3 Tense Realization in Malagasy

Another argument can be made that the external argument of a telic predicate in Malagasy is generated in a lower position within the VP. In order to see this, we have to return to Theme Topic telic predicates. These are the *VOA-*, *TAFA-*, and root passives. Examples of each are given below.[38]

(45) a. Voatapaka ny tady voa+√TAPAKA
VOA-cut DET cord
'The cord was cut (by someone).'

b. Tafatsangana ny ankizy tafa+√TSANGANA
TAFA-stand DET child
'The child stood up.'

c. Tapaka ny tady √TAPAKA
√cut DET cord
'The cord is cut.'

As we saw in (18), (27), and (28), these three passives differ from the fourth type of passive, the suffixed passive, in that they entail the successful outcome of the event. They have another thing in common: they all realize tense differently from other verb forms. In fact, as far as tense realization is concerned, they behave exactly like adjectives. The relevant tense forms are given in the table

[37] See Duffield to appear for a similar analysis of inadvertent cause constructions in Vietnamese.

[38] As mentioned earlier, sometimes the label of "passive" used by traditional grammarians for these structures appears misleading since the *TAFA-* passive often seems like a straight unaccusative and the root passive like an adjective. It is the ability of all of these constructions to realize external arguments (Causes) that makes them appear passive-like.

below. Suffixed passives, like other verbal forms, make a three-way tense distinction, while adjectives and *voa*-, *tafa*- and root passives only distinguish present and past from future (perhaps realis from irrealis).

(46) Tense realization in Malagasy passives

	Suffix	*Voa*	*Tafa*	Root
Present	0-	0	0	0
Past	no-	0	0	0
Future	ho-	ho	ho	ho

Elsewhere I accounted for this difference by positing that head movement in verbal forms must pass through V_1 while adjectival-type constructions (adjectives and these particle constructions) do not move as high in the phrase structure (Travis 2005c, d). It has independently been argued, using data from English, that adjectives appear lower in the tree than verbs. Comparing (47a) with (47b), we see that active participles appear higher than passive participles (data from Caponigro and Schütze 2003). The active participle cannot appear below the manner adverb, while the passive participle can.

(47) a. * They have poorly built the house.

b. The house was poorly built.

Using this type of test, we can also see a distinction between verbal passives and adjectival passives.

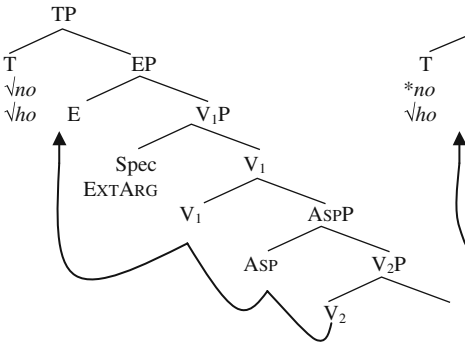
(48) a. The house was being (poorly) built (poorly).

b. The house remained (poorly) built (*poorly).

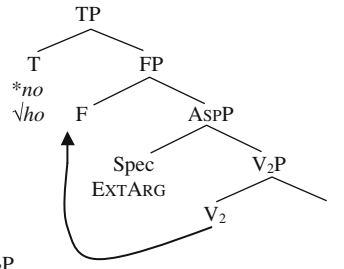
These data suggest that adjectival heads appear lower in the tree than verbal heads. Applied to the Malagasy data, I propose that tense realization depends on the landing site of the head. Past will only appear on predicative heads that move to E, while future may appear on predicates that do not move though V_1 to E. Since all of these heads, including adjectives, can realize external arguments, it must be the case that the external arguments of *voa*-, *tafa*-, root, and adjectival constructions are merged into the structure below V_1. This lower position correlates with the different semantics of these external arguments since they are seen as nonvolitional causers. The structures are sketched below.[39]

[39] In the works cited, I assumed that V_2 is simply a root node and that the verbal counterparts become verbal by the addition of V_1. In fact, these and other facts about the Malagasy forms raise questions about categorial distinctions. In the text, I call the *voa*-, *tafa*-, and root forms

(49) Verbal forms



Adjectival forms



If this analysis of tense realization and its conclusions concerning the structure of these predicates are appropriate, then we have another argument that the external arguments of telic predicates are lower in the phrase structure.

Now I follow up two consequences of the proposals that have been made concerning the structure of Achievements. In both cases, we will learn a bit more about argument structure and how it is represented in the lexicon.

7.3.4 The Argument Structure of Cognition Verbs in Tagalog

One consequence of the analysis outlined above is that, if we take this morpheme deletion seriously, we are forced to reanalyze the argument structure of certain verbs such as Experiencer verbs. De Guzman (1992) describes the following puzzle.[40] When we look at the paradigms of the cognition verbs in (50), we see some irregularity. There appears to be a mismatch of syntax and morphology. Looking at only the highlighted areas, we can see that *a-*$\sqrt{}$ is used in constructions where the object (Theme) is the subject for perception and cognition verbs but in constructions where the Experiencer is the subject for emotion verbs.[41]

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adjectival. In actuality, I see them as being part of a continuum with adjectives at one end and verbs at the other. Verbs contain the most syntactic structure and adjectives the least. This is the topic of ongoing work.

[40] De Guzman's interest is first language acquisition, not the determination of argument structure.

[41] I leave the table as it appears in De Guzman's work. The prefix that I call *a-* is labeled *ma-* here because of the extra *m-* prefix. Moreover, I will save the questions raised by the rest of this paradigm for future work.

(50) De Guzman's (1992) puzzle

Root		Experiencer Focus (EF)	Object Focus (OF)	Reason/Other Focus (RF)
PERCEPTION				
kita	see	*MA-KA + kita*	*MA-kita*	*I-KA-kita* *(MA-kita-AN)*
dinig	hear	*MA-KA + dinig*	*MA-dinig*	*I-KA-dinig* *(MA-dinig-AN)*
punah	notice	*MA-KA + punah*	*MA-punah*	*KA-punah-AN*
damdam	sense	*MA-KA + damdam*	*MA-damdam*	*I-KA-damdam*
COGNITION				
alala	remember	*MA-KA + alala*	*MA-alala*	*(I-KA-alala)*
alam	know	*MA-KA + alam*	*MA-(a)lam-AN*	*(I-KA-alam)*
isip	think	*MA-KA + isip*	*MA-isip-(AN)*	*(I-KA-isip)*
tutoh	learn	*MA-tutoh*	*MA-tutoh-AN*	*KA-tutoh*
EMOTION				
takot	fear	*MA-takot*	*KA-takot-AN*	*(I-KA-takot)*
inis	annoyed	*MA-inis*	*KA-inis-AN*	*(I-KA-inis)*

Given my assumptions, the *a-*√ form is really the *a-ka-*√ form with the *ka-* in its zero realization. The fact that I have a particular view of morpheme deletion means I must also have a particular view about the argument structure of these verbs. We know three things. The zero form of *ka-* must come about because the argument in its Spec position is in situ. This argument must be Cause, and it must be in Spec, ASP. Now we are forced to reanalyze the object of an emotion verb as the Cause, and the Experiencer of a perception or cognition verb as a Cause. In (51), I present De Guzman's argument structure, contrasted with what the present analysis forces us to assume, so that we can compare them.[42]

(51) a. **Emotion verbs**: X FEARS Y
De Guzman: EXP Obj
X experiences fear of Y
Proposed: Obj Cause
Y is the cause of X's having become frightened

b. **Cognition/perception verbs:** X KNOWS Y
De Guzman: EXP Obj
X experiences knowledge of Y
Proposed: Cause Obj
X is the cause of Y's having become known

While this may not be the same argument structure as in the English translations, we have already seen that languages differ in terms of event structure and that translations can be misleading. The Tagalog data here suggest that

[42] Obj for De Guzman is similar to a Theme theta-role.

cognition verbs have the event structure of Achievements.[43] This is similar to certain Japanese data. In Section 4.5.1, we saw the *te-iru* test applied to classes of verbs to distinguish Activities, Achievements, and Accomplishments. Uesaka (1996), following Kindaichi (1976), lists only four stative verbs for Japanese: *i-ru* 'to be', *a-ru* 'to be', *ir-u* 'to need', and *dekir-u* 'to be able to'. None of these roots can appear in the *te-iru* form. Roots like *wakar-u* 'understand', however, do appear in *te-iru* constructions and, like Achievements, have only the perfect of result reading (Uesaka 1996: 27). Example (52a) shows an Achievement verb in the *te-iru* construction. As we can see, it must have the perfect of result reading. The examples in (52b) and (52c) tell us two things. First, since these verb roots appear in the *te-iru* construction, we know that they are not States. Second, since they have the perfect of result translation, they behave like Achievements.[44]

(52) a. Ki-ga taore-te-i-ru
tree-NOM fall-*TE*-*I*-PRES
'Trees have fallen down (and they are on the ground now).'

b. John-ga Mary-o shir-te-i-ru
John-NOM Mary-ACC get.to.know-*TE*-*I*-PRES
'John has got to know Mary (and the result still holds now).'
= 'John knows Mary.'

c. John-ga nihongo-ga/o wakar-te-i-ru
John-NOM Japanese-NOM/ACC understand-*TE*-*I*-PRES
'John understands Japanese.'

These data from Japanese make cognition verbs like 'know' appear similar to Achievement verbs like 'fall'. Furthermore, given that they are transitive, one might also suppose that they are similar to transitive Achievements like 'find'. This lends some support to the analysis of the Tagalog verb forms above. Once the argument structure is viewed in this way, the paradigm presented in De Guzman (1992) becomes less problematic. We may have learned something about how these languages choose to organize the argument structure of such verbs.

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[43] See Vendler (1967: 113) for a discussion of this issue.

[44] Uesaka (1996: 40–42) has a long footnote about the problematic status of the verb class of a root like *wakar-*. As we see in (52c), this verb can assign nominative case to its object, like a stative verb, yet it can simultaneously appear in the *te-iru* construction. This sort of dual behavior still needs to be explained.

7.3.5 *Achievements as Pure Results*

Before turning to the issue of external arguments and theta-grids, I will reflect a bit on where we are in viewing the structure of Achievements. We can ask first if they form a natural class. In the characterization of Vendler and Dowty, they are processless results. If one adds a process to them, they become Accomplishments. In terms of the structure proposed here, they differ from Accomplishments in the makeup of V_1. In fact, their V_1s most likely come in a variety of types. There seem to be two subtypes: basically, unaccusatives (*die, fall*) and transitives (*find, discover*). In Malagasy, unaccusatives have an *i-* V_1 and transitive Achievements have an *a-* V_1. Presumably these differ on a dynamic vs. stative axis rather than a [+process] vs. [−process] axis. Further, in the first group, there is no argument in Spec, Asp, while in the second group there is.[45] Since the tests we use to distinguish verb classes probe the process content of V_1 and the telicity of Asp, and not the theta-grid of the root nor the stativity of V_1, these two groups of predicates will fall into the same Aktionsart class. This class will appropriately belong to the same supercategory as States because the V_1P has no process predicate. It will also fall into the same supercategory as Accomplishments due to a [+telic] Asp.

The characterization of Achievements as pure results seems most appropriate. As Ryle puts it (1949: 152):

> My seeing of the hawk seems to be a queerly transparent sort of process, transparent in that while a hawk is detected, nothing else is detected answering to the verb in "see a hawk."

In *I saw the hawk,* what is important is the result (the hawk's being seen) not the maneuver, to use Dell's (1983) terminology for characterizing the Tagalog *aka*-constructions. Again in the words of Ryle (1949: 152):

> They [Achievement verbs] do not stand for performances, or ways of being occupied . . . To put it crudely, they belong not to the vocabulary of the player, but to the vocabulary of the referee. They are not tryings, but things got by trying or by luck.

The importance of the result and the unimportance or nonexistence of the "tryings"—the maneuver—are directly represented in the proposed structure. Furthermore, the demotion of the "player" is also encoded.

While Achievements have something in common—a non-DO/CAUSE V_1—they also differ. Unaccusatives are one type and transitive Achievements another. I choose to put these in the same class just as I assume transitive and intransitive States belong to one class. The difference shows up, however, along the agentivity/durativity lines set up by Pustejovsky and Verkuyl. Unaccusatives can be coerced into being agentive in some cases and durative in some cases more easily than transitive Achievements. This flexibility comes from the lack of

[45] Note that Malagasy, but not English, allows Spec, Asp to realize an argument even for unaccusatives.

specification of V_1 (beyond being eventive). I will tentatively outline how this comes about.

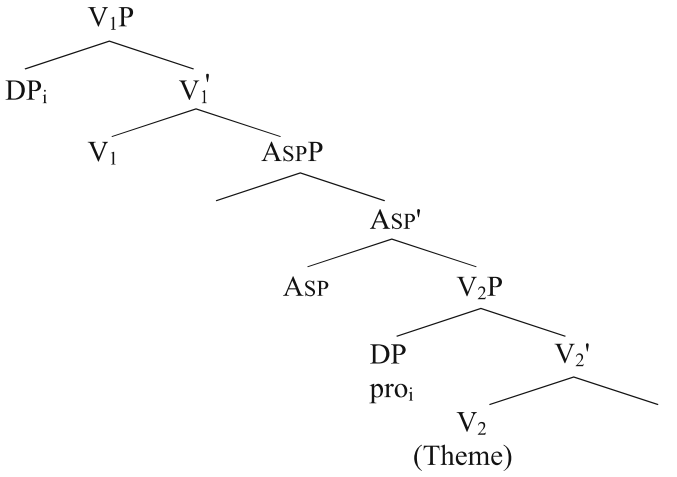
First, we can see that some unaccusatives, such as *arrive* and *fall,* can be agentive.

(53) a. They deliberately arrived late.

b. They fell on purpose.

Certain verbs that enter into the lexical causative alternation in Malagasy, such as *misitraka* 'hide', *mihisatra* 'move slowly', and *mitsangana* 'stand up', can also be agentive in their intransitive form. I assume that these verbs have the option of projecting the structure below. Matsuoka (2001) has argued that this structure is necessary to account for Japanese unaccusatives.

(54)



The theta-grid of the verb shows that it is unaccusative. However, V_1 can take on the flavor of agentivity and assign an Agent theta-role. Since the theta-grid can have only one "true" argument (i.e., it appears in the Spec of a lexical category), this Agent must be coindexed with the existing theta-role, Theme. What allows these verbs to enter into the lexical causative alternation is that the theta-grid may be satisfied in V_2P.[46]

Other unaccusative verbs, while not agentive, seem to contain some sense of durativity. As well, they can appear with the progressive.

(55) a. The chocolate is melting.

b. The boat is sinking.

[46] This mechanism may explain why in some languages ingestive verbs (*eat, drink*) and some outward signs of emotion verbs (*cry, laugh*) can enter into lexical causative alternations (*eat/feed; drink/suckle; laugh/amuse?, cry/tease?*).

I propose that it is the underspecification of V_1 that allows these shifts. Notice that transitive Achievements, which have a stative V_1, are more resistant to coercion.

(56) a. ??They deliberately found/noticed/discovered the flaw.
b. ??They were finding/noticing/discovering the flaw.

I leave an exploration of this phenomenon for future research.

Now we will turn to the problem of these external arguments, and external arguments more generally.

7.4 External Arguments and LCS

On the basis of the conclusions reached so far in this chapter, there are two positions for external arguments: in Spec, V_1 and in Spec, Asp. This has much in common with a proposal made by Fujita (1996) that locates Cause in a lower position than Agent. There is a difference, however, in how the theta-role is assigned. First, it seems to be assigned by a nonlexical category, Aspect. Second, there are two manifestations of this Cause theta-role. In one case, the theta-role comes partly from the theta-grid of the root (43b). In the other, the theta-role comes purely from the [+telic] Aspect (43a). In fact, this brings up another issue. Throughout this book, I have been assuming that external theta-roles are generally part of the theta-grid or LCS of the root. Given the current climate of the Minimalist Program, this assumption is controversial. In this section, I will argue that this view of the representation of argument structure accounts for some interpretation distinctions in Malagasy nominals.

As the data presented below show, *aha-* predicates can be made into *f-* nominals;[47] however, the meaning of the nominal depends on whether the external argument is encoded in the theta-grid of the root. We start with a root that has a complete theta-grid. As we can see, this can appear in an *an-* form and an *aha-* form with the predictable interpretations. The *f-aha* nominal form changes the ability form to a capability nominal.

(57)	a.	√**soritra** 'line'		
	b.	m-an-√soritra	manoritra	'to sketch'
	c.	m-a-ha-√soritra	mahasoritra	'to be able to sketch'
	d.	f-a-ha-√soritra-a-na	ny fahasoritana	'the capability of sketching'

Now we will look at a root that does not have a complete theta-grid, meaning that it does not have an external argument in its theta-grid. This is what Phillips (1996, 2000) would consider a noneventive root. As we see, there is no *an-* or

[47] Paul (1996) discusses the formation of *f-* nominals in detail.

ana- form that would realize the V_1 and introduce an Agent in Spec, V_1. Also, the *aha-* form has a cause-type reading.[48] Importantly, when the verb is turned into a *f-aha* nominal, it does not retain any of the causal meaning. It can only be interpreted as an abstract noun.

(58)	a.	√**finaritra** 'pleasant'[49]		
	b.	m-an-√finaritra	* mampinaritra, * manafinaritra	'to please'
	c.	m-a-ha-√finaritra	mahafinaritra	'to please'
	d.	f-a-ha-√finaritra-a-na	ny fahafinaretana	'pleasure'

In summary, roots with full theta-grids (i.e., with external arguments) can combine with the prefix *an-,* as shown in (57b). Adjectival roots have no external argument in their theta-grid and cannot combine with *an-* as shown in (58b). The distinction correlates with another distinction within the paradigm. Only roots that can combine with *an-* retain the meaning of the verbal *aha-* form in the *f-aha* nominal (compare (57c and d) vs. (58c and d)).[50] This is quite productive; another example is √*henatra* 'shame'; *menatra* 'to be ashamed'; *mahamenatra* 'to cause shame'; *fahamenarana* 'shame'.

Now we need to address the difference in behavior. Why would the argument structure of one set of roots be retained while that of the other is lost? Why does *fahafinaretana* not mean 'the causing of pleasure'? I link the difference to a difference in the root itself (presence or absence of a theta-grid) and to the nature of the theta-role assignment in the *aha*-form (from the ASP plus the theta-grid or from the theta-grid alone). Apparently, theta-roles that are completely dependent on the Aspect head are lost in the nominalization process. We can now see why the distinction between the two root types, which is lost in the verbal forms, reappears in the nominal forms. ASP loses its ability to add the Cause theta-role in the nominal construction.

There are a variety of directions in which this research can extend. One interesting outcome is that we can now test whether external arguments act like Agents or Causes. Here I will just mention some examples that raise questions, leaving a proper investigation to future research. As shown below,

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[48] Object Experiencer psych predicates are generally *aha-* forms.

[49] In previous work, I cited *kamo* 'lazy' as an example of this type of form. The consultant I was working with had no *man*/*mana* form and only the abstract noun interpretation of the *f-*nominal. However, other consultants I have worked with do have *manakamo* 'to make lazy' in their lexicon and also the ability reading of the *f-*nominal. Clearly, this is the sort of phenomenon that varies from speaker to speaker, indicating a variation in lexical entries. So far, I have not encountered any consultants who accept a *manafinaritra* form. I am grateful for input from Peter Svenonius and the argument structure reading group at Tromsø.

[50] Abstract nominals can be constructed from roots with theta-grids (e.g., *fahakamoazana* 'laziness'; *manakamo* 'to make lazy') but the reverse is not true. A capability nominal can never be constructed from a root without a theta-grid.

the "Agent" morphology can be used for Instruments (from Paul 2000: 53), suggesting that new terminology is needed.

(59) Mandidy tsara ny hena ity antsy ity
PRES.*AN*.cut well the meat this knife this
'This knife cuts the meat well.'

Further, although Object Experiencer psych predicates generally use the Cause morphology, the productive causative morphology can be used as well. As we saw in Chapter 6, productive causative morphology contains the *an-* ("Agent") prefix followed by *f-*. This is shown below. As we can see again below, the term "Agent" morphology is not ideal since the external argument can be either animate (60b) or inanimate (61b). A more appropriate characterization of the *mampa-* form, perhaps, is that it is eventive.

(60) a. N**aha**liana an-dRakoto ny mpampianatra
PST.*A.HA*.√interest ACC-Rakoto DET teacher
'The teacher interests Rakoto.'

b. N**ampa**liana an-dRakoto ny mpampianatra
PST.*AN-F.A*.√interest ACC-Rakoto DET teacher
'The teacher made Rakoto interested.'

(61) a. N**aha**liana ahy ny lahatsoratra
PST.*A.HA*.√interest ACC.1SG DET article
'The article interested me.'

b. N**ampa**liana ahy ny lahatsoratra
PST.*AN.F.A*.√interest ACC.1SG DET article
'The article made me interested.'

I have given slightly different translations for these causative examples depending on the morphology. One reason is that my account creates one in the L-syntax (*nahalina*: X interests Y) and one in the S-syntax (*nampalina*: X makes Y interested). Another reason I do this is because of a similarity with a fact about Experiencer Object constructions in other languages. As Pesetsky (1995) pointed out, Experiencer Object constructions, while apparently causative versions of Experiencer Subject constructions, have a missing "third argument." The relevant data are given below.

(62) a. I am interested in Madagascar.
b. The book interests me (*in Madagascar).
c. The book made me interested (in Madagascar).

I will not go over Pesetsky's account here except to note that it depends on the lack of overt causative morphology in (62b). The Malagasy data raise problems for an analysis of this kind. First, we can see that a similar distinction exists in Malagasy. The *aha*-form disallows the third argument while the *ampa*-form allows it.

(63) a. N**aha**liana an-dRakoto (*an'iMadagasikara) ny mpampianatra
PST.*A.HA.*√interest ACC-Rakoto (in Madagascar) DET teacher
'The teacher interests Rakoto (*in Madagascar).'

b. N**ampa**liana an-dRakoto (an'iMadagasikara) ny mpampianatra
PST.*AN.F.A.*√interest ACC-Rakoto (in Madagascar) DET teacher
'The teacher made Rakoto interested (in Madagascar).'

(64) a. N**aha**liana ahy (*an'iMadagasikara) ny lahatsoratra
PST.*A.HA.*√interest ACC.1sg (in Madagascar) DET article
'The article interested me (*in Madagascar).'

b. N**ampa**lina ahy (an'iMadagasikara) DET lahatsoratra
PST.*AN.F.A.*√interest ACC.1sg (in Madagascar) the article
'The article made me interested in Madagascar.'

I do not propose an account here but simply suggest that the distinction stems from the domain in which the causative is formed. If it is created in L-syntax (i.e., is just one E-word), the third argument is not possible. If it is created in S-syntax (i.e., is more than one E-word), the third argument can be realized.

7.5 Conclusion

The goal of this chapter was not only to solve the problems of the syntax of Achievements, argument realization in Malagasy, and morpheme drop in Tagalog, but also to show how semantics, syntax, and morphology can converge on a single issue. Argument realization in Malagasy pointed to telic predicates' having something special. While telicity is a semantic notion, it has dramatic effects on the syntax, in particular the arrangement of the arguments of the predicates. I see this as a rearrangement of theta-role assignment. Tagalog morphology provided quite subtle confirmation of this. If we allow Agent theta-roles to be assigned in two different ways to two different positions, we can capture the semantic differences of the roles (volitional vs. nonvolitional), the syntactic realization, and the distribution of covert morphemes in Tagalog. All of these observations combined can be brought to bear on the question of Vendler's verb classification. If [+telic] predicates can satisfy both

their argument structure and their event structure requirements without projecting a V_1P, they form the syntax of an Achievement predicate.

This chapter has supported the claim that Achievements exist as a separate Vendlerian class in syntax. Much of the discussion centered on the syntactic realization of telicity and how it may vary cross-linguistically. In the next chapter, I will address problems of telicity that arise in cross-linguistic variation, acquisition, and coercion.

Chapter 8
Bounds and Coercion

8.1 Introduction

In the previous chapters, I have been constructing a view of phrase structure that maps fairly closely to event structure.[1] Working in the same direction as much of current syntactic research, I proposed in particular that syntax encodes the endpoint of an event. Problems arise, however, when endpoints are looked at more closely—and looked at cross-linguistically. If endpoints are to be encoded in syntax, we have to face the question of how language variation in their behavior should be represented. In this chapter, I first outline some ways in which languages can vary and propose that these variations can be captured by placing endpoints at different positions in the phrase structure. Once this system is set up, however, a new question arises. Some of the meanings that are achieved in certain languages with overt morphology are achieved in other languages through coercion. In the last section of this chapter, I will suggest that coercion is achieved through a system of zero morphology that mirrors overt alternations in other languages.

8.2 Endpoints

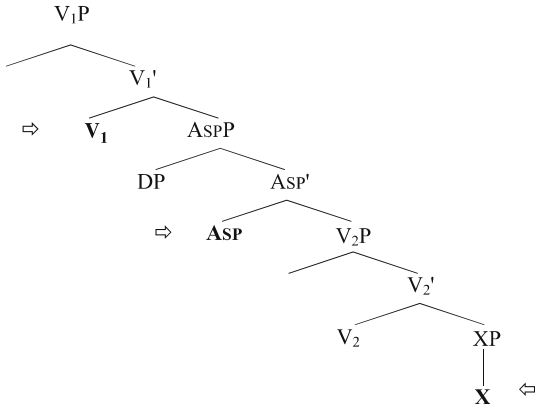
Let us review some of the claims that have been made in earlier chapters of this book. I have argued for an articulated VP structure, given below, where Asp(ect) Phrase occurs embedded within the VP, below the position of the base-generated external argument. It is this Aspect projection that is important in calculating the aspectual verb characterization of the verb and its internal arguments. I assume that Themes are generally merged into the

[1] Much of the material in this chapter appears in Travis (2003, 2005a).

L. deMena Travis, *Inner Aspect*, Studies in Natural Language and Linguistic Theory 80, DOI 10.1007/978-90-481-8550-4_8,

Spec position of the V_2P, but that the element that measures out the event, in the sense of Tenny (1994), will appear in Spec, Asp, generally via movement. In the present section of this chapter, I will argue in particular that telicity can be marked in three places in the VP structure, as shown by the arrows on the tree in (1). These three places are (i) X, the head of the complement of the V; (ii) Asp; and (iii) V_1.

(1)



If there are three possible positions in which event boundaries can be encoded, we would like a principled way of distinguishing them. I present evidence for each of these positions in turn and argue that they have different consequences with respect to other elements in the tree. The basic distinctions will depend on three different elements:

(i) whether the element appears in a **lexical** head (P or A in X),
an **inflectional** head (Asp),
or a **light verb** head (V_1);

(ii) whether it appears in the **Goal** position, thereby establishing the endpoint of the event,
in the **telicity** position in which it determines a designated point of an event, either an ending or a beginning,
or in the **process** position of the event, in which case, as well as supplying an endpoint or a beginning point, it can give an arbitrary bound to the process; and

(iii) whether it appears **above** the event-measuring DP,
in the **same** projection as the event-measuring DP,
or **below** the event-measuring DP.

These distinguishing characteristics are summarized in the table in (2).

(2) Three positions of telicity

V_1	Asp	X
Light verb[2]	Event-related	Lexical category (AP/PP)
restricted class	category	open class
may have	closed class	may have idiosyncratic
idiosyncratic	productive	meaning
meaning	meaning	
natural endpoint	natural endpoint	natural endpoint
beginning point	beginning point	
arbitrary bound		
Above event-measuring DP	Same projection as event-measuring DP	Below event-measuring DP

Going from right to left in the first row of the table, we can say, just observationally, that we might expect a different inventory of elements to appear in each of the three positions. X often is realized as an A (*The children hammered the nail* ***flat***) or a P (*The children pulled the poster* ***down***). Since they are lexical categories,[3] we expect to find a wide range of possible elements in this position. Further, as X is a lexical category within the domain of l-syntax, one would expect some idiosyncratic behavior. For example, its semantic contribution to the V + X complex might not be completely compositional.

I assume, however, that Asp is an inflectional category and as such we expect to find a closed set of elements in this position. In the extreme, there may be just the realization of plus or minus features, as we have seen for *ha-* in Malagasy. Further, as an inflectional category, I would expect the realization of Asp to be more productive and its meaning contribution to be more predictable than what is found in the lexical categories within the l-syntax domain.

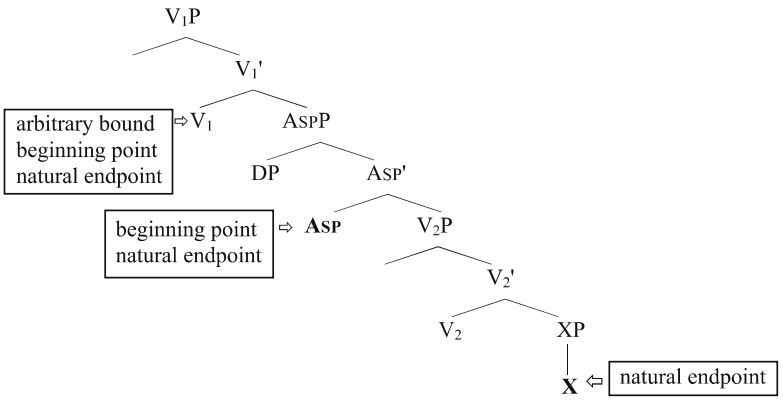
Finally, while Chomsky (1995) considers "little" v to be a functional category, I assume that V_1 is a light V, a functor category along the lines of Ritter and Rosen (1993). As such, it will not be as open a class as X or as closed a class as Asp but would have a relatively small number of realizations (see Folli and Harley 2005 for a discussion of "flavors" of little v, as well as Arad 1998).

[2] Ritter and Rosen (1993) define functor predicates as "predicates which lack lexical semantic content." The "flavors" of V_1 would then be determined by their event status (+/–stative), the telicity of the lexical material they contain (as in Bulgarian preverbs), and whatever idiosyncratic information the preverb contains (e.g., changing from *pisa* 'to write' to *pre-pisa* 'to copy' in Bulgarian).

[3] I assume that P is a lexical category and not a functional category (cf., e.g., Baker 2003), though this assumption is not crucial in the context of this book.

These are simply observations concerning the range of variation in the elements we might expect to appear in these positions; the other characteristics of the different elements will be much more important in determining their positions. We will see that these characteristics follow from the syntactic configurations that they find themselves in. The second row refers to the semantic contribution that elements in each position can have. I assume that elements in X, the typical position of Goal, can only describe the natural endpoints of events. Elements in Asp or V_1 can pick out beginning points of events as well as natural endpoints. Finally, since elements in V_1 have syntactic scope over the whole event and in particular are in the position where the process portion of an event is encoded, they can designate arbitrary endpoints of events. Examples of these will be given below to flesh out what is meant. In (3), we see these characteristics laid out on the tree.

(3)

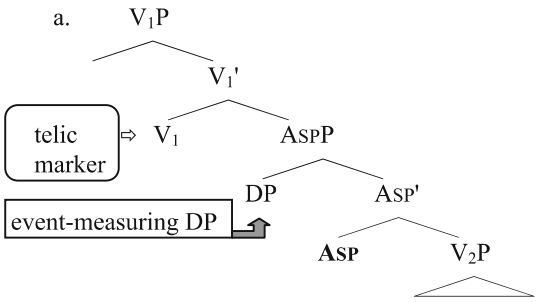


Finally, because of their different positions with respect to the event-measuring DP, the telicity markers will interact with the DPs differently.[4] The markers in V_1 have scope above this DP and may therefore affect its interpretation. Further, it is the telicity marker in V_1 that will determine the overall interpretation of the predicate.[5] The markers in X have scope below the event-measuring DP. When the telicity marker is within the c-command domain of the DP, it is the DP that determines the overall classification of the predicate. This is shown below.

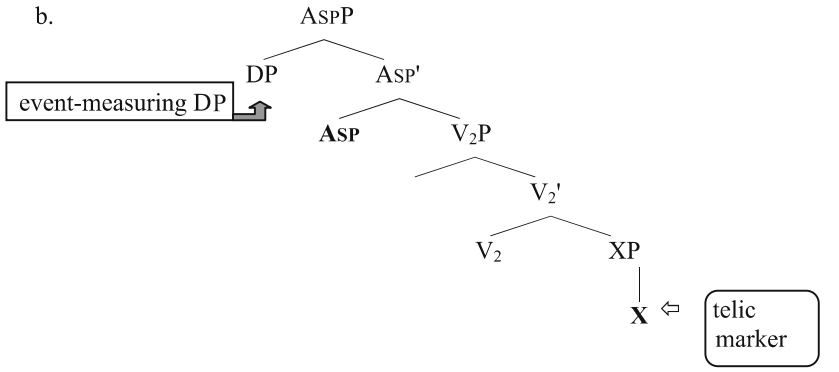
[4] The idea of using the interpretation of telicity with respect to the event-measuring DP comes from Slabakova's work (e.g., Slabakova 1996, 1997a, 2001).

[5] Nossalik (2009) achieves this distinction by parameterizing the direction of valuation of features. In a language like English, the direct object contributes information to the Asp head. She assumes that, in Russian, preverbs are in Asp and contribute information to the interpretation of the direct object.

(4) a.



b.



Problems arise concerning the interaction of telicity markers in Asp and the event-measuring DP. Consequently, I will leave the issue aside for now and return to it later. Now we will look at each of the telicity positions in turn.

8.2.1 Telicity in X

Arguing that the position X can hold material encoding the endpoint of an event is the least controversial of the claims that I will make.[6] As we saw in Chapter 4, many of the small clause-type analyses of complex verb phrases proposed in the late 1980s had the equivalent of an X position to describe the endpoint of an event (e.g., Hoekstra 1988 and, for a more recent reference, Folli and Harley 2005).[7] A typical example from English is given below where the atelic verb *push* (5a) becomes telic when a PP is added (5b). This shows that

[6] This position for the marking of telicity is similar to, among others, Higginbotham (2000) and Snyder (1995).

[7] In some similar analyses, this sort of result is represented with a small clause. In my structure, it is not a small clause, but rather the VP as a whole, which encodes this relation of predication.

position X can describe a natural endpoint to an event. Further, we can see that, if the event-measuring DP is a bare plural ([–SQA] in the terminology of Verkuyl 1989), it changes the whole VP back to an atelic predicate (5c). Following Slabakova (1997a), I argue that this shows that the telicity marker (in this case, the PP) has scope below the event-measuring DP.

(5) a. *push* DP_{sg}—atelic
The children pushed the cart (*in three minutes/$\surd$for three minutes).

b. *push* DP_{sg} *PP*—telic
The children pushed the cart to the wall
($\surd$in three minutes/*for three minutes).

c. *push* DP_{barepl} *PP*—atelic
The children pushed carts to the wall
(*in three minutes/$\surd$for three minutes).

This marking of the natural endpoint of an event in the complement position of a V is well known from work on languages like Chinese.[8] We have already discussed the atelic nature of Chinese. As Tai (1984) notes, Chinese constructions can have Accomplishment verbs in the perfective without entailing the completion of the event, as shown in (6a) below. A true Accomplishment (i.e., one that entails completion) is formed by adding a resultative predicate, as in (6b) (glosses from Soh and Kuo 2005).[9]

(6) a. wo zuotian xie-le yi-feng xin, keshi mei xie-wan
I yesterday write-LE one-CL letter, but not write-finish
? 'I wrote a letter yesterday, but I didn't finish it.'

b. wo zuotian xie-wan-le yi-feng xin,
I yesterday write-finish-le one-CL letter,
keshi mei xie-wan
but not write-finish
? 'I wrote a letter yesterday but I didn't finish it.'

Following analyses such as Sybesma's (1992), I assume that the resultative predicate is generated in a position similar to goal phrases in English.[10]

[8] Serial verb languages have also been argued to have a low resultative complement (see, e.g., Larson 1991, Stewart 1998, Baker and Stewart 1999a) and the discussion of Serial Verb Constructions in Section 6.7.1.

[9] I use the same grammaticality markings as those used in the paper. Presumably the question mark on the English translations show that the English equivalents are semantically odd.

[10] As we saw, Soh and Kuo (2005) show that the facts of Chinese are a bit more complicated.

8.2.2 *Telicity in V_1*

Slabakova (1997a,b, 2001) has argued that, in Bulgarian (and other Slavic languages), the marking of telicity by preverbs occurs in a position higher than the marking of telicity in English.[11] In Slabakova (1997a,b), she claims that these preverbs appear in V_1, her "little v." She gives two arguments for this: the fact that preverbs can also encode a causative meaning, as might be expected in V_1, and the fact that these preverbs have scope over the event-measuring DP. Relevant examples for each argument are given below. In (7), we see the preverb *raz-* (glossed as PV), which adds an agent to the root verb. As we have seen in Malagasy and Tagalog, the morphology that is used to create lexical causatives is in V_1. In the interest of keeping language representations as similar as possible, we would at least hypothesize that *raz-* should also be in V_1.

(7) *raz-* adds an agent (Slabakova 1997b: 89)

a. Kounòt *raz*-smja/*raz*-plaka bebeto
clown-DET PV-laugh/cry-3sS/AORIST baby-DET
'The clown laughed/cried the baby.'[12]

b. Kompanijata na drugi dexo vinagi raz-jazda
company of other children always PV-eat 3pS/PRES
decata
children-DET
'The company of other children always gives children an appetite.'

To show that the preverb has scope over the event-measuring DP, Slabakova uses data such as the sentence in (8) below. Here we see that the preverb creates a telic event in spite of the apparent [–SQA] quality of the DP (Slabakova 2001: 89).[13]

(8) Toj na-pis-a pisma *3 casa/za 3 casa
he PV-write-3SG/AORIST letters *for 3 hours/in 3 hours
'He wrote letters in 3 hours.'

---

[11] Slabakova (1997a, 2001) assumes that telicity in English is computed and realized in the Inner Aspect position. I will reserve overt marking of telicity in this position for a different sort of phenomenon (see Section 2.3) and assume that the telicity of the verb in English is encoded in the X position.

[12] The English translations are not grammatical. As discussed in Section 7.3.5, it may be that there are suppletive (near) equivalents (*The clown amused/frightened the baby*).

[13] Slabakova (1997a) places Bulgarian preverbs in V_1 and this is the analysis that I am following. In Slabakova (2001), she changes her analysis and places the preverbs in a Perf head between V_1 and ASP. In either case, the head is higher than ASP.

There is an different way of viewing such data, however. Although morphologically bare, the object DP in (8) is specific. One could claim, then, that this DP is outside of the VP itself. In this VP-external position, it would be the object DP that ensures that the event is telic and not the preverb. This simply shifts the question, however. If bare NPs can, in principle, be either specific or nonspecific, the question is why preverbs of this sort force the specific (and therefore [+SQA]) reading. This does not happen with preverbs in other languages, as the Dutch and German examples in (9) and (10) show.[14] The example in (9a) shows that a verb, *geschreven*, with a preverb, *af-*, plus a [+SQA] object, *haar proefschrift*, creates a telic event. This explains why the frame adverbial, *binnen een jaar*, is possible but the duration adverbial, *jarenlang*, is not. What (9b) shows is that it is the bare plural, *brieven*, that shifts the computation of the event to atelic, thereby shifting which adverbial is possible.

(9) a. Elena heeft binnen een jaar/*jarenlang haar proefschrift afgeschreven
Elena has within a year/years-long her thesis off-written
'Elena finished writing her thesis within a year/*for years.'

b. Elena heeft ??binnen een jaar/jarenlang brieven afgeschreven afgeschreven
Elena has within a year/years-long letters off-written off-written
'Elena finished writing letters ??within a year/for years.'

A similar example from German is given below.

(10) a. Ich habe in zwei Stunden/*zwei Stunden lang
I have in two hours/ two hours long
zwei Weinflaschen ausgetrunken
two wine bottles up-drunk
'I drank up two wine bottles in two hours/*for two hours.'

b. Ich habe *in zwei Stunden/?zwei Stunden lang
I have in two hours/two hours long
Weinflaschen ausgetrunken
wine bottles up-drunk
'I drank up wine bottles *in two hours/?for two hours.'

Relating these two examples back to the Bulgarian example, we can ask why, if Bulgarian DPs are ambiguous between a nonspecific [–SQA] reading and a specific [+SQA] reading, we cannot get a reading similar to the Dutch or German examples. Telic particles in Dutch and German do not require specific objects. To explain the different effect that preverbs have in Bulgarian versus the Dutch and German particles, I would propose that it has to do with the high positioning of the preverb in Bulgarian versus the low positioning of the particles in Dutch and German. From V_1, the Bulgarian preverbs can exert an influence on the event-measuring DP within their c-command domain. The

[14] Example (9a) is taken from van Hout (1996: 94); (9b) was provided by Jozefien Akkermans, and (10a) and (10b) were provided by Máire Noonan.

Dutch and German particles, however, can place no restrictions on event-measuring DPs since the particles do not c-command these DPs.

If the Bulgarian preverbs are in V_1, we expect to find a restricted set of them. This set, I assume, will be larger than something represented in an inflectional category, where there may be only one or two realizations. On the other hand, it will be smaller than something represented by a true lexical category, which could be an open set.[15] Further, as a head within L-syntax, I would expect the meaning to not necessarily be compositional. I claim further that, from the position of V_1, which has syntactic scope in the form of c-command over the entire V_1P, telicity marking can target a variety of points in an event. It can not only specify the natural endpoint, as can an element in X, but also target the initial point and an arbitrary endpoint. The examples below show all of these possibilities. In (11), we again see the case of Bulgarian preverb *na-* added to the root to give a telic predicate.[16] When the same preverb is added to the stative predicate *mraz* 'hate' in Bulgarian, as in (12), a beginning point is created. In example (13) from Bulgarian (Slabakova, personal communication.), a preverb added to an Activity picks out the Activity's beginning point. Finally, Kozlowska-Macgregor (2005) shows that the preverb *po-* in Polish, presented here in one of its uses in (14), creates an arbitrary endpoint.

(11) na-pis-a (natural endpoint)
PV-write-1SG
'to write up'

(12) na-mraz-ja (beginning point)
PV-hate-1SG
'to start hating someone'

(13) Toj za-tancuva vals mnogo dobre (beginning point)
he PV-danced-AOR waltz very well
'He began waltzing well' OR 'He learned to waltz well.'

(14) Maria po-czyta-la ksiazke (arbitrary endpoint)
Maria **po**-read-PAST book
'Maria read a book for a while'

While Slavic-type preverbs are often glossed as being perfective, they are clearly different from the Outer Aspect sort of perfectivity. They are not productive, their semantics is not compositional, and they shift predicates

[15] In practice, however, the difference between the inventories of V_1 and X may be hard to distinguish, especially if X is likely to be a P. There is a restricted number of Ps in most languages.

[16] The Bulgarian examples are given in the first person singular form, which is the citation form.

from one aspectual verb class to another, clearly interacting with situation aspect or Aktionsart.[17]

8.2.3 *Telicity in Asp*

Now that we have looked at two types of telicity markers, I will concentrate on a third type—the one that appears in the AspP within the VP. We have already seen that Malagasy provides overt evidence for the use of this position. We raised the question of whether a telicity marker in this position would have scope over the event-measuring DP or not. Given the structure presented in (1), we could imagine the account going either way. In a strict notion of c-command, Spec, Asp asymmetrically c-commands the head Asp. However, considering other notions such as m-command, Spec, Head relations, and/or minimal domains, we could say that Asp might have scope over the event-measuring DP.[18] Unfortunately, the cases of endpoints realized in Asp that we will be looking at here have other effects on the syntax and semantics of the arguments involved. Let us begin by looking at the other characteristics that are expected of elements that appear in this position. They are arguably inflectional categories, and they can indicate the beginning or endpoint of an event.

As we have already seen, Malagasy is what might be called an "atelic language," in that in the neutral verb forms, no commitment is made to arrival at the natural endpoint of the described event even though the conversational implicature is that this point has been reached (as in Chinese).

(15) a. namory ny ankizy ny mpampianatra (n + an + √vory)
PST.*AN*.meet DET children DET teacher
'The teacher gathered the children together.'

b. . . . nefa tsy nanana fotoana izy
. . . but NEG PST.have time 3P
'. . . but s/he didn't have time.'

In order to ensure completion, another verbal form is used, as shown in (16) below.

---

[17] See Kozlowska-Macgregor (2005) for arguments that Polish has two *po*-s, an L-syntax morpheme and an S-syntax morpheme. A reviewer suggests that perhaps not all Slavic preverbs are in the same head. I would like to maintain that all L-syntax preverbs are in V_1 unless I am forced to say otherwise (see Nossalik 2009 for arguments that all Slavic preverbs are in the same head).

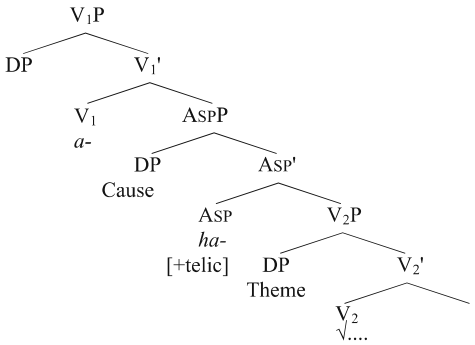
[18] In a framework such as that of Epstein et al. (1998), the only relevant notion is c-command. Unfortunately, I do not have data that clearly argue for one proposal or the other.

(16) a. nahavory ny ankizy ny mpampianatra (n + a + ha + √vory)
PST.*A*.*HA*.meet the children the teachers
'The teachers gathered the children.'

b. * . . . nefa tsy nanana fotoana izy
' . . . but they didn't have time.'

In the account presented in Chapter 6, I argued that the external argument in these constructions appears in the Spec, ASP position.

(17)



It is clear that *aha-*, when added to an event that describes a natural endpoint, insists that the natural endpoint of the event has been reached. When added to Activities, however, the telicity marker must refer to the beginning point, as shown in the example below.[19]

(18) a. nandihy ny ankizy
PST.*AN*.dance the children
'The children danced.'

b. nahadihy ny ankizy
PST.*A*.*HA*.dance the children
'The children were able (to begin) to dance.'

[19] Much more could be said about this example, but it would take us far afield. Only endpoints are implied but defeasible. Beginning points of processes are always entailed (much as in the imperfective). Adding the telicity marker to an Activity, therefore, only has the secondary effect of turning the external argument into a Cause rather than an Agent. This is not unlike English where *They were able to build the house* points to the actualization of the endpoint whereas *They were able to dance* points to the actualization of the beginning point. See Bhatt (1999) for a discussion of *be able* as a predicate of actualization.

This morpheme, then, can in some sense "see" the natural endpoint of the event if it has one; otherwise, it refers to the beginning point of the event.[20]

Before beginning a discussion of what we can learn from this morpheme, I need to examine the important issue of whether this morpheme is part of situation aspect (and telicity) or viewpoint aspect. In other words, does *aha-* signal telicity or perfectivity? My assumption is that, if an alternation is part of L-syntax, as in the case of the Slavic preverbs, it has to do with situation aspect, not viewpoint aspect. Now the question is whether *maha-* belongs to L-syntax or S-syntax. For example, the difference between *look for* and *find*, one could argue, is the difference between the process of a task and the successful completion of that task. I do not believe anyone would argue that *find* is the perfective form of *look for*. In Malagasy, such pairs are often created by alternating between the nontelic form (*an-*/*i-*) and the telic form (*aha-*). Some examples of pairs are *mitsinjo*/*mahatsinjo* 'to look out for/to notice', *mitsapa*/*mahatsapa* 'to inspect/to notice', *mamantatra*/*mahafantatra* 'to examine/to know', and *mitadidy*/*mahatadidy* 'to try to remember/to remember'. Furthermore, some Achievements appear only in the *aha-* form, as the following list, repeated from Chapter 7, shows.

(19) Verbs that must take *aha-* (Rabenilaina 1985: 372)

mahazo	'to understand, to seize'	
mahalala	'to know'	
mahatsiahy	'to feel, to remember'	
mahatsikaritra	'to remark'	
mahatsiaro	'to perceive'	
mahahay	'to know'	(>*mahay*)
mahahita	'to see'	(>*mahita*)

The conclusion that *aha-* is part of L-syntax will be brought up again later, as it is important in the discussion of coercion. At this point, however, I assume that *aha-* realizes situation aspect rather than viewpoint aspect.

Predicting the effect of a morpheme in Asp on the event-measuring DP is less straightforward than it is for morphemes in the other two positions. Part of the problem is that the languages that arguably make use of this position, such as Malagasy and Chinese, also have DPs where the value of SQA is difficult to determine. A further problem is that the use of this position seems to have other effects on the structure that interfere with the usual tests for event measurement. First, the Malagasy structure co-occurs with a stative marker and secondly, the

[20] The obvious question is whether this construction can be formed with States. The answer is more difficult, though. In a way, every Malagasy verb is derived from a stative root. For example, the verb *mamaky* 'to break' is formed by adding *an-* to the adjectival root *vaky* 'broken'. When *aha-* is added instead of *an-*, we get the effect seen above. When *aha-* is added to an adjective that does not have a deverbal form such as *kamo* 'lazy', a causative is formed. See Phillips (1996, 2000) and Chapter 6 for more details on this and an account.

element in the Spec, Asp appears to be the external argument rather than the internal argument. Because of these problems, I shall leave this issue for further research.

To summarize this section, we have seen that the morphology that is needed in the computation of the situation aspect of a predicate can appear in three different positions within an articulated VP. Each of these positions has its own characteristics. The X position describes the endpoint of an event, often shows the range typical of lexical categories, and can be idiosyncratic in terms of distribution and semantic contribution. The Asp position, as a nonlexical category, is a closed class of perhaps only two items, simply encodes whether a designated point in the event has been achieved, and is more predictable in its distribution and semantic contribution. For predicates that imply natural endpoints (what would be translated as Accomplishments in English), it is this endpoint that is specified. For verbs/predicates without natural endpoints (Activities), the designated point will be the initial point. Since telicity markers in V_1 are light verbs, they will have a restricted set of realizations. Furthermore, they will be able to target endpoints and beginning points of events as well as creating an arbitrary bound. I claim that all of these elements occur within the VP as they are part of l-syntax.

8.2.4 Telicity in X and V_1

We have seen that telicity can be marked in three different places. We have used English and Chinese to look at marking in X, Bulgarian (and Polish) to look at marking in V_1, and Malagasy to look at marking in Asp. A given language may employ more than one of these, however, and to see this we turn to the Athabaskan languages Navajo and Slave.

We have already taken a detailed look at the verbal morphology of Navajo in Section 3.2.2. The templatic description is repeated below.

(20) Navajo Verbal Morpheme Order (Speas 1990: 205)

ADV	ITER	DIST-PL	D-OBJ	DEIC-SBJ	ADV	MODE	SBJ	VOICE/TRNS	STEM
1	2	3	4	5	6	7	8	9	

1 = ADVERBIAL: manner, direction . . . also indirect object pronoun
2 = ITERATIVE: aspectual/adverbial prefix
3 = DISTRIBUTIVE PLURAL: plural and distributive, 'each one separately'
4 = DIRECT OBJECT: number and person of direct object
5 = DEICTIC SUBJECT: indefinite (someone) or fourth person (people in general)
6 = ADVERBIAL: adverbial/aspectual notions
7 = MODE: core of tense system
8 = SUBJECT: person and number of subject
9 = VOICE/TRANS

We were most interested in the positions 1, 6, and 9 since lexical entries appeared to be spread out over these three positions. Three examples of these "discontinuous lexical items" are repeated in (21).

(21)	a.	yá . . . ti'	'to talk'	1	. . .				stem (9)
	b.	di . . . lid	'to burn something'			6	. . .		stem (9)
	c.	so . . . di . . . zin	'to pray'	1	. . .	6	. . .		stem (9)

These lexical entries can be interspersed with productive material that looks more inflectional. I accounted for this by assuming that position 1 is X, position 6 is V_1, and position 9 is V_2 (plus $\sqrt{}$). The inflectional-type material in positions 2 through 5 will be realized on the Inner Aspect position, and the material in positions 7 and 8 will be realized on functional categories above the V_1P. The template is then reduced to the following mapping to syntax:

(22) Template for Navajo

affix positions in template:	**1**	2–5	**6**	7–8	**9**
phrase structure positions:	**X**	ASP	**V_1**	"I"	**V_2**

The phrase structure hierarchy of the morpheme order of Navajo, in fact, correlates quite closely with a recent analysis by Rice (2000) of similar morphemes in a related language, Slave. Rice's goal is to show that the order of morphemes in Slave correlates with their syntactic scope. In her analysis, she investigates three sets of morphemes that are relevant for the discussion here. These are what she calls situation aspect markers, subsituation aspect markers, and preverbs. Though much more work on this language is required before any claim can be made with certainty, I would like to suggest that the preverbs are in X and therefore appear in position 1, the subsituation markers are in ASP (around position 2), and situation markers, glossed SASP, are in V_1. A template adapted to Rice's terminology is given below.

(23) Template

affix positions in template:	**1**	2–5	**6**	7–8	**9**
phrase structure positions:	**X**	ASP	**V_1**	"I"	**V_2**
	↑ preverbs	↑ subsituation	↑ situation		

Some examples of preverbs are given below (Rice 2000: 263):

(24) a. ní-n-i-zha
PV-achievementSASP-PERFviewpt-stem
'S/he arrived at a point.'

b. ní-né-n-i-yo
PV-qualifier-achievementSASP-PERFviewpt-stem
'S/he stopped (completed) growing.'

In the examples I have given, it is clear that the preverbs are picking out the endpoint of an event and thus co-occur with achievement situation aspect morphology. This is what we would expect for morphology located in X. However, other examples of preverbs that Rice gives, while describing an endpoint, are vague as to whether it has been reached. It is the situation marker that clarifies this point. In these cases, the preverb would be like the preposition *toward* in English. It is in the X position but it is not telic. Now the situation marker in V_1 determines the endpoint. The situation marker *s* indicates that the endpoint is reached, while the situation marker *gh* indicates that it has not necessarily been reached (Rice 2000: 267–268).[21]

(25)

s situation aspect (Activity)	*gh* situation aspect (Accomplishment)	
ná-zhe-eh-chú	*ná-zha-a-chú*	*ná*'down' 'take something down, bring down, put down...'
ká-zhe-né-h-sho	*ká-zhe-ni-i-h-sho*	*ká* 'out' 'cause to grow out'

The morphemes that Rice labels subsituation markers add "purely aspectual material" to the verb. The examples given are inceptive, egressive, and conative. Some examples are given below (Rice 2000: 261). Again, the general meanings are not surprising given their position. They appear to be sensitive to endpoints and beginning points.

(26) Inceptive *d*

a. d-éh-ji
inceptive-accomplishmentSASP-voice/stem
'S/he started to sing.'

[21] I refer the reader to Rice's work for the exact realization of the relevant morphemes. Unfortunately, the morphophonology of Slave is such that the exact morpheme breakdown is often obscured.

b. d-é-ya
inceptive-accomplishmentSASP/PERFviewpt-stem
'S/he started to go.'

(27) Egressive *n*

a. n-é-ti
egressive-accomplishmentSASP/PERFviewpt-stem
'S/he fell asleep.'

b. n-éh-tlah
egressive-accomplishmentSASP-stem
'It landed.'

While it appears that preverbs and subsituation markers appear in X and Asp respectively in Slave, I assume that situation markers appear in V_1.[22] This correlates with the use of these morphemes—those in position 1 (X) can only see part of the situation, the endpoint; those in Asp can see the end and the beginning; while those in position 6 (V_1) see the whole situation. What is interesting and requires further exploration is the fact that the morphemes in V_1 act a bit differently from their counterparts in Bulgarian. In Slave, if the telicity value has been determined lower in the structure, the V_1 simply reflects this value. If, however, as in example (25), telicity has not been determined, the material in V_1 can set the value. Slave and Navajo, then, are cases where elements in a variety of heads can be used to create the construction of an event.

The question then arises of the role played by DPs in such a language. Smith (1991) and Rice (2000) pick up this question in Navajo and Slave respectively, both coming to the same conclusion: DPs do not enter into the computation of aspectual classes in these two languages. This is not surprising if these languages are polysynthetic in the sense of Baker (1996). As polysynthetic languages, they would not have DPs in argument positions but rather in adjunct positions. Rice (2000: 271), however, points out the following intriguing fact. When pronominal elements are incorporated into the verbal morphological system, they can have an effect on the computation.

(28) a. be-w-i-h-xi
'I killed it/him/her/it' (*s* accomplishment situation aspect)

b. ku-**y**-i-gho
'I killed them' (*gh* activity situation aspect)

[22] Rice (personal communication) says that preverbs and subsituation markers can co-occur, with the subsituation marker appearing closer to the verb stem than the preverb. I claim that, due to their greater productivity and their position relative to the preverbs, subsituation markers are part of the inner aspectual system of Slave.

What is interesting in the data above is that the plural pronominal material acts as if it is [–SQA], unlike what occurs in the English translation. A better translation, perhaps, would use a bare plural, such as *things*. Again, the element in V_1—the situation marker—reflects the telicity value that has been determined by the elements lower in the V_1P.

8.2.5 An Aside: Different Types of Beginnings

In this section, I will speculate on two ways that material marking the beginning point of an event can enter the structure. As we saw briefly above, Dutch is a language that clearly uses morphological markers to encode natural endpoints. Some typical examples, taken from van Hout (2000: 247–249) are given in (29).

(29) a. Het hout heeft urenlang/ *in een uur gebrand
the wood has hours-long/ *in an hour burned
'The wood burned for hours/*in an hour.'

b. Het hout is *urenlang/ binnen 5 minuten verbrand
the wood is *hours-long/ within 5 minutes PFX-burned
'The wood burned up *for hours/within five minutes.'

c. John heeft die hele nacht/*in een uur gelopen
John has the whole night/*un an hour walked
'John walked all night/*in an hour.'

d. John is *urenlang/ binnen 5 minuten weggelopen
John is *hours-long/ within 5 minutes away-walked
'John walked away *for hours/within 5 minutes.'

This is as one would expect if the particles appear in the X position (as is suggested by the small clause analysis of Hoekstra 1992: 166). But, as the following examples show (van Hout, personal communication), these verbal particles can also indicate a beginning point.[23] The pairs given in (30a) are from standard Dutch, and the examples give in (30b) are from van Hout's dialect, Brabandish.

(30) a. reizen – afreizen 'travel – set out to travel'
varen – afvaren 'drive (by boat) – start driving (by boat)'

b. rijden – aanrijden 'drive – start driving'
fietsen – aanfietsen 'bicycle – start bicycling'
lopen – aanlopen 'walk – start walking'

[23] Many thanks to Angeliek van Hout for bringing this problem and the relevant data to my attention. I am also grateful to Jozefien Akkermans for discussion on this point and for additional relevant data.

One can see from the following examples that these preverbs do have an effect on the event structure, as they turn the verb forms from unergative Activities into telic unaccusatives. Below we see that the preverb form takes the BE rather than the HAVE auxiliary and the resulting form can be used as a prenominal adjectival participle.

(31) a. Hij heeft jarenlang /*in een jaar gereisd
he has years-long /*in a year traveled
'He has traveled for years.'

b. * de gereisde man
'the traveled man'

(32) a. Hij is in 2 minuten /*jarenlang afgereisd
he is in two minutes /*years-long off-traveled
'He started traveling in two minutes.'

b. de afgereisde man
the off-traveled man
'the man who started traveling'

In order to determine where this prefixal morpheme lies, we can see what scope it has with respect to an object DP. Given that the telic verb forms are unaccusative, we can play with the shape of the subject. Because the subject of an unaccusative verb originates in a position below ASP, I assume it enters into the computation of Aktionsart. An example from English where the SQA value of the subject of an unaccusative verb can have an effect on the aspectual verb class is given in (33) below. I assume that the subject of an unaccusative verb moves first from the underlying object position to the derived object position (Spec, ASP). Here it measures out the event before moving to the derived subject position.

(33) a. The child arrived in 15 minutes/*for 15 minutes.
b. Children arrived *in 15 minutes/for 15 minutes.

The Dutch examples behave similarly, as shown below (examples from J. Akkermans).

(34) Zeemannen zijn jarenlang afgereisd naar Indonesië
sailors are years-long off-traveled to Indonesia
vanaf deze haven
from this harbor
'Sailors have for years set off for Indonesia from this harbor.'

To ensure a consistent analysis of all of these particles, we have to say that the Dutch particles are not in V_1 since they do not have scope above the event-measuring DP. We know this because it is the shape of the DP and not the particle that has final say over the aspectual verb class of the predicate as a whole. The particles, therefore, must be no higher than Asp. Given that this particular particle targets the beginning point of the event, one might suspect that it has to be generated in Asp. I want to suggest a different analysis, however. Some observations on Slave by Rice point to the fact that beginnings are of different types. Slave also has inceptive particles, as well as inceptive subsituation markers. Recall that I have claimed that the preverbs in Slave are in X and the subsituation markers are in Asp. Rice says that there is a semantic difference between the two: "the preverb indicates the point of starting... the [subsituation] inceptive ... refers to the early part of the event rather than to its starting point" (Rice 2000: 264). Some examples of each type are given below.

(35) Inception: Subsituation (in Asp) (Rice 2000: 261)
  a. d-éh-ji
  inceptive-accomplishmentsasp-voice/stem
  'S/he started to sing.'

  b. O de-d-é-h-k'é
  inceptive-accompsasp/perfviewpt-valence-stem
  'S/he started to shoot O.'

(36) Inception: Preverb (in X) (Rice 2000: 264)
  a. ti-gó-n-I-ne
  pv-area-achievementsasp-perfviewpt-stem
  'S/he started to talk.'

  b. ti-ji
  pv/achievementsasp-voice/stem
  'S/he started to sing.'

Note that the situation aspect for the "start" predicate encoded in Asp is an Accomplishment while the "start" predicate encoded in X is an Achievement. While much more work needs to be done both on the morphological systems of Dutch and Slave and on the semantics of inception cross-linguistically, my hypothesis would be that inception has varieties in the same way that completion/termination does and that these varieties should be represented syntactically. Inception within the lower VP appears to reduce the event to one point. A paraphrase of the Dutch example in (30) could have the flavor of lexical subordination (Levin and Rapoport 1988), such as 'left by traveling' or 'left by driving a boat', where the main predicate is the departure and the root $\sqrt{}$*reizen* behaves like a manner tag. Inception higher up in the V_1P, in Asp or V_1, would allow a period of duration to be described by the lower V_2P, while the

marker in Asp would describe a point early in this duration. Interestingly, there are two inception predicates in English, *begin*and *start*, which have different effects. We can say either (37a) or (37b), but (37c) is fine while (37d) is not.[24]

(37) a. I started to cough.
b. I began to cough.
c. I started to cough but stopped myself just in time.
d. * I began to cough but stopped myself just in time.

Begin also describes the first stages (like the subsituation inception marker in Asp) while *start* describes the exact point before the event occurs (like the preverb inception marker in X). These speculations await further empirical support.

8.3 Null Telic Morphemes and Lexical Entries

I will now shift the direction of the discussion in order to conceptualize some of the issues that have just been discussed. We have seen that languages vary significantly in how they encode telicity. Further, we have seen that some of this variation is encoded with empty morphemes. Following Hoekstra (1988), I have been assuming that English has an empty telic morpheme in the lexical item *kill*. This obligatory zero affix distinguishes the English lexical item from the Malagasy lexical item *mamono* 'kill', which has an optional telic morpheme. Slavic languages tend to have overt morphology to indicate telicity. This raises questions for first and second language learners about the nature of lexical items. Part of lexical learning would involve determining the inventory of zero morphology. For this reason, I shall turn to the issue of language variation, zero morphemes, and lexical knowledge.

I will start by outlining the research on the acquisition of lexical knowledge done by Juffs (2000). Noting facts of Chinese similar to those we saw in (6), Juffs proposes that there is a lexical parameter that distinguishes English and Chinese called the CAUSE/STATE conflation parameter. English allows a lexical conceptual structure (LCS) to be realized in a root, as in (38), producing the examples given in (39).

(38) English: $\sqrt{}$ [ACT (+effect) [GO [STATE]]]

(39) a. The book disappointed Mary.
b. The sun melted the ice.
c. John covered the bed with a blanket.

[24] I thank Hela Ben Ayed for pointing these data out to me.

Chinese does not allow such an LCS to be represented by a root, and Juffs claims that this is due to the CAUSE/STATE conflation parameter, the Chinese value of which is given in (40).

(40) Chinese: *[ACT (+effect) [GO [STATE]]]

It is the fact that a root cannot have such a lexical conceptual structure that explains the lack of constructions such as those given in (41) below.

(41) a. * Nei ben shu shiwang le Zhang San
that CL book disappoint ASP Zhang San

b. ?? Taiyang rong(hua) le xue
sun melt ASP snow

c. ?? Zhang San yong tanzi gai le chuang
Zhang San use blanket cover ASP bed
'Zhang San covered the bed with a blanket.'

In order to represent the type of LCS given in (40), Chinese must mark the resulting state overtly, as shown in (42).

(42) Zhang San yong tanzi gaizhu le chuang
Zhang San use blanket cover-complete ASP bed
'Zhang San covered the bed with a blanket.'

In the following sections, I will recast this observation by attaching the LCS structure to a syntactic structure. I will also argue that there is evidence that telic zero morphemes show the same range of behaviors that we have seen for the overt telic morphemes discussed above.

8.3.1 Zero Morphemes in X

Unlike Chinese, English allows the complex LCS shown in (38). What does this mean in terms of knowledge of lexical information. Following Hoekstra (1988), I propose that English gives the appearance of having roots that encode such an LCS only because English has a zero morpheme in the syntactic head that encodes the final state in a change of state. This morpheme, however, must be overt in the Chinese system. In other words, while English allows for the overt realization of telicity in X (as in (43b) below), it also allows for a zero morpheme in this position (as in (44)).[25]

[25] It may be more accurate to say that Chinese has optional telic morphemes like Malagasy for some predicates. It is also interesting that, in languages generally, it seems that Achievements must either overtly mark telicity (Malagasy, Chinese) or obligatorily encode it with the root (Bulgarian, English).

(43) a. The children hammered the nail (*in three minutes/√for three minutes).
b. The children hammered the nail flat (√ in three minutes/*for three minutes).

(44) a. * The teachers gathered the children but they didn't have time.
b. I built one house (√ in four months/*for four months)

As we have seen, Malagasy roots may or may not have the zero morpheme. This explains why an Accomplishment-type verb *can* mean completion but does not *necessarily* mean completion. However, an overt marker in the Asp position will ensure the telic reading, as shown in (45b).

(45) a. Nanorona trano anakiray (√tao anatiny efabolana
PST.*AN*.build house one (√ in four.months
/√nandritrin'ny efabolana) aho
/√for four.months) I
Lit.: 'I built one house (in four months/for four months).'

b. Nahaorona trano anakiray (√tao anatiny efabolana
PST.*AHA*.build house one (√in four.months
/*nandritrin'ny efabolana) aho
/*for four months) I
Lit.: 'I built one house (√in four months/*for four months).'

If telic zero morphemes can be posited for the X position, we can wonder about the two other positions that I have claimed house telic morphemes. I will look at each of these in turn.

8.3.2 Zero Morphemes in V_1

In trying to find telic zero morphemes in the V_1 position, we have to ask what sort of effects we might expect of such a morpheme. We have seen that in Bulgarian the morphemes in V_1 can target the beginning point of an event, and it is this characteristic that I will focus on here. It has been pointed out (e.g., Moens 1987, de Swart 1998) that English is able to shift an event type to fit a certain semantic environment. While leaving a longer discussion of coercion until later in this chapter, I give an example of this below. The sentence in (46a) is clearly an Activity, taking a *for*-adverbial. However, as (46b) shows, the same string can take an *in*-adverbial, implying that there is some designated point that occurs after three minutes—a point at which the singing begins. The same can be shown for stative verbs such as *hate* and *know* in (46c) and (46d).

(46) a. The children sang for three minutes.
b. The children sang in three minutes.

c. The children hated the play in three minutes.
d. The children knew the answer in three minutes.

The question is what allows Activities and States to appear in a construction that normally requires a telic event? Moens (1987: 45) proposes that there is some process that allows transitions between aspectual categories by adding "an extra 'layer' of meaning." De Swart (1998) introduces aspectual operators that map eventualities onto other eventualities. Sometimes these transitions and operators are marked overtly (the progressive in English maps an event into a state), but sometimes they are not marked overtly, as in (46b). These latter cases are considered to be cases of coercion. Going back to the examples above, for (46b), the point that occurs at the end of the time designated by *in three minutes* can either be the endpoint or the beginning point of the singing. With the two stative examples, the point is the beginning point of the hating or the knowing. I propose that there is a zero morpheme that facilitates the coercion discussed by Moens and de Swart. In the inceptive reading of (46b) and in (46c) and (46d), the zero morpheme would be similar to the overt *na*-morpheme that we saw in the Bulgarian example (12) and would appear in the V_1 position.

8.3.3 Zero Morphemes in Asp

Finally, let us look at the possibility that there are telic zero morphemes in Asp. To do this, I will consider a structure discussed by Haïk (1989). She investigates a construction in English that behaves, in many ways, similarly to the *aha*-construction in Malagasy. She presents a use of the verb *tell* which has (at least) two characteristics in common with *aha*-constructions: the external argument is a nonagentive cause, and the construction involves a change of state in the object. The canonical use of *tell* is given in (47a), while (47b) is an example of the other use. Example (47c) shows that the canonical use of the verb *tell* does not necessarily involve a change of (mental) state in the object, while (47d) shows that, with the other use of *tell*, a change of (mental) state *is* required.

(47) a. Bob tells me that winter is here.
b. All this snow tells me that winter is here.
c. Bob tells me that winter is here, but I don't believe it.
d. * All this snow tells me that winter is here, but I don't believe it.

One can think of the meaning of *tell* as having two possibilities. In the canonical use of the verb (see (47a)), the direct object is not necessarily sentient (see example (48a) below) though the subject is. This predicate describes an Activity of talking to (at) someone (something). The other use of the verb (as in (47b)) requires a sentient object (but not a sentient subject, as shown in (48b)) and describes a change in the mental state of the object caused by the subject.

(48) a. Bob told the statue that it was winter.
b. # All the snow told the statue that it was still winter.

Tell could be something like CAUSE BECOME √KNOWN. When this form is [+telic], the external argument would be a nonagentive Cause and when the form is [–telic], the external argument would be agentive.

I suggest that the second meaning is similar to the Malagasy atelic predicates since all that is necessarily encoded is an attempt to do something but not whether the attempt is successful. As in Malagasy, this form can enter into a different construction (in Malagasy, this would be the *aha*-construction), which entails the success of the action. Further, the external argument is now Cause rather than Agent. If this is the case, the similarities between the alternation in Malagasy and the alternation in English are indicative of a zero representation in English of morphology parallel to the Malagasy *maha-*. To strengthen this conclusion, more work needs to be done both on the typology of such verbs in English and cross-linguistic comparisons. I leave this for further study.

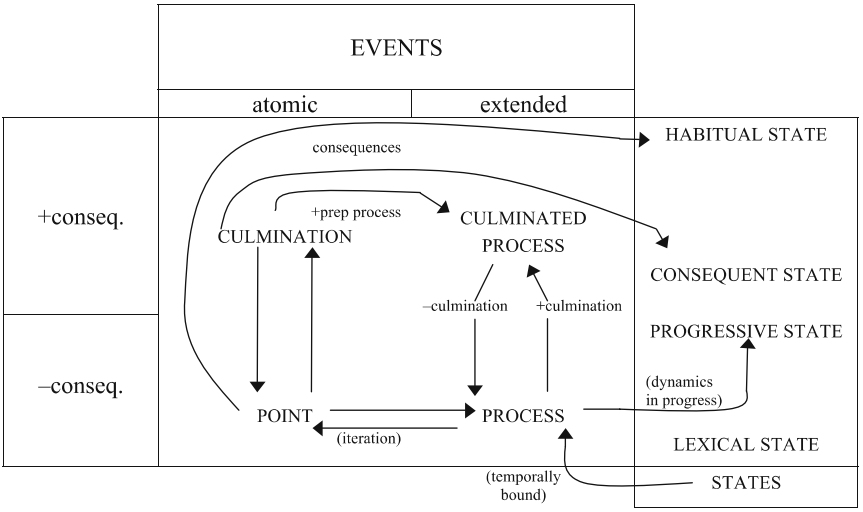
8.4 Coercion and Selection

In this section, I will continue the exploration of zero morphology begun above by looking specifically at the phenomenon of coercion. I will develop an idea presented in Moens (1987) and de Swart (1998) that the apparent fluidity of situation aspect involves a shift that is forced by the selectional properties of an aspectual modifier. I propose that these shifts are, in fact, the effect of null morphemes of the sort introduced in the previous sections of this chapter. I basically take Moens' and de Swart's observations and give them syntactic realizations through these empty morphemes. These proposals, then, set up the following section, in which I return to the cases introduced in Chapter 5 where viewpoint aspect appears to have an effect on the case marking of the object. In Chapter 5, we saw that, when viewpoint aspect affected the case marking of the object, the meaning of a predicate was also affected. Below I will argue that the selectional properties of the viewpoint aspect force the situation aspect to change, and it is the shift in situation aspect that changes the meaning of the predicate, which in turn affects the case marking on the object. Seen this way, we can preserve the claim that only VP-internal shifts can affect object case. This final section of the book is the beginning of what will eventually become a longer study. It sketches an answer to a question raised in Chapter 5 by combining notions of L-syntax from Chapter 6, phrase structure from Chapter 4, and positions of telicity from the present chapter.

Moens (1987: 45) shows the fluidity of the aspectual classes of a predicate very graphically. His observation is "... almost any verb can occur as almost any category ... by allowing the verbal expression to move around in the network, always adding extra layers of meaning or changing focus to other

layers of meaning." The schematic representation of this fluidity he gives is reproduced below.

(49) The aspectual network



To show how this works, we will take some examples from Moens (1987: 46).

(50) a. John played.
b. John played the sonata.
c. John played the sonata for a few minutes.

In (50a), we have an Activity (process) predicate.[26] By adding a culmination point in (50b), we now have an Accomplishment (culminated process). By adding the duration adverbial in (50c), however, we "strip off" the culmination point and have returned to the process reading. "What we are left with is a process of John playing the sonata, with no indication that John actually finished playing the sonata, and with the added information that this process lasted for a few minutes" (p. 46). On the network given above, we have moved from PROCESS to CULMINATED PROCESS and back again via [+culmination] and [–culmination] features. As Moens points out, there are other ways to go through the network. If instead of (50c) above we had (51), the last part of the route would be different.

(51) John played the sonata for about eight hours.

[26] Moens uses the term Process and not Activity and Culminated Process instead of Accomplishment. I will substitute Activity and Accomplishment since this is the terminology I use in this book.

Given what we know about the length of sonatas, the normal reading for this would be that John played the sonata repeatedly.[27] For this reading, each playing is seen as a POINT, and then the POINT is iterated, returning us to PROCESS. We can ask what triggers these transitions and how they are represented formally. Moens sees this type of coercion as being triggered by a selection process. We look at another example below (from Moens 1987: 47).

(52) a. Harry delivered a sermon.
b. Harry delivered that sermon for years.

We want to represent the fact that, by adding *for years*, we turn an Accomplishment, *delivered a/that sermon*, into an Activity via iteration. We do this by specifying that a duration adverbial can only combine with an Activity and that it forms a culminated process (Accomplishment). It is the selection process of the adverbial, then, that forces the predicate to move through the network.[28]

De Swart (1998), picking up on Moens' work, also sees coercion as the effect of selection. "Coercion ... is an implicit, contextually governed process of reinterpretation which comes into play whenever there is a conflict between the aspectual nature of the eventuality description and the input condition of some aspectual operator" (p. 349). She posits that, parallel to overt aspectual operators like PROG(ressive), there are covert aspectual operators and these covert operators can be used to account for coercion. Here, I simply propose a concrete realization of these covert operators as empty syntactic heads. I am inspired by her observation that coercion appears where the language has no explicit markers (from de Swart 1998: 359).

> The interpretation of aspectual operators as eventuality description modifiers builds on ideas developed by Moens (1987, 44f), and others... Transitions **for which a language has no explicit markers** are free as long as the content supports the meaning effects associated with the aspectual change. (emphasis added)

First she sets up a typology of eventualities that includes three types of eventuality (state, process, and event), and then she has supercategories such as HOMOGENEOUS, which includes states and processes, and DYNAMIC, which includes processes and events. Her system is outlined in the table below (de Swart 1998: 351).

(53) Eventualities and supercategories

HOMOGENEOUS		QUANTIZED
state	process	event
STATIVE	DYNAMIC	

[27] This is a simplification of the facts. It could be that there were no complete playings of the sonata and that John played bits and pieces of it for eight hours. This is similar to saying that there are apples in the salad when, in fact, there might only be pieces of apple and no one whole apple in the salad (see Borer 2005 for a discussion of this).

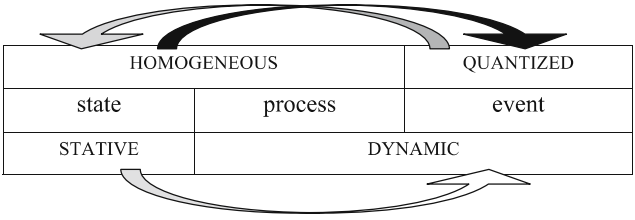
[28] As pointed out by both Moens and de Swart, coercion is subject to constraints set by the real world.

Just as overt aspectual markers may select types of eventualities and create types of eventualities, so can covert aspectual markers. The three covert aspectual markers that she posits are given below, where the subscript indicates what type of eventuality (or supercategory) is selected and what type of eventuality (or supercategory) is created. C_{eh} selects an event and produces a homogeneous eventuality, whereas C_{he} does the reverse by selecting a homogeneous eventuality (either a state or a process) and producing an event. C_{sd} selects a state and produces a dynamic eventuality. The examples given in the second column below are some details of meaning that might accompany this process. For example, one way in which an event can become homogeneous is by making it iterative or habitual or turning it into a process. Which of these meanings arise often depends on real-world knowledge of the type we saw above concerning the length of sonatas.

(54) a. C_{eh} (ITER, HAB, PROC . . .)
b. C_{he} (BOUND, INCHO, ADD-CUL . . .)
c. C_{sd}

While de Swart shows a mapping between supercategories and event types, it is tempting to assume that the relations are always between supercategories, as shown with the arrows below. Homogeneous eventualities can be coerced into quantized eventualities (as in (54a)) and vice versa (as in (54b)). Stative eventualities can be coerced into becoming dynamic eventualities (as in (54c)).

(55) The paths of coercion



We can even take this further: since supercategories, as we have seen in Section 4.4.2, are often defined by features, it is tempting to see this selection output process as the selection of one feature and the shifting of it to another feature. Speculatively, I will assume that this is the right direction to take. In the following sections, I outline how such a system would work. I have three goals. First, I want to show that coercion can be represented by the selection of particular heads that are represented by zero morphemes in some languages and overt morphemes in others. Second, I want to use this system to return to an issue raised in Chapter 5: the fact that both situation aspect and viewpoint aspect appear to have an effect on case assignment. By using a selection version of coercion, I argue that case is only affected by situation (L-syntax) aspect and not by viewpoint (S-syntax) aspect. Finally, using ideas from Carter (1976), I

argue that some shifting between aspectual predicate classes clearly occurs in the L-syntax and, as such, must involve continued access to the lexicon.

I will first outline my view of coercion by translating some of de Swart's examples into the syntax that I am using. One of de Swart's examples will be particularly useful as it has much in common with the constructions that I shall investigate in the next section.

De Swart's prime example of coercion comes from the interpretation of the French Imparfait as compared to the Passé Simple.[29] She points out that while, in the unmarked case, States in the past appear in the Imparfait, they may appear in the Passé Simple with a shift in meaning. Some of the examples she gives are reproduced below (de Swart 1998: 367, 370).

(56) a. Anne était triste
Anne was-IMP sad

b. Anne fut triste
Anne was-PS sad

c. (Soudain,) Jeanne sut la réponse
(Suddenly,) Jeanne knew-PS the answer

The constructions in (56a) and (56b) are both possible but (56b) is given an inchoative reading. This is clearer in (56c), where the adverb *soudain* 'suddenly' highlights the change of state. In her analysis, the Passé Simple and the Imparfait are not themselves aspectual modifiers. However, they are what she calls "aspectually sensitive tenses." The Passé Simple selects a quantized expression and the Imparfait selects a homogeneous expression. When combined with a predicate of the wrong type, a coercion operator is required to resolve the aspectual conflict. De Swart's representation of (56c) is given below, where the coercion operator is necessary to mediate between the needs of the Passé Simple and the properties of the predicate 'know the answer'.

(57) [PAST [C_{he} [Jeanne know the answer]]]

To explain the appearance of the coercion operator, she writes "French does not have a morphological marker for inchoativity, but the value of INCHO may be triggered by a combination of a state and the Passé Simple [(56c)] in the presence of an adverb like *soudain* 'suddenly'" (p. 370).

Translating de Swart's analysis into a syntactic representation is fairly straightforward but, within the context of the issues being addressed in this book, some details must be added. My interest is in whether the coercion operators are part of the L-syntax (below E) or the S-syntax (above E). I argue that they are part of L-syntax and therefore part of situation aspect (Aktionsart) rather than viewpoint aspect (grammatical aspect). First I will give semantic

[29] We have seen similar examples from Spanish in Section 5.1.2.

reasons for moving in this direction, and then I will sketch the syntactic account that captures these observations.

8.5 Viewpoint vs. Situation Aspect

Using de Swart's work, we now have a specific view of coercion and we can return to a problem raised in Section 5.1.2. It appears that both viewpoint aspect and situation aspect can have an effect on the case-marking properties of the predicate. Both statives and imperfectives in many languages resist assigning structural case to their objects. Ideally, if Inner Aspect is more closely tied to situation aspect, and if case-assignment to the object is tied to the specification of Inner Aspect, we would like the link between case and situation aspect to be direct. If case appears to be dependent on the nature of Outer Aspect (viewpoint aspect), we want this dependency to be mediated by Inner Aspect (situation aspect). Furthermore, viewpoint aspect appears to have an effect on the situation aspect of the verb. The question is: can this view be simplified? One way of simplifying it is to use what we have learned in the previous section. As in de Swart's work, we will assume that empty elements mediate between an outer (higher) overt realization and an inner (embedded) element.

First, because we want to know where the empty element appears in the phrase structure, I will give two semantic reasons to believe that the empty head is part of L-syntax and therefore, given the conclusions reached in Chapter 6, should appear below E.

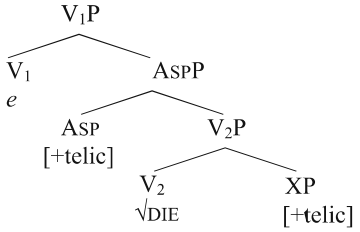
The first reason has to do with Carter's (1976) research. His question was, what is a possible word? In discussing this in Chapter 6, we found it necessary to distinguish between M-words and E-words. Clearly Carter's concern was with E-words. So, for example, an E-word can have only one Agent, one CAUSE, and one event, while M-words have no such restrictions. Moreover, E-words are contained within the L-syntax while M-words may well extend beyond this domain.

In English, *kill*/*die*, *look for*/*find*, *want*/*get*, and *know*/*meet* are pairs of distinct words in Carter's sense. In Chapter 6, we discussed lexical causatives, which in many languages use morphology to create pairs like *kill*/*die,* whereas English has two distinct words. I argued there that such morphology is part of the L-syntactic domain. In Chapter 7, we saw that Malagasy uses morphology to create pairs like *look for*/*find.* Again, English uses two distinct words for the members of the pair and we can apply the same argument to claim that the Malagasy morphology must be part of L-syntax. At present we will be looking at similar pairs: *want*/*get* in Scots Gaelic and *know*/*meet* in Spanish. Other things being equal, we would expect the same argumentation to be relevant. We can assume that what would distinguish them must be listed in the L-syntax part of the lexicon. This means, then, that just as the additional meaning of CAUSE in *kill* and the endpoint in *find* are added to *die* and *look-for,* respectively, in the L-syntactic domain, so must the inchoative meaning in *get* and *meet* be added in the L-syntactic domain to *want* and *know,* respectively.

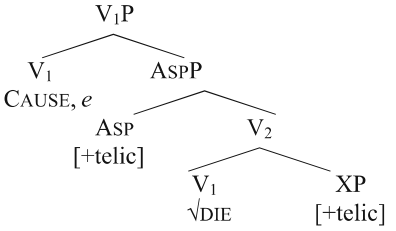
A sketch of the structures under discussion is given below where the [+telic] value in Asp is computed from the material in its complement. *Kill* differs from *die* in that the specification of the V_1 of *kill* contains a CAUSE. *Find* differs from *look for* in two ways: Asp is [+telic] and V_1 is a state. *Meet* also differs from *know* in two ways: Asp is [+telic] and V_1 is eventive.[30] More work needs to be done to predict why these changes co-occur, but the structures give an idea of the relevant distinctions.

(58)

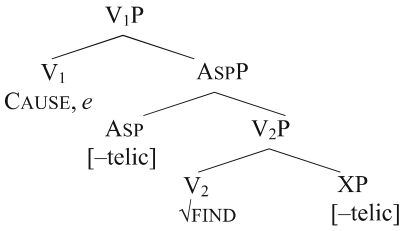
a. *die*



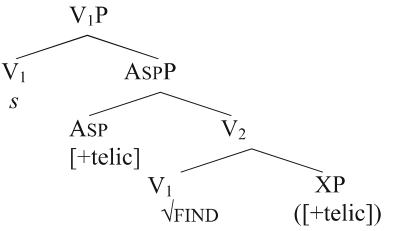
b. *kill*



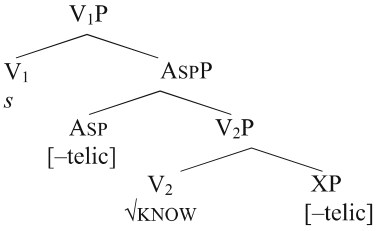
c. *look for* (*mijery:* MALAGASY)



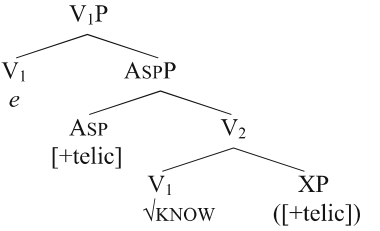
d. *find* (*mahajery:* MALAGASY)



e. *know* (*conocía:* SPANISH)



f. *meet* (*conocí:* SPANISH)



[30] As we saw in Section 5.1.2, Ramchand (1997) prefers to use the Scots Gaelic root *iarr-* (underlying 'want' and 'get') rather than trying to find an English translation that encodes what is common to both uses. Similarly, I am hesitant to use roots like FIND and KNOW for the representations given here. As a reviewer pointed out, one can find without looking. The correlation is imperfect in the way we would expect it to be in L-syntax (like *sabog* 'explode' and *pagsabog* 'scatter' in Tagalog).

Another reason to suspect that the coercion zero morphemes are added in the L-syntactic domain is that we saw that separate E-words resist zero realization, while L-syntax morphology often has a zero realization. English has a lexical causative zero morpheme, but no language that I know of has a productive causative zero morpheme. Coercion morphemes by definition are non-overt, and therefore most likely part of L-syntax.[31]

The last reason comes from cross-linguistic evidence. Many languages have morphemes that encode a notion like inchoativity or starting point. For example, in Section 8.2.2 we saw the following Bulgarian form from Slabakova (2001).

(59) na-mraz-ja
PV-hate-1SG
'to start hating someone'

Na- is a preverb that is part of the L-syntax. It cannot productively be added to every verb form. Coercion, then, can simply be seen as the use of zero morphemes in one of the various heads within the VP. These heads have to be the ones that are accessible to the selectional requirements of elements outside of the VP, elements in Outer Aspect. Because of the nature of selection, I assume that these are V_1 and ASP. V_1 is visible as the highest head in the complement position. ASP is visible as the closest event-related category. Given that the features necessary for the determination of the Aktionsart class of a predicate are located in these two heads—Process in V_1 and telicity in ASP—we can see how the shifts through the network sketched by Moens can come about.

Let us now look at some ways that this view of coercion can be put to use. My particular goal is to show how this view of coercion can be used to keep all aspectual case changes linked only to situation aspect, that is, Inner Aspect. We will start with a straightforward example from Scots Gaelic. We have seen that perfective aspect is linked to direct case assignment. The relevant examples are repeated from Section 5.1.1 (Ramchand 1997: 51–52).

(60) a. Bha Calum a'faicinn **a'bhalaich** PAST PERIPHRASTIC
be-PAST Calum *AG* see-VN boy-GEN
'Calum saw the boy.'

b. Bha Calum air **am balach** (a) fhaicinn PAST PERFECT
be-PAST Calum *AIR* the boy-DIR *A* see-VN (PERIPHRASTIC)
'Calum had seen the boy.'

[31] De Swart mentions coercion within the nominal domain as well, giving examples such as *many/few apples* vs. *much/little apple* and *much/little beer* vs. *many/few beers*. Just as V_1 can give a shape to an event, so can N_1 give a shape to a nominal (much like a classifier). Most likely the type of verbal coercion I outline here can be extended to the nominal domain.

We also know that there is a constraint on the appearance of nondynamic predicates with perfective aspect. As we saw in Section 5.1.2, this caused the following shift in meaning (Ramchand 1997: 45).

(61) a. Bha mi 'ga chreidsinn PAST PERIPHRASTIC
be-PST I-DIR *AG*.he-GEN believe-VN (Ramchand 1997: 45)
'I believed him.'

b. Chreid mi e SIMPLE PAST
believe-PAST I-DIR he-DIR (Ramchand 1997: 45)
'I came to believe him.'

This shift in meaning is similar to the case of French presented in de Swart and to the Spanish example that we saw in Chapter 5, repeated below.

(62) SPANISH
a. Cuando estudiaba en la escuela, **conocía** muchas personas.
when study.IMP.1SG in DET school know.IMP.1SG many people
'When I studied at school, I knew many people.'

b. **Conocí** a Juan en 1980
know.PERF.1SG a Juan in 1980
'I met Juan in 1980.'

I propose a similar account. The problem, then, must be one of selection given the similarity of these examples. The perfective forms select a dynamic predicate. The mismatch between the stativity of 'believe' and the requirements of the perfective aspect is what forces the coercion. In terms of the structure proposed here, the selectional restriction of Outer Aspect will force V_1 to be of a certain type. Instead of being a stative V_1, it will be an eventive V_1. Scots Gaelic does not have overt morphology to effect such a change; therefore a zero morpheme will create the effect of coercion.

One can imagine a similar process happening in the case of the following English example:

(63) We are solving the problem.

As Smith (1991: 97) points out, to the extent that this example is acceptable, the event is describing the preparatory event leading up to the actual point of the problem being solved. In Ryle's terms, the event has been handed back to the player and taken away from the referee. This shift can be handled in a similar fashion as the previous example from Scots Gaelic. The progressive in English requires an event of a specific shape. It needs a process V_1. This will transform

the Achievement of 'solve the problem' into an Accomplishment by adding the DO/CAUSE zero morpheme in English to V_1.

The effect on ASP can also be seen. Frame adverbials require that ASP have the value [+telic]. This means that generally they cannot occur with Activities. However, we can also have coercion in these cases, as the following example shows:

(64) Mary ran in three minutes.

As has been pointed out earlier, there are two possible readings for this sentence if it is grammatical. Either we are measuring the time until the event started or we are measuring the length of a predetermined task. Both involve coercion or, as I am arguing, zero morphology. In this chapter, we have seen inception encoded in a variety of positions. Since only V_1 and ASP can be affected by coercion, I assume that there is a zero morpheme that may perform similarly to *na-* in Bulgarian, in which case it would appear in V_1. For the completed task reading, I assume that there is a zero morpheme that appears in the Inner Aspect position.

An example that is slightly more difficult to account for is the case of imperfective in Finnish, the first example given in the book. Why is it that the Finnish imperfective, clearly an example of Outer Aspect, has an effect on case assignment? Worse, the case assignment shift seems to be the only indication of the shift in morphology. The example from Chapter 1 is repeated below (from Comrie 1976: 8).

(65) FINNISH
   a. hän luki kirjan
      'He read the book.'
   b. hän luki kirjaa
      'He was reading the book.'

There is no change in the verb form, only a change in case. Here I return to de Swart's suggestion that there are two past tenses in French—Imparfait and Passé Simple—which have different selectional restrictions. In French, however, these two pasts also have different morphological realizations. In Finnish, the two pasts have the same morphological realization, and the only distinction is in the selectional restrictions. The imperfect past coerces the nature of ASP and thereby affects its case-assigning abilities.

At this point in the beginning stages of this new line of research, much of this argumentation must remain speculative but the direction of the research is clear. The hypothesis is that case shifts can only depend on VP-internal information and that any apparent influence from heads outside the VP must be mediated by selectional restrictions.

8.6 Conclusion

This chapter has put to work the VP structure that was developed in the earlier chapters of the book. The important claims made were (i) the articulation of the VP opens various possibilities for the realization of boundary points for an event, (ii) languages vary according to which of these positions are used overtly, and (iii) there is covert use of these positions in instances of coercion. More generally, it has pulled together various claims made throughout this book. In order to have the fine-tuning in place to even start this discussion, we need a VP structure that represents subparts of an event, we need an event-related head within the VP that is the point where Aktionsart is computed, and we need an interaction of the lexicon and syntax that allows a domain in which mechanisms are borrowed from syntax and idiosyncrasies are encoded in the lexicon. In this corner of the computational system—the corner that builds an event—we see creativity mixed with convention. Forcing this domain to be purely part of the syntactic component or purely within the lexicon does a disservice to the universal grammar's ability to combine components.

Chapter 9
Conclusion

9.1 Introduction

I have three intersecting goals in this chapter. One is to give an overview of some of the main ideas of the book, the second is to pull together several threads that run throughout it, and the third is to point to areas for future research. I present these in the context of four broad areas. The first is category type (lexical vs. functional), the second is the nature of theta-roles, the third is the nature of lexical entries, and the fourth is the nature of coercion. Each area is important to my main proposals and each one leads to future questions.

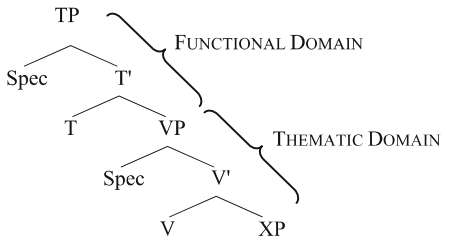
9.2 Lexical vs. Functional

The overall aim of this work has been to argue for a view of phrase structure that allows for an inner inflectional (functional) domain within the predicate. If this argument is to be successful, I have to convince the reader of three things: that the inner part is truly inflectional/functional, that it is surrounded by material that is truly lexical, and that all of this is encoded in syntax. Each of these three claims finds support in the current literature. I will review each one briefly. Proponents of the Minimalist Program view syntactic structure as the basic input to complex morphological items. Head movement creates complex syntactic structures, which are then spelled out in the phonological component, substituting lexical material for features on heads within this complex structure. There is also fairly widespread agreement concerning which morphological bits are deemed inflectional. For example, tense/agreement/aspect morphemes are inflectional. The notion of what a lexical (as opposed to functional) category is has become more controversial. When Abney (1987) discussed the distinction between functional and lexical categories, the difference was fairly clear-cut. He characterized functional heads as those that do not introduce arguments (e.g., T, C, and D). At that point, there was not much debate. In a Principles and Parameters-type structure, the different domains are clearly delineated. The

L. deMena Travis, *Inner Aspect*, Studies in Natural Language and Linguistic Theory 80, DOI 10.1007/978-90-481-8550-4_9,

simple tree below can be seen as encoding two domains that we can call the thematic domain and the functional domain in Abney's terminology.[1]

(1)



With only two heads, as shown in the tree in (4), the question does not arise as to whether one domain properly includes the other. The question also does not arise as to which domain dominates the other. For a while, with the articulation within these domains, the boundaries remained clear-cut. McCloskey (1997), in an overview of phrasal architecture and the division between lexical and inflectional material, states that ". . .the inflectional layer is held to properly contain the lexical layer."[2]

Hale and Keyser (1993, 2002), while partially responsible for increasing complexity within the VP, still had a view in which this complexity did not include functional categories. L-syntax was the domain of the VP, it characterized a lexical entry, and it was the "repository of irregularities." Crucially for Hale and Keyser, this domain did not include functional categories.

The controversy arises with the addition of heads such as v (voice), which is V_1 in my structures. Is this category lexical or functional? If it is lexical, then any functional items merged into the structure below it truly constitute an inner inflectional domain. If it is functional, then all we have established by positing an Inner Aspect position is that the functional domain starts quite low and simply includes v.

Reviewing Chomsky's reasons for considering v to be a functional category at the start of the Minimalist Program (Chomsky 1995), we can see that the motivation is theory-internal. Having no interpretive value, AGR_O was removed from the syntactic structure and v was assumed to host the features responsible

[1] Others, such as Grohmann (2003), divide the basic sentential structure into three parts: the thematic layer (VP), the agreement layer (TP), and the discourse layer (CP).

[2] To be fair to McCloskey, he was only discussing the status of the subject as the argument that asymmetrically c-commands all the other arguments, and this follows from the subject's position within the inflectional domain (and the position of the other arguments within the lexical layer). One can imagine applying the same logic to the direct object. If there is an internal inflectional layer that contains the direct object, we would expect the direct object to asymmetrically c-command all those arguments that remain within the inner VP. This is the position taken in this book.

for accusative case (and movement in Object Shift constructions). Chomsky proposed that only nonsubstantive (i.e., functional) categories could host strong features; therefore, v was assumed to be nonsubstantive. Even within the same theory-internal terms, the structure that I am proposing would be well formed. In my structure, ASP hosts the accusative case feature, and ASP is indeed functional. Chomsky is only forced to assume that v is functional because of its role in triggering movement of the object.

I return now to my reasons for assuming that V_1 is lexical rather than functional. In many ways, I use quite traditional notions of "inflectional" and "lexical" borrowed from the earlier literature. There are two criteria in particular that I use to determine the status of a head. If this head introduces an argument (that is part of the theta-grid of the semantic head) into the structure, then it is lexical. As well, if this head is part of the idiosyncratic information of the lexical entry of the predicate, then I assume that it is a lexical head. This last claim unites three parts of Hale and Keyser's view of L-syntax. They assume that L-syntax (i) represents a lexical entry in that it (ii) contains what is idiosyncratic and it (iii) contains only lexical categories. They also acknowledge that some of their lexical entries have to be phrasal (such as serial verb constructions and inherent object constructions). What I add to Hale and Keyser's view is the positioning of functional material within these constructions. These functional heads differ from the lexical heads on either side of them in the expected ways. They are not part of the lexical entry, they add to its meaning in a compositional fashion, and they do not realize arguments from the theta-grid of the semantic head.[3]

9.3 Lexical Entries and Idioms

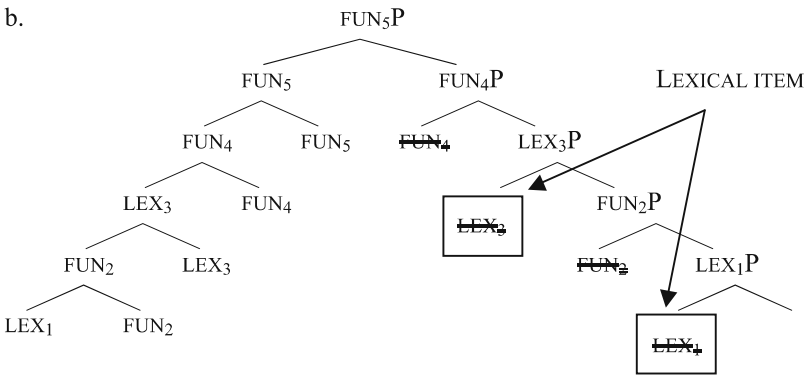
A complex issue now arises. How is this lexical entry encoded and how is it inserted into the structure? In Hale and Keyser's account, it is fairly simple since the lexical entry forms a unit. In my structure, because productive inflectional material is merged syntactically and interspersed with parts of the lexical item, the lexical entry is often discontinuous. I do not have a definitive answer to the question of how the lexical entry is inserted. At this point, I want to simply outline the problem and a potential avenue for a solution. In particular, I want to show two things: first, that this is not simply a morphological problem, and second, that lexical items of this type are not simply idioms. They may be idioms but idioms of a special type.

In discussions within this book, in particular about Navajo, Slave, and Tagalog, I have proposed that lexical items can appear as noncontiguous morphemes within a word. I describe this again below in a hypothetical template followed by a tree containing the same information.

[3] Recall, however, that I proposed in Chapter 7 that telic ASP in languages such as Malagasy and Tagalog can introduce a Cause argument.

(2) a. $LEX_1 + FUN_2 + LEX_3 + FUN_4 + FUN_5$

b.



A lexical entry consisting of two heads, LEX_1 and LEX_3, is generated in a tree with an intermediate functional head, FUN_2. Head movement creates the complex head appearing in the structure labeled FUN_5 in the tree above. It is not clear how narrow syntax could create such a structure or how Distributed Morphology (Halle and Marantz 1993) could interpret it. Both problems come down to the issue of idiosyncratic information being discontinuous. The only point I want to make here is that this is a syntactic issue, not a morphological one. The tree above suggests that the solution could lie in either component. However, if the same issue arises in languages that do not have head movement, then we would know that the problem has to be as early as narrow syntax. Serial verb constructions and inherent object constructions provide examples in which the same "lexical items" occur without head movement. The earmarks of lexical entries (i.e., idiosyncratic semantics and the introduction of arguments) are evident in these constructions, but the parts of the "lexical item" do not appear in the same head. These constructions are examples of what Hale and Keyser call "overtly phrasal lexical entries."

It is clear, then, that this idiosyncratic material has to be inserted by the syntax. This leads to the difficult question of how these lexical entries differ from idioms such as *kick the bucket, lose one's way,* and *throw one's hat into the ring*. More work needs to be done on this issue. I will just make some preliminary observations at this point. There is an obvious difference between the two kinds of idioms, but it is quite difficult to formalize. Lexical entries can only contain three positions in my view: V_1, V_2, and X.[4] All other positions in the tree will be open. This is not true of idioms. As O'Grady (1998) points out, the open

[4] In Inherent Complement Verb constructions, the nonreferential object may, in fact, take the place of V_2. This would be similar to Hale and Keyser's observations concerning unergative verbs like *laugh*. I depart from Hale and Keyser, however, in dealing with the complexity of elements such as *shelve*. Again I assume that *shelve* is in the place of a V_2, which explains why it can take a PP complement, as in *shelve the books on the windowsill*.

position of an idiom will often be the possessor of an object as in *throw one's hat into the ring, lose one's way, pull X's chain,* etc. Moreover, the idiom can extend from the verb to the preposition to the object of the preposition as in *throw X to the wolves* and *send X to the showers;* it may contain a subject as in *the fat is on the fire* and *the cat has X's tongue;* and it may contain a possessive as in *play the devil's advocate*. Furthermore, some idioms may change their parts slightly without changing their meaning, as in *pack a punch* vs. *pack a wallop*.

O'Grady proposes the restriction on idioms, given in (3).[5] First he adopts Baltin's (1989) view of licensing in which a head licenses the heads of its dependents. This licensing forms a chain, and the restriction on idioms is dependent on this notion of chain.

(3) a. The string $x \ldots y \ldots z \ldots$ (order irrelevant) forms a chain iff x licenses y and z, or if x licenses y and y licenses z.

b. *The Continuity Constraint*
An idiom's component parts must form a chain.

We might want to say that lexical items are very small idioms. V_1 would have to license V_2 and V_2 would have to license X. At first glance, however, given the tree I am proposing, viewing lexical entries as idioms violates O'Grady's constraint. V_1 does not select V_2 as its complement; rather, it selects ASPP. But ASP will never be part of the lexical entry. In other words, ASP would be an open position between V_1 and V_2, the two parts of the idiom. While this could be used as an argument against the proposed structure, a closer reading of O'Grady shows that he also bypasses functional heads in his chains. In the examples he gives, he explicitly states that the V licenses the N head of the object, and then the N will license the Det if the Det is also part of the idiom. In O'Grady's discussion, he explains that he is using an older version of phrase structure (where N rather than Det is the head of a nominal). Another way of viewing this, however, is that calculation of an idiom may jump functional categories.

I will assume, then, that lexical entries are, in fact, idioms—but idioms of a special type. What distinguishes them from other idioms is their restricted domain. In fact, their domain mirrors other phenomena that we saw in Chapter 6. Let us say, then, that lexical entries are L-syntactic idioms. They may contain all the lexical heads that appear within the L-syntax (that are not part of another extended projection such as DP arguments). In many ways, this is not a new idea; it is very similar to what Hale and Keyser first proposed. What needs to be developed, however, is why this type of idiom cannot extend to heads outside of the L-syntax domain, while other idioms may. It is this difference that prompted me to discuss in Chapter 4 the return to the lexicon when E is merged into the structure to retrieve E-words. I will leave more work on this for future research.

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[5] There are antecedents to this constraint on idioms that O'Grady mentions (e.g., Baltin 1989; Jackendoff 1983; Nunberg et al. 1994; Ross 1972).

9.4 Theta Roles and Aspectual Roles

One reason that the internal lexical domain is attractive is that there is now parallelism between structural case assigned to subjects (moving from Spec, VP to Spec, TP) and objects (moving from Spec, VP to Spec, ASPP). We can also use Larson's (1988) notion of an inner passive to account for double-object constructions. Hale and Keyser explicitly rule out Larson's movement account of double objects. One reason is that certain denominal verbs such as *saddle* must be derived from the double-object construction and a syntactic rule should not be able to feed their lexical representations. As mentioned earlier, I follow Kiparsky (1997) in assuming that denominal verbs in English are all merged into the structure in the position of V_2 and their argument structure is determined by the canonical use of the root (saddles are put on horses, corrals contain horses). The second reason why Hale and Keyser rule out a movement analysis of double-object constructions is the lack of functional categories internal to the VP. Given that I am proposing that there is an inflectional domain within the VP, this poses no problem for me. However, I still have to account for the fact that double-object constructions may have a slight change in meaning. This change of meaning was discussed in earlier chapters. I will address this question in more detail here, using ideas from Grimshaw (1990) to re-examine the notion of theta-roles.

Grimshaw proposes that there are two tiers of semantic analyses (following Jackendoff 1987, 1990). One tier contains the familiar theta-roles, while the other is the aspectual tier. Grimshaw uses these two tiers to explain the difference in the linking of arguments in psych predicates like *frighten* and *fear*. She claims both predicates have the same theta-roles but the Experiencer is more aspectually prominent for *fear* and the Theme is more aspectually prominent for *frighten*. Syntax will map the more aspectually prominent theta-role to a higher position. While I would have a different account of psych predicates, I suggest that we can use something similar for a variety of other phenomena, two of which I discuss here. One is the shift in meaning in the double-object construction and the other is the shift in meaning in certain unaccusative constructions.

9.4.1 Aspectual Theta-Roles in Double-Object Constructions

We have seen examples where there is an added meaning in a double-object construction. In the situations described in (4a) and (4b) Mary is the teacher, the children are the students, and French is the subject of instruction. In (4b), however, we have the additional information that the teaching was successful and the children learned French (or, in terms of possession, the children came to have French).

(4) a. Mary taught French to the children.
b Mary taught the children French.

We can see similar effects in SPRAY/LOAD constructions. In both (5a) and (5b) below, we have basically the same theta-roles. The workers are doing the loading, the hay is being moved, and the cart is the goal of the movement. In (5a), however, we have the additional information that the hay has all been loaded (but that the cart might not be full) and in (5b) that the cart is full (but that the hay might not all have been loaded).

(5) a. The workers loaded the hay onto the cart.
b. The workers loaded the cart with the hay.

The participatory role of the arguments has not changed in each case. What has changed is the aspectual role assignment. Sometimes the Theme is being affected (and measuring the event), sometimes the Goal. One way of viewing this is that the theta-roles, determined by the merged positions, remain constant across these constructions. The aspectual roles, which are determined by movement of the relevant arguments to Spec, ASP, change. As with other aspects of meaning, part is determined by merged positions and part by derived positions.

9.4.2 Aspectual Theta-Roles in Unaccusative Constructions

Viewing semantic tiers in this way might solve another problem—one that arises in lexical causative alternations. Many of the alternations found in Malagasy verbs are problematic in that the causative form does not entail the unaccusative form. A typical example is given below.

(6) a. Nanitrika ny ankizy/ny kilalao aho.
PST.*AN*.hide DET child/DET toy 1SG
'I hid the child/the toy.'

b. Misitrika ny ankizy/ #ny kilalao.
PST.*I*.hide DET child/ #DET toy
'The child/#the toy hid.'

In each case, the situation being described in (6a) and (6b) is one in which the Theme is going to a hidden position. There is additional information in (6b), however, since the Theme must be doing this on its own. Since this is not possible for a toy, the sentence is nonsensical. Viewed in terms of theta-roles and aspectual roles, the theta-roles remain the same in both situations; what changes is that the subject in (6b) has an additional aspectual role as the initiator of the action.

My interest in these phenomena has to do with my hypothesis that shifts in meaning do not necessarily indicate a difference in theta-roles. The additional

meaning, in my view, is indicative of a different aspectual role, one that is encoded by a post-movement configuration. To properly explore this, much more needs to be done to correlate the relevant literature with a range of constructions from a variety of languages.

9.5 The Nature of Coercion

I ended the last chapter with a speculation about coercion. The view of coercion that I described brought together many of the proposals presented throughout this book. The goal was to maintain a tight connection between object case and Inner Aspect. Languages like Finnish where case on the object apparently signals a shift in Outer Aspect immediately pose a problem to this claim. I argued that the connection can be maintained once coercion is understood as a process of syntactic selection. This requires a few steps.

First, we know that Outer Aspect can select the shape of its complement. For example, progressive in English selects a durative event. This accounts for why progressive is generally bad when combined with a State or an Achievement. We also know that some complements can accommodate selectional requirements (i.e., be coerced). This accommodation involves changing the aspectual class of the predicate without any overt marking. For example, an Achievement can become an Activity to accommodate the selectional requirements. This is seen in the example below.

(7) a. They found the key. ACHIEVEMENT
b. They are finding the key. ACTIVITY

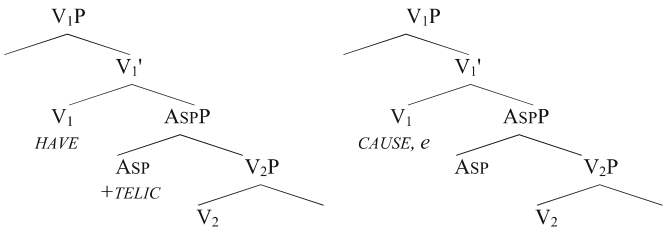
In order for (7b) to make sense, we must interpret *find* as actually describing the preparatory stage of finding.[6] The meaning, then, is closer to *looking for*. In many languages, shifts from one aspectual class to another are encoded overtly by means of morphology. I have suggested that many languages including English do this covertly, with zero morphology. Bringing this back to Finnish, I proposed that the change in case on the object is triggered by a (zero) Outer Aspect morpheme which selects a (zero) Inner Aspect morpheme. This change in Inner Aspect accounts for the lack of accusative case on the object.

While this solution is attractive because it captures the shift in aspectual class through the syntactic mechanisms that have been proposed in this book and creates a simpler view of objective case, it is also very powerful. To take the example above, in order to shift an Achievement to an Activity, given the structures I introduced in Chapters 4 and 7, V_1 must change from being stative to being eventive and from a non-argument-introducing head to an

[6] See Smith (1991) for a discussion of preparatory stages.

argument-introducing head. Moreover, ASP must change from telic to atelic. All of these changes are shown below.

(8) a. ACHIEVEMENT b. ACTIVITY



In a sense, Activities and Achievements are at opposite ends of the eventuality spectrum. De Swart's system of changing eventive predicates into homogeneous predicates or stative predicates into dynamic predicates was, on the surface, a simpler one. My reasons for not adopting it have only partly to do with my own theory-internal concerns. A more important question, however, is why languages that use overt morphology block such coercion. Treating coercion as the selection of zero morphemes places it within the same grammatical module as overt morphology and thus allows an interaction between the possibility of overt morphology and the resistance to coercion. More work needs to be done, however, on the range of coercion, and how it behaves in a wider variety of languages.

9.6 Further Questions

Making progress in analyzing phrase structure requires an understanding of multiple constructions in multiple languages. What some languages obscure, other languages expose. As discoveries are made, however, new questions arise concerning the universality of phrase structure and of categorial inventories. If a language does not show evidence of a particular syntactic head, what is the null hypothesis? Do we assume that this language does not have this head? In a way, this makes sense since it is not clear why a language learner would posit such a head if there is no evidence for it. But there is another way to view this. We could assume that languages are basically the same and that a language learner has a universal inventory of heads.

I assume the latter scenario. More specifically, I assume that all languages have articulated VPs. In some, the articulation can be seen syntactically (e.g., serial verb languages, inherent object languages). In others, the articulation can be seen morphologically (e.g., Malagasy, Tagalog). I also assume that all languages contain an Inner Aspect position. In some (e.g., Navajo, Slave, Malagasy, Tagalog), this head is morphologically overt. In others, this Spec is

a landing site for DP movement (e.g., Swedish and Nom3 languages). In many others, however, the evidence for Inner Aspect may be slight. The subtler the evidence, however, the more likely it is that languages universally have an Inner Aspect head.

The research presented in the preceding chapters raises many questions that need to be chipped away at through a combination of typological work, data work, and theoretical work. Only by combining these arenas of research can we begin to understand the universal mechanics of grammar.

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