

ASPECTUAL SCOPE AND CONTRAST IN ENGLISH AND JAPANESE

by

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Abstract

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This thesis presents a feature-based approach to aspect. I argue that both viewpoint aspect and lexical aspect are generated from the presence of functional properties that operate at three levels of syntactic structure: lexical, predicate, and clausal. The same aspectual feature has a different effect on the aspectual properties of the clause as a whole depending on the level at which it is active and the contrasts in which it participates. I illustrate this for English and Japanese, showing that a small number of syntactic features can capture the differences and similarities between the aspectual systems.

I propose that aspect in English is determined by two functional heads: Asp_Q , which encodes quantity (i.e., telicity), and Asp_A , which encodes atomicity (i.e., punctuality). Asp_Q may either be a root modifier, lexically encoding quantity, or head a separate functional projection within the vP system, where it is licensed by a quantized argument. Asp_A may also be a root modifier, lexically encoding atomicity; it may also appear in the inflectional domain, where it encodes clausal non-atomicity (i.e., imperfective aspect).

I propose that Japanese is like English in that Asp_A may be active at the root level; however, it differs from English in that Asp_A may also be active at the vP level, where it encodes the fact that the predicate is represented as a single unit. Japanese also differs from English in that it does not make use of the feature Asp_Q , meaning that Japanese has no quantity distinction, and makes use of the feature *State*, which heads a functional projection where light verbs such as *iru* ‘be’ are merged. Thus, the differences in the aspectual systems of English and Japanese are attributed to a few features that are active at different levels of syntactic structure.

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Contents

1	Overview	1
1.1	Introduction	1
1.2	Aspectual terminology	2
1.2.1	Lexical aspect	2
1.2.2	Viewpoint aspect	3
1.3	Goals of the thesis	5
1.3.1	Questions	5
1.3.2	Proposals	6
1.3.3	Languages under investigation	8
1.4	Outline	9
2	Aspect and Structure	10
2.1	Introduction	10
2.2	Clausal architecture	11
2.2.1	Distributed morphology	11
2.2.2	Functional domains: Infl and <i>v</i>	12
2.2.3	Contrast	18
2.2.4	Summary	20
2.3	Lexical aspect	20
2.3.1	Semantic properties of lexical aspect	21
2.3.2	Verbal properties of lexical aspect	23
2.3.3	Functional properties of lexical aspect	35
2.3.4	Proposal	44
2.4	Viewpoint aspect	49
2.4.1	Completion	50
2.4.2	Intervals and moments	51
2.4.3	Atomicity	60
2.5	Summary	63

3	Japanese aspect in the <i>v</i> domain	65
3.1	Introduction	65
3.2	Phenomena	66
3.2.1	Japanese verb classes	66
3.2.2	The meaning of <i>-te iru</i>	68
3.2.3	Other auxiliary constructions	71
3.2.4	Summary	75
3.3	<i>v</i> P	76
3.3.1	The markedness of states vs. events	76
3.3.2	The position of stativity	81
3.4	The structure of the <i>v</i> P	84
3.4.1	<i>v</i>	86
3.4.2	State	92
3.4.3	Asp _A	101
3.4.4	Interim summary	111
3.4.5	Stative potentials	113
3.4.6	Summary	130
3.5	Telicity	131
3.5.1	Nominal quantization	132
3.5.2	Predicate quantization	134
3.6	Summary	137
4	Extensions and Conclusion	138
4.1	Summary	138
4.2	Extension to other languages	139
4.2.1	Inuktitut	139
4.2.2	Russian	149
4.3	Further questions: Stativity	151
	Bibliography	153

List of Tables

1.1	Vendler’s (1957) verb classes	2
2.1	Verkuyl’s aspectual calculation	22
3.1	Kindaichi’s aspect table for <i>-te iru</i>	67
3.2	Possible positions of verbal elements	76
3.3	Summary of Japanese verb type distribution	80
3.4	Availability of auxiliary constructions	81
3.5	Halkomelem Salish diminutive marker	117
3.6	Individual-level properties denoted by stative potentials	118
4.1	Interpretation patterns of verb classes in Inuktitut	142

Chapter 1

Overview

1.1 Introduction

Aspect has been used as a blanket term to describe many different phenomena, all of which relate to the structure of eventualities, and the exact relations among these phenomena have been investigated extensively in the literature. However, these investigations have been somewhat hampered by imprecise terminology stemming from the use of real-world ontological categories as linguistic primitives. Additionally, it is difficult to tease apart the respective roles of syntax and semantics in aspectual interpretation. In this thesis, I bring together data from several languages (focusing primarily on English and Japanese) that show how the aspectual interpretation of a clause as a whole is calculated from aspectual properties at multiple levels of morphosyntactic structure.

My goal is to present the beginnings of a morphosyntactically based typology of aspect that accounts for the range of aspectual properties that Japanese and English display. I consider the manifestation of aspect at different levels of syntactic structure in order to isolate the aspectual properties of each level and consider the interaction between them. These levels include the clausal level, where grammatical distinctions of viewpoint aspect are made, the *vP* level, where the initiation and termination properties of a predicate are fixed, and the lexical level, where the inherent properties of a particular lexical item reside. I argue that features are active at different levels in different languages, yielding a range of possible aspectual types.

I begin this chapter with a discussion of the range of aspectual terminology used in the literature and the way that these terms will be used here. I then present the questions to be explored, my proposals for addressing them, and the outline of the rest of the thesis.

1.2 Aspectual terminology

Much of the terminology relating to aspect is used in various ways in the literature. Aspect is usually divided into two broad categories: lexical aspect (or *Aktionsart*) and viewpoint (or grammatical) aspect. Both of these categories deal with the representation of eventualities. Lexical aspect is the set of temporal properties (e.g., duration, initiation, termination, etc.) that define a particular eventuality, while viewpoint aspect is the representation of the internal temporal structure (or lack thereof) of a clause. In this section, I briefly introduce these categories of aspect and establish how I use the relevant terminology.

1.2.1 Lexical aspect

Lexical aspect is predicate classification based on the inherent temporal properties of verbs and other lexical items within a verb phrase. The eventuality type, or *Aktionsart* (literally, “type of action”), of a given predicate is defined from the values of certain temporal features. The best-known classification system is that of Vendler (1957), who defines four *Aktionsarten*: states (e.g., *Jennifer knows Geoff*), activities (e.g., *Malcolm is swimming*), accomplishments (e.g., *Owen ate a cookie*), and achievements (e.g., *John noticed the painting*). These four *Aktionsarten* are calculated from three properties that describe the way in which the eventualities take place: dynamicity (active vs. stative), telicity (inherent endpoint vs. no inherent endpoint), and durativity (occurring over a temporal interval vs. occurring punctually). The feature specifications of these four *Aktionsarten* are given in Table 1.1.

Table 1.1: Vendler’s (1957) verb classes

	States <i>know, love</i>	Activities <i>swim, run</i>	Accomplishments <i>eat a cookie, read a book</i>	Achievements <i>notice, forget</i>
DYNAMIC	–	+	+	+
TELIC	–	–	+	+
DURATIVE	+	+	+	–

According to this classification, states are non-dynamic, atelic, and durative; activities are dynamic, atelic, and durative; accomplishments are dynamic, telic, and durative; and achievements are dynamic, telic, and non-durative. However, the classification does not provide an account of how these temporal properties are encoded or derived within the predicate. It is well known that *Aktionsarten* cannot simply be lexically specified on the

verb, as the same verb can describe different types of eventualities in different contexts. For example, in (1) below, the lexical verb *eat* can describe either an accomplishment (a, c) or an activity (b), depending on the number and definiteness of the direct object:

- | | | | |
|-----|----|-------------------------------|-----------------------|
| (1) | a. | Owen ate a cookie . | <i>Accomplishment</i> |
| | b. | Owen ate cookies . | <i>Activity</i> |
| | c. | Owen ate the cookies . | <i>Accomplishment</i> |

A singular (1a) or definite (1c) direct object provides an endpoint for the eating event, thus making the predicate an accomplishment (i.e., [+TELIC]); when the direct object is plural and indefinite (1b), there is no inherent endpoint for the eating event, yielding an activity (i.e., [-TELIC]). Similarly, an activity verb phrase such as *push the stroller*, which describes an event with no inherent endpoint (as the direct object *the stroller* does not measure out the progress of the event), can be made an accomplishment with the addition of a prepositional phrase like *to the park*, which provides an explicit bound to the event (i.e., the event of pushing the stroller is completed once the park is reached).

Lexical aspect, therefore, is not a property of the verb itself; it must be calculated from the elements of the entire predicate, not just the verb alone. While Vendler’s classification system defines real-world ontological categories of eventualities — that is, it captures the possible ways in which real-world eventualities can potentially unfold — it does not provide any concrete way to map these eventuality properties to properties of predicates. In other words, Vendler’s *Aktionsarten* do not *a priori* reflect true grammatical categories. One of the goals of this thesis is to determine what the relevant properties of lexical aspect are and how they can be encoded morphosyntactically in different languages. In Chapter 2, I review some previous accounts of how lexical aspect is determined and establish the approach to be taken here.

1.2.2 Viewpoint aspect

While lexical aspect refers to the temporal properties of a predicate, viewpoint aspect pertains to an entire clause. Comrie (1976) defines viewpoint aspect as a way of “viewing the internal temporal constituency of a situation” (p. 3). An eventuality can either be viewed from inside (imperfective) or from the outside (perfective). While the imperfective aspect makes reference to the inner structure of the eventuality (e.g., *John was writing a letter*), the perfective aspect presents an eventuality as a single, undifferentiated whole (e.g., *John wrote a letter*). The representational differences between perfectives and imperfectives result in different grammatical behaviour. For example, Cowper (2005)

shows that when a clause acting as a temporal adjunct to a perfective clause denotes a perfective event, it is interpreted as sequential to the main clause (that is, it is represented as an atomic unit temporally situated before or after the main clause); when the adjunct clause denotes an imperfective event, the two events are interpreted as simultaneous (that is, the main clause is temporally situated within the adjunct clause):

- (2) a. When they reached the village, they stopped for dinner.
 b. When they were swimming, someone stole their camera.

(Cowper 2005, p. 6, her (6b) and (6c))

The perfective temporal adjunct *when they reached the village* in (2a) is interpreted as occurring prior to the event in the main clause, while the imperfective temporal adjunct *when they were swimming* in (2b) is interpreted as simultaneous with the event denoted by the main clause (i.e., the event denoted by the main clause occurs within the interval over which the event denoted by the temporal adjunct extends).

Smith (1991), in her discussion of viewpoint aspect, includes a category she calls neutral aspect, which she defines as “open but not unlimited” (p. 119). This means that a sentence may be interpreted as perfective or imperfective depending on context. Smith claims that the French simple future tense has neutral viewpoint aspect. (3) below is compatible with two distinct readings:

- (3) Jean chant-*era* quand Marie entr-*era* dans le bureau.
 Jean sing-FUT.3S when Marie enter-FUT.3S in the office
 i. ‘Jean will start singing when Marie enters the office.’
 ii. ‘Jean will be singing when Marie enters the office.’

(Smith 1991, p. 78, her (35))

Although the first interpretation of (3), in which Jean begins singing at the time of Marie’s entrance, is the preferred reading, the second interpretation, in which Jean is already singing when Marie arrives, is also possible. In other words, the internal structure of the singing event may or may not be accessible, depending on the context of the sentence.

While lexical aspect determines how an eventuality unfolds, viewpoint aspect determines whether the internal structure of the eventuality is accessible. Syntactically, viewpoint aspect operates at the sentential level (Verkuyl 1993; Cowper 2005; Borer 2005a, b; Travis 2010), while lexical aspect operates at the level of the verb phrase (Verkuyl 1993, Erteschik-Shir and Rapoport 2005; Borer 2005a, b, Travis 2010). There are different theories as to how properties of viewpoint aspect are encoded, as well as how viewpoint

aspect and lexical aspect interact with each other; in Chapter 2, I discuss these theories and present the framework I will adopt.

1.3 Goals of the thesis

The above discussion of lexical aspect and viewpoint aspect is largely pre-theoretical. In this thesis, I consider both lexical aspect and viewpoint aspect in terms of morphosyntactic features. In this section, I discuss the particular questions that this approach to aspect raises, the proposals to be presented and their implications, and the languages I use to consider these questions.

1.3.1 Questions

As mentioned in section 1.2 above, while the actual unfolding of eventualities in the real world is universal, the linguistic representation of these eventualities is not. The classification system proposed by Vendler (1957) is insufficient, even as a pre-theoretical construct, for capturing syntactically represented aspectual categories. For example, Kindaichi (1950) defines two classes of stative verbs for Japanese: regular statives (e.g., *iru* ‘be’) and stative potentials¹ (e.g., *sugureru* ‘be excellent’). While these classes are semantically similar in that they both denote unchanging properties, they differ syntactically in that stative potentials must always appear with an auxiliary, while regular statives can never appear with an auxiliary. The distinct syntactic frame in which stative potentials must appear indicates that they form a distinct syntactic class, which in turn suggests that Vendler’s classification does not capture syntactic categories. Even the categories of *state* and *event* as defined above by Vendler (i.e., dynamic eventualities vs. non-dynamic eventualities) are not universally expressed syntactically, even though this is a coarse and fairly intuitive aspectual division; the syntactic behaviour of predicates that denote real-world states and events is vastly different in different languages. Japanese, for example, only has a handful of stative verbs (Kindaichi 1976), which are restricted from several syntactic constructions available for eventive verbs, and has two distinct classes of predicative adjectives (verbal and nominal) that express states; in Inuktitut, on the other hand, there is a much larger inventory of stative verbs, and there is little syntactic difference between stative verbs and eventive verbs (except in terms of what kind of modifiers are permitted). Furthermore, even within a particular language, the same predicate can be interpreted as a state or as an event depending on the syntactic

¹This term was coined by Nightingale (1999).

context. In English, for example, predicates canonically interpreted as states, such as *be sick*, must be interpreted as eventive when they are imperfective, which is indicated in English with the progressive suffix *-ing* (Cowper 2005):

- (4) a. Hannah is sick.
 ≠ *Hannah is throwing up*
 b. Hannah is being sick.
 = *Hannah is throwing up*
 ≠ *Hannah is sick (i.e., she has a cold, the flu, etc.)*

While (4a) has a stative interpretation (i.e., Hannah has the property of sickness at the moment of speech), the fact that (4b) is imperfective means that it must be interpreted as an event (i.e., that Hannah is throwing up, an activity that is characteristic of sickness).

Again, these facts do not bear on the real-world properties of how eventualities take place, but on the representation of eventualities as linguistic objects. The fact that the English predicate *be sick* describes different eventualities depending on whether it is imperfective or not suggests that both lexical properties and syntactic properties are relevant in aspectual interpretation. If *be sick* is inherently a stative predicate, as (4a) indicates, how can it be interpreted as an event in the imperfective, as in (4b)? Conversely, if it is not inherently a state, why is it normally interpreted as one? If aspectual properties exist at multiple syntactic levels, how do these properties interact with one another within a particular clause?

As well, the significant cross-linguistic differences in the representation of aspect (such as the different syntactic behaviour of states in Inuktitut and Japanese, as mentioned above) raise the question of the extent to which the aspectual properties of languages can be parameterized. What is the cross-linguistic range of possible aspectual types? What predictions can be made about aspectual representation based on the properties encoded by a particular language?

1.3.2 Proposals

In this thesis, I use morphosyntactic features to encode aspectual properties, and exploit the principles of contrast (Dresher 2002, 2009; Cowper 2005) to start to generate an aspectual typology. According to contrast theory, a linguistic feature conveys different information depending on the contrasts in which it participates: the interpretation of a feature in a particular language depends on whether or not that feature has a possible dependent feature in that language. Looking principally at data from English and

Japanese, I argue that different languages make use of different inventories of aspectual features, resulting in a range of possible language types.

I assume, following Borer (2005a), Marantz (1997), and others, that morphosyntactic features are encoded in functional heads and that these heads may include, in some languages, information about the representation of eventuality structure (i.e., whether an eventuality is a state or an event, whether it is viewed as internally transparent or opaque, etc.). I also assume, following Travis (2010), Borer (2005b), and others, that aspectual features may be encoded on functional heads at two distinct syntactic levels: the clausal (Infl) level and the predicate (*v*) level. I propose that the interpretation of a particular feature depends on the domain over which it operates: a feature at the predicate level determines the representation of the eventuality itself, while a feature at the clausal level determines the representation of the proposition as a whole. Thus, the interpretation of a particular aspectual feature (for example, a feature that encodes eventiveness) would depend on (a) whether it was positioned at the Infl level or the *v* level, and (b) whether that feature participated in any contrasts in that language. The factors that dictate the interpretation of an aspectual feature therefore yield an aspectual typology: the inventory of aspectual features of a particular language and the syntactic levels at which these features are active determine the range of possible aspectual interpretations in that language.

I also consider the role of lexical items in the interpretation of aspect. I argue, following Wiltschko (2009a), that the encyclopedic meaning of a lexical item determines its possible categorizations. I argue that certain lexical items may be more or less flexible in terms of what types of concepts (i.e., properties, events, entities) they can denote. This flexibility dictates the felicity of a particular lexical item in a particular aspectual frame: for example, if a word must denote a concept from the domain of properties, then it will not be compatible with aspectual features that encode eventiveness. Thus, I show the extent to which lexical properties are a factor in determining the range of aspectual possibilities of a particular language.

In summary, I will argue for three principal claims: (1) Aspectual properties, which are featurally encoded in functional heads, are interpreted differently depending on the syntactic level at which they are encoded and on other features that are active in that language. (2) The encyclopedic meaning of a lexical item may render it semantically compatible or incompatible with a particular aspectual interpretation. (3) The interaction of these factors gives us a range of language types.

1.3.3 Languages under investigation

This thesis focuses primarily on the aspectual properties of Japanese, using English data for comparative purposes. Japanese, like English, has a relatively poor verbal inflection system; Japanese verbs lack person agreement altogether and temporally encode only past and non-past. Japanese is also similar to English in that predicates that describe events that are occurring at the moment of speech cannot be expressed in the simple present tense. Both employ an “ongoing” inflectional construction to describe events that are ongoing at the speech time: the English progressive *-ing* and the Japanese *-te iru* construction:

- (5) a. John runs (*right now).
 b. John is running (right now).
- (6) a. John-wa (*ima) hashi-ru.
 John-TOP (now) run-NONPST
 ‘John runs.’²
 b. John-wa (ima) hashi-tte i-ru.
 John-TOP (now) run-TE be-NONPST
 ‘John is running (right now).’

However, I will argue that the superficially similar systems of Japanese and English differ considerably in the features that they express: while English has aspectual features that operate at the clausal level, the predicate level, and the root level, Japanese only encodes aspectual features at the predicate level and the root level. I will also argue that English distinguishes accomplishments from other eventive predicates while Japanese does not.

In addition to Japanese, I also present some preliminary proposals about the aspectual systems of Inuktitut and Russian. Both of these languages have richer morphology than either Japanese or English. I argue that Inuktitut is similar to Japanese in that aspectual distinctions are made at the level of the predicate, while Russian is like English in that it has both a viewpoint aspectual distinction at the clausal level and a lexical aspectual distinction at the predicate level. The fact that these dissimilar languages show parallels provides support for the emerging aspectual typology presented here.

²Japanese is like English in that the non-past tense is used for generic, habitual, and future readings. The adverbial *ima* ‘now’ is compatible with the non-past tense with a near-future interpretation (i.e., “When does John run?” “He runs *right now*.”), but cannot be used to describe an event that is ongoing at the moment of speech.

1.4 Outline

The remainder of this thesis is organized as follows. In the next chapter, I establish the syntactic framework of my investigation; I present my theoretical assumptions, review the literature on lexical aspect (specifically, the respective contributions of lexical properties and syntactic properties to the calculation of *Aktionsarten*) and viewpoint aspect, and adopt a morphosyntactic framework that draws from Travis (2010), Hallman (2009a), Cowper (2005), Cowper and Hall (2012), Borer (2005a, b), and others. I primarily use data from English to justify this framework, in addition to the examples in the literature from other languages. In Chapter 3, I discuss the system of Japanese in detail. My principal claim is that the *-te iru* form encodes stativity at the predicate level, unlike the English progressive suffix *-ing*, which encodes internal accessibility at the clausal level. I also propose features that account for the various interpretations of the *-te iru* form and the distribution patterns of other Japanese auxiliaries. I conclude in Chapter 4 with a discussion of the aspectual systems of Inuktitut and Russian, comparing them to Japanese and English. The similarities between these systems indicate that the approach to aspect that I have taken in this thesis is worth pursuing further in order to develop a robust typology.

Chapter 2

Aspect and Structure

2.1 Introduction

I take a morphosyntactic featural approach to the representation of aspect. I begin with a discussion of the morphosyntactic framework to be adopted and a review of recent featural analyses of lexical and viewpoint aspect. First, I present my assumptions about clausal architecture and the series of functional heads that make up the *v* system and the Infl³ system. Next, I look at some recent analyses that treat aspect as a feature-based phenomenon, beginning with lexical aspect. I consider the different components of theories of lexical aspect, including semantic properties (Verkuyl 1993, 2002), verbal properties (Erteschik-Shir and Rapoport 2005; Borer 2005a, b), and functional properties (Borer 2005a, b; Travis 2010), as well as incorporating some recent work (Cowper and Hall 2012) on the nominal domain, which has been argued (Rijkhoff 1991) to mirror the verbal domain. Next, I turn to the representation of viewpoint aspect. I consider two ways of defining perfectivity: as completion (Kratzer 1998) and as duration (Cowper 2005; Kyriakaki 2006; Hallman 2009a); I propose that perfectivity is in fact best defined as atomicity. I discuss the merits and shortcomings of these analyses and present my approach to the study of both lexical and viewpoint aspect: specifically, I claim that features encoding atomicity and quantity (Borer 2005b; Verkuyl 1993, 2002), which may operate at various structural levels, are responsible for the range of aspectual possibilities.

³I follow Cowper (2005) in referring to the domain that encodes the temporal, aspectual, and modal properties of the clause as the Infl system. Although this domain is often referred to as T, I use Infl as shorthand for the multiple heads, including T, that make up the inflectional system. This also allows for cross-linguistic variation of the substantive content of the category, as proposed by Ritter and Wiltschko (2009), who argue that languages may use either tense, location, or person as the obligatory inflectional contrast of a clause. See section 2.2.2.1 below for further details.

2.2 Clausal architecture

I assume a minimalist approach to syntax following Chomsky (2000, 2008), wherein syntactic structure is projected by head features. In this section, I describe my specific assumptions within this overarching framework. First, following the non-lexicalist principles of distributed morphology (Halle and Marantz 1993), I place the derivational burden on the syntactic component rather than the lexicon, meaning that all levels of morphosyntactic structure are composed in the syntax. I further assume that Infl and *v* are both expanded domains made up of a series of functional heads, following work by Rizzi (1997), Cinque (1999), and others. Finally, I assume that functional heads are instantiated by morphosyntactic features (e.g., Halle and Marantz 1993; Chomsky 2000; Harley and Noyer 2000). Some of these features may be in dependency relations, which can be represented as a feature geometry (e.g., Cowper 2003, 2005).

2.2.1 Distributed morphology

In distributed morphology (henceforth DM), words are built in syntax by combining feature bundles in syntactic terminal nodes (i.e., morphemes) and associating these bundles with phonological material (i.e., Vocabulary items or VIs) morpheme by morpheme only after all of the features have been added. The phonological spell-out of a particular morpheme depends on the syntactic context in which it appears, and the spell-out of a syntactic structure does not occur until after the entire structure has been constructed.

The VI that is inserted into a particular functional morpheme is dictated by the Subset Principle (Halle 1997): VIs must spell out some subset of the features of the morpheme, and no features that are not part of the morpheme. If there are multiple VIs that meet this criterion, the item with the most features of the morpheme is selected, as illustrated by Sauerland (1995) in the following declension chart for Dutch adjectives and the corresponding VI listings:

(7) a. Dutch adjectives:

	[-NEUTER]	[+NEUTER]
[-PL]	-e	∅
[+PL]	-e	-e

b. VIs:

∅	↔	[__, +NEUTER, -PL] / Adj + __
-e	↔	Adj + __

(Sauerland 1995)

Both VIs are compatible with adjectives; however, \emptyset spells out the features [+NEUTER] and [-PL] while $-e$ does not. The Subset Principle ensures that \emptyset , the more highly specified item, is inserted in the context of neuter singular adjectives only, and that $-e$, which is underspecified, is inserted in all other adjectival contexts.

In this dissertation, I examine the range of possible aspectual features and the different ways in which they combine in different languages. The DM approach is useful in that it allows morphosyntactic features to be bundled into abstract morphemes in various ways, and for these morphemes to be spelled out only after all of the features have been added to the bundle. Thus, even languages that use the same aspectual features may bundle the features differently, resulting in different aspectual systems. DM also allows for the underspecification of VIs, which is harmonious with the principles of contrast theory; I discuss this further in section 2.2.3 below.

2.2.2 Functional domains: Infl and v

Although C, Infl, and v are often syntactically represented as single heads, there has been a great deal of work (e.g., Pollock 1989; Belletti 1990; Rizzi 1997, 2001; Cinque 1999, 2006; Cowper 2005) indicating that each of these heads corresponds to a more articulated structure. Following this insight, I use the labels C, Infl, and v as shorthand for three distinct structural domains: the left periphery, the inflectional domain, and the verbal domain.⁴

Pollock (1989) initially proposed the dissection of the IP into (at least) two separate heads as a way to explain the multiple relative orders of verbs, adverbs, and negation in French; an infinitival verb can optionally move from its base-generated position within the VP to a higher position between negation and an adverb, and a finite verb must move to a position above negation, as shown in (8) and (9) below:

- (8) a. ne pas complètement comprendre
 NEG not completely understand.INF
 ‘to not completely understand’
- b. ne pas comprendre complètement
 NEG not understand.INF completely
 ‘to not understand completely’
- c. *ne comprendre pas complètement
 NEG understand.INF not completely

⁴Note that, although I use v as a label for the series of functional heads that make up the verbal domain, I assume, following Marantz (1997) and others, that v is a verbalizing morpheme that takes a root as a complement. I discuss this further in section 2.2.2.2.

- (9) a. Il ne comprend pas complètement.
 he NEG understand.3S.PRES not completely
 ‘He does not completely understand.’
 b. *Il ne pas comprend complètement.
 c. *Il ne pas complètement comprend.

(Based on Pollock 1989)

Pollock argued that these different orders could be explained if we posit at least two separate Infl heads, X_1 and a lower head X_2 ; a finite verb obligatorily moves to X_1 from within the VP, and an infinitival verb optionally moves to X_2 from within the VP. This proposal that Infl is not a single functional head led to inquiries about the labels and roles of the distinct heads, and inspired a field of research about other non-lexical heads that make up the clause. The determination of the universal inventory of functional heads, their relative order, and how they are manifested in languages (i.e., the *cartography* of syntactic structures, in the terminology of Cinque and Rizzi 2008) is a field of study unto itself. This thesis seeks to add to this literature by discussing the functional heads that contribute to the determination of aspect in different languages, which are all within the Infl and *v* domains. I briefly discuss below the types of properties that make up each of these domains, focusing on the aspectual properties.

2.2.2.1 Infl

The IP is the domain in which the inflectional properties of a clause are encoded. Belletti (1990), following Pollock’s (1989) claim that Infl is made up of multiple heads, proposes AgrS, an inflectional head situated above tense that is the locus of subject-verb agreement. In later work (Belletti 2004), she argues for a further expansion of the IP domain, proposing that there are Topic and Focus positions situated directly above the VP based on data from Romance post-verbal subjects, thus claiming that the IP domain mirrors Rizzi’s (1997) articulation of the left periphery of the clause. However, the most prominent properties of the Infl domain are its temporal properties.

Cowper (2005) separates Infl into three different branches, reflecting three different inflectional properties: tense, mood, and (viewpoint) aspect. Although she does not represent these branches as separate structural projections (i.e., her structures do not explicitly have morphosyntactic “heads” corresponding to these properties), her DM approach and her observation that these properties can be realized separately (e.g., *was running*: *was* realizes past tense and *-ing* realizes imperfective aspect) indicate that the branches are not part of a single Infl head, but are separate heads within a larger

Infl system. The topmost feature encoding viewpoint aspect is Event, which makes a distinction between stative clauses and eventive ones. Among eventive clauses, a further featural distinction may be made between events that are associated with a moment (i.e., perfective viewpoint aspect) and events that are associated with a temporal interval (i.e., imperfective viewpoint aspect).

Like Cowper (2005), Travis (2010) also argues for a separate projection corresponding to the viewpoint aspectual properties of a clause. In her cartographic structure, the Outer Aspect projection is situated below Tense, and takes another functional projection, an Event Phrase (EP), as its complement. Outer Aspect encodes whether or not the event is completed with respect to the reference time (i.e., perfective/imperfective), and takes the entire event in its scope. The EP represents the outer edge of an event. Travis argues that E marks the edge of the domain of the lexicon, making the EP the lowest projection in the “purely inflectional” (51) domain. The EP also encodes the realis/irrealis distinction, in addition to theta-binding the event variable of the verb (in the sense of Davidson (1966)).

Structurally, the Infl domain is above the *v*P level, meaning that the predicate (i.e., the verb, the associated functional projections, and its arguments) is within its scope. This entails that viewpoint aspect always takes scope over lexical aspect, the consequences of which will be explored in this thesis.

2.2.2.2 *v*

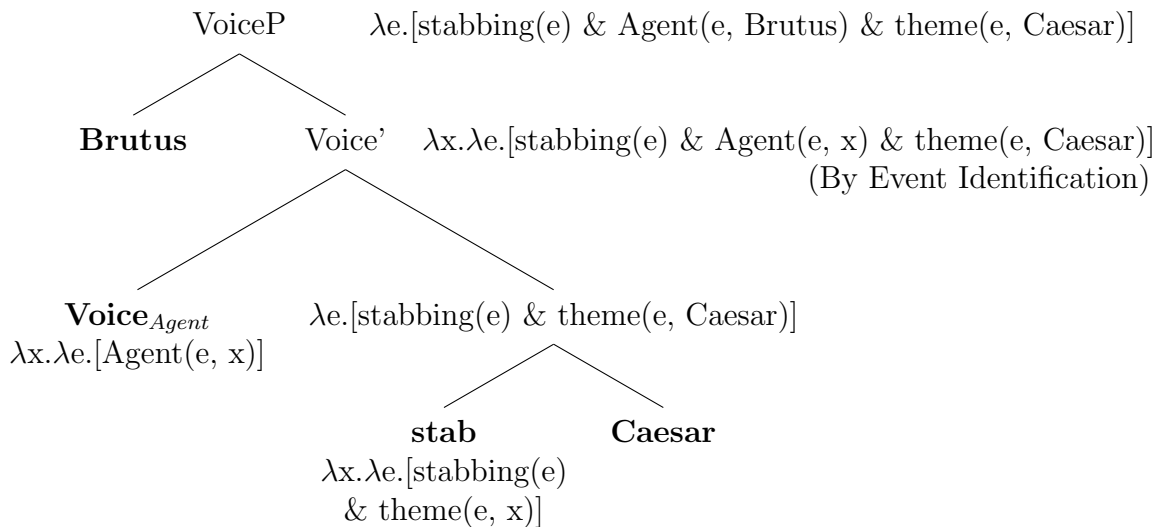
The *v*P presents a particular challenge as an expanded system, as it straddles the divide between the lexical and functional domains. In recent years, the *v*P has been expanded in various ways to accommodate theta-assigning positions for external arguments, such as Voice⁵ (Kratzer 1996) and Appl (Pylkkänen 2002, 2008; Cuervo 2003; Kim 2008, 2011). Internal arguments are also situated within the *v*P; in the traditional view, the direct object has a close syntactic relation with the lexical verb (i.e., either complement-head or, more recently, specifier-head), while in other recent approaches (e.g., Borer 2005a, b), direct object arguments are, like external arguments, introduced into the structure by functional heads. Finally, the *v*P is the locus of properties related to lexical aspect, which come both from the arguments and from the properties of the verb itself (as well as any modifiers that may be present in this domain).

Kratzer (1996), expanding on an observation by Marantz (1984), proposes that external arguments are not direct arguments of the verb (i.e., they are not in a close semantic or syntactic relation with the verb). Instead, they are merged in the specifier of a sep-

⁵This head is equivalent to Chomsky’s (1995) *v* head; following Kratzer (1996), I treat *v* and Voice as distinct, as described below.

arate functional projection, VoiceP, which combines with the verb phrase by means of Event Identification: the Voice head introduces a causation event, which is semantically identified as the same as the event denoted by the main verb (10a). The Voice head, therefore, adds a causation predicate to the event, and the argument of this causation predicate is merged into the specifier of the Voice projection (10b):

- (10) a. Event Identification: $\langle e, \langle s, t \rangle \rangle \langle s, t \rangle \rightarrow \langle e, \langle s, t \rangle \rangle$
 b. Brutus stabbed Caesar.

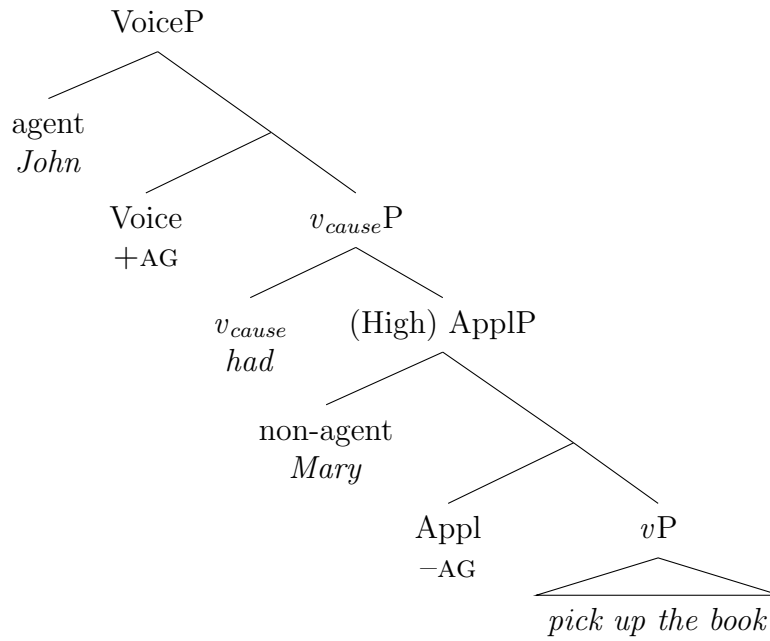


(Pylkkänen 2002, p. 13, her (10), based on Kratzer 1996)

This basic idea that external arguments are introduced by functional heads has been extensively explored in the literature, and different heads have been proposed to introduce arguments of different semantic types. Pylkkänen (2002, 2008) proposes that the applicative head Appl,⁶ which merges below the Voice head, adds an applied argument to the event described by the verb. Kim (2011) argues that these Appl and Voice heads are semantically distinct from each other in that Pylkkänen’s Voice is specified as agentive and Appl is specified as non-agentive. She also argues for an additional applicative head, which she calls *peripheral* Appl, that merges above Voice rather than below it. These two applicative heads are distinct from each other in that Appl introduces an object and peripheral Appl introduces a subject. Kim’s proposed syntactic configurations for these two applicative heads are shown in (11) and (12) below; *Mary* is a non-agentive argument in (11) and an agentive argument in (12):

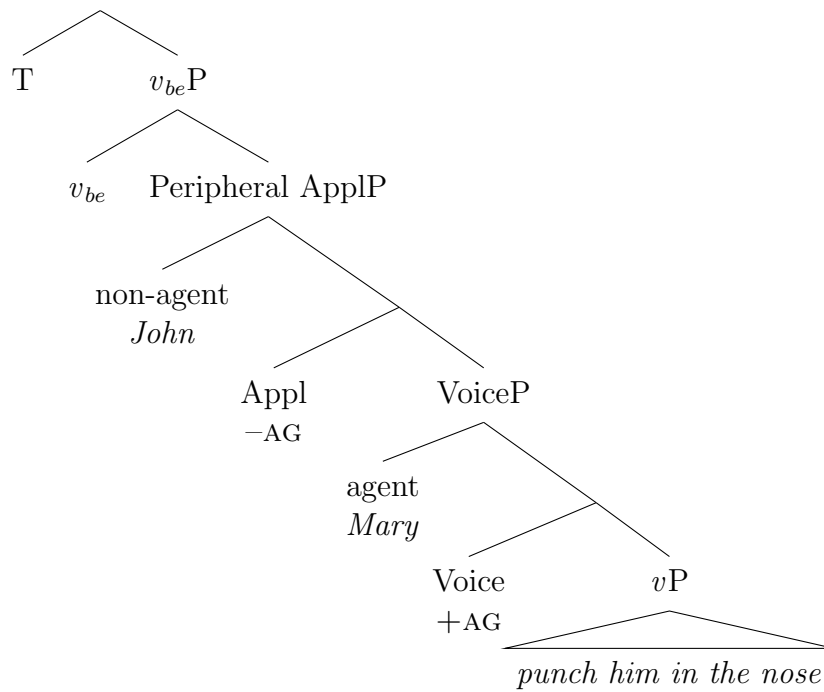
⁶Pylkkänen (2002, 2008) refers to this head as *high* Appl so as to distinguish it from *low* Appl, which encodes an applicative relation between two arguments (e.g., *Lucy gave Bill a present*) rather than an argument and an event (e.g., *Sylvia wrote with the pen*). As I do not discuss low applicatives in this dissertation, I refer to Pylkkänen’s high Appl simply as Appl, which is distinct from Kim’s (2011) *peripheral* Appl.

- (11) John had
- _{cause}
- Mary pick up the book.



(Kim 2011, p. 31, her (23))

- (12) John had
- _{exp}
- Mary punch him in the nose.



(Kim 2011, p. 77, her (47))

I assume that these external argument projections mark the upper boundary of the *vP* domain. They are the highest syntactic objects within the predicate; all higher projections encode information about the clause.

Internal arguments are also within the verbal domain; however, their exact structural position is a matter of some debate. The analyses described above in which external arguments are not verbal arguments explicitly assume that internal arguments are directly related to the verb; even though agents and applied arguments (e.g., instruments, benefactives, etc.) are introduced by functional heads, “inner subjects” (i.e., subjects of unaccusatives) are thought of as true verbal arguments that are essential to the verb’s core meaning (cf. Marantz 1984, 1997). However, Borer (2005a, b) takes Kratzer’s (1996) proposal further: she proposes that internal arguments, like external arguments, are assigned by functional structure. In other words, a verb is not lexically associated with a thematic grid; all arguments are brought in through the merging of functional heads. This, she says, explains why many verbs are compatible with a wide variety of argument structures, as shown below:

- (13) a. The fire stations sired throughout the raid.
 b. The factory sired midday and everyone stopped for lunch.
 c. The police sired the Porsche to a stop.
 d. The police car sired up to the accident.
 e. The police car sired the daylights out of me.

(Borer 2005a, from Clark and Clark 1979)

Borer points out that although all of the sentences in (13) above contain the denominal verb *siren* (i.e., emit a siren), they all display different argument configurations, meaning that we would need to posit multiple lexical entries for *siren* if the thematic grid were lexically associated with the verb. Furthermore, all of the sentences describe different types of events; for example, (13a) describes an unbounded activity of emitting a siren, while (13b) describes a point event of a siren noise as a signal. From this, Borer concludes that internal arguments, like external arguments, are introduced in functional projections, and that these functional projections also determine the structure of the eventuality (i.e., the *Aktionsart*).

The locus of event structure, like argument structure, is the *vP*. As mentioned in the first chapter, the interpretation of event structure is dependent on multiple factors, both lexical and structural. For example, in English, the number and definiteness of a direct object theme that measures out the progress of the event dictates the telicity of an event, as shown in the following examples repeated from Chapter 1. If the theme is

singular and/or definite, the predicate is telic (14a, c). If the theme is plural (or mass) and indefinite, the predicate is atelic (14b).

- | | | |
|------|----------------------------------|-----------------------|
| (14) | a. Owen ate a cookie . | <i>Accomplishment</i> |
| | b. Owen ate cookies . | <i>Activity</i> |
| | c. Owen ate the cookies . | <i>Accomplishment</i> |

In Borer’s framework, the direct object is merged into the specifier of a functional projection, which encodes whether or not it is a quantity object (as described in more detail in section 2.2.3 below). In contrast, in a framework where the direct object is an argument of the verb, the connection between definiteness and telicity would have to be made in some other way, perhaps through the copying/percolation of features associated with the direct object to the verb. In either case, however, the relevant domain of investigation for these issues is the *v*P.

Although I assume an expanded *v* domain made up of multiple functional heads (such as Voice and Appl), I will also refer to *v* proper, which, crucially, I treat as a categorizing head, following Marantz (1997) and Borer (2005a, b), along with *n* and *a*. Under this view, roots consist solely of phonological material paired with dictionary meaning and are devoid of any syntactic content. In other words, roots are not specified for lexical category in the lexicon, but are categorized when they combine with the category-defining heads *v*, *n*, and *a*. I treat *v* proper as the lower syntactic boundary of functional structure: it is the lowest functional head in a clause, and takes a root as a complement.

2.2.3 Contrast

I follow Cowper (2005) in assuming Drescher’s (2002, 2009) theory of contrast. Drescher’s work on the contrastive phonological feature hierarchy is based on the principle, previously noted by Trubetzkoy (1939), that a feature conveys different linguistic information based on the contrasts in which it participates. The interpretation of each featural node in a given language is contingent on whether or not that node has a dependent feature in that language: a bare node that has no possible dependent feature has a different interpretation than does the same bare node in another language, where it does have a possible dependent feature. The absence of a dependent feature that a particular language makes use of generates a contrasting default interpretation of its parent feature in that language. Suppose we have two languages, A and B, that both make use of a feature F_1 , and language A also makes use of a feature F_2 , which is dependent on F_1 . A bare F_1 node would therefore convey different information in language A than it does in

language B: bare F_1 in language A would convey “not F_2 ,” while bare F_1 in language B would not make this contrast.

The phonological contrasts used in a particular language can be determined using Drescher’s (2002) Successive Division Algorithm:

- (15) a. In the initial state, all tokens in inventory I are assumed to be variants of a single member. Set $I = S$, the set of all members.
- b. If the primordial allophonic soup is found to consist of more than one contrasting member, select a feature and divide the set into as many subsets as the feature allows for.
- c. Repeat step (b) in each subset: keep dividing up the inventory into sets, applying successive features in turn, until every set has only one member.

(Drescher 2002, p. 89, his (12))

In other words, phonological features are applied to phoneme inventories only as needed to distinguish sounds from one another. This means that the same sound would have different phonological feature representations in different languages depending on what features are necessary to distinguish the sound in each language. For example, Drescher (2009) points out that “...a phoneme /i/ in a three-vowel system /i, a, u/ would be an entirely different object from an /i/ that is part of a four-vowel system /i, e, a, u/” (p. 5). The vowels in the two systems would necessarily participate in different contrasts, and thus the phonological feature specifications for the phonemes would be distinct.

Cowper (2005) applies this principle of contrast to her morphosyntactic feature geometry. The interpretation of a particular morphosyntactic featural node depends on whether or not that node can have a dependent feature, meaning that the same feature can convey different information in different languages. For example, Cowper proposes that the morphosyntactic feature Precedence, which encodes the fact that at least one moment associated with the eventuality denoted by the clause is situated before the moment of speech, has the possible dependent feature Entirety, which encodes the fact that *all* moments associated with the eventuality denoted by the clause are situated before the moment of speech. She argues that Entirety is present in Spanish but absent in English, meaning that a bare Precedence node is interpreted differently in the two languages: a bare Precedence node in English is vague as to how much of the eventuality denoted by the clause is situated prior to the moment of speech, but a bare Precedence node in Spanish contrasts with a Precedence node with the dependent feature Entirety, and thus it implies that some part of the eventuality may not be situated prior to the moment of speech (i.e., that the eventuality may be ongoing at the moment of speech). While (16)

is compatible with Bill still being in Montreal or with his having left prior to the moment of speech, (17a) implies that Bill is still in Montreal (or, at least, that the speaker does not know for sure that Bill has left) in contrast with (17b), which is only felicitous if Bill is no longer in Montreal:

(16) Bill was in Montreal yesterday.

(Cowper 2005, p. 24, her (25))

- (17) a. Bill estaba en Montreal ayer.
 Bill be₂.IMPF.3SG in Montreal yesterday
 ‘Bill was in Montreal yesterday (and may still be there).’
 b. Bill estuvo en Montreal ayer.
 Bill be₂.PRET.3SG in Montreal yesterday
 ‘Bill was in Montreal yesterday (but has since left).’

(Cowper 2005, p. 24, her (26))

Adopting this principle, I make the following two assumptions in this thesis: (1) morphosyntactic features may appear in a hierarchy, with certain features being dependent on other features; (2) if a language makes use of a particular dependent feature, and that feature is absent in a given construction, its parent feature receives a contrasting default interpretation.

2.2.4 Summary

In this section, I have laid out the theoretical assumptions I adopt in this thesis. In summary, I assume that (1) morphosyntactic structure is built in the syntactic component; (2) lexical aspect is encoded within the expanded *v* system and viewpoint aspect is encoded within the expanded Infl system; and (3) the morphosyntactic features that instantiate functional heads may bear dependency relations to one another. Given these syntactic assumptions, I now turn to the manifestation of aspect within this framework.

2.3 Lexical aspect

The lexical aspect (or *Aktionsart*) of a given predicate is a classification of the particular type of situation that that predicate describes, and involves the properties of the verb and other syntactic objects within the *vP*. In this section, I consider how lexical aspect is instantiated in syntax. First, I discuss the semantics of lexical aspect (Vendler 1957; Verkuyl 1993, 2002) in order to illustrate the types of properties that make up the lexical

aspect of a predicate (2.3.1); these properties come from both the lexical semantics of the verb itself and the properties of the arguments. Next, I consider how these properties manifest themselves in the syntax; how do the semantic properties of lexical aspect relate to syntactic structure? I begin with the contribution of the lexical verb to the calculation of lexical aspect (2.3.2): I discuss the disparate analyses of Borer (2005a, b), who claims that the verb makes no contribution to lexical aspect (2.3.2.1) and Erteschik-Shir and Rapoport (2005), who claim that the lexical semantics of the verb map directly to the syntax (2.3.2.2), and propose that the contribution of the lexical verb is between these two extremes (2.3.2.3). Next, I discuss the contribution of functional projections to the determination of lexical aspect (2.3.3): both Borer (2005b) (2.3.3.1) and Travis (2010) (2.3.3.2) propose functional heads within the *v*P that encode lexical aspect directly. I conclude this section with the proposal that features encoding atomicity and quantization are active in the English *v*P, and that these features determine the lexical aspect of a predicate (2.3.4).

2.3.1 Semantic properties of lexical aspect

While most studies of viewpoint aspect have always been grounded in syntax, much of the work on lexical aspect has historically been semantic rather than syntactic. Vendler's (1957) seminal eventuality classification system treats *Aktionsarten* as combinations of semantic properties (dynamicity, telicity, and durativity) that are for the most part lexically specified on the verb: as summarized in Table 1.1 in Chapter 1, states are non-dynamic, atelic, and durative; activities are dynamic, atelic, and durative; accomplishments are dynamic, telic, and durative; and achievements are dynamic, telic, and non-durative. Verkuyl (1993, 2002) also presents a semantic feature-based account of lexical aspect that uses features similar to Vendler's; his approach to aspectual classification, however, is radically different. Indeed, Verkuyl (2002) rejects the notion of aspectual classification altogether, claiming that classifications "...lure linguists into doing ontology rather than linguistics" (p. 205). In other words, he argues that it is meaningless to discuss lexical aspect outside of the context of a particular predicate; lexical aspect can only be calculated once all of the properties of the entire verb phrase have been considered. There are two relevant features:⁷ [\pm ADD TO], which is lexically specified on the verb, and [\pm SQA], or specified quantity, which is a property of the arguments of the verb. Once the verb

⁷These features are shorthand for the formal logical representations given in Verkuyl (1993).

and arguments are semantically combined,⁸ these features yield an aspectual value of $[\pm T]$, or terminative/durative.

$[\pm \text{ADD TO}]$ is similar to Vendler’s dynamicity/stativity distinction; Verkuyl argues that verbs are lexically specified as either $[\text{+ADD TO}]$ (eventive) or $[\text{-ADD TO}]$ (stative). The property $[\pm \text{SQA}]$ encodes the ability of a VP to be measured out, and depends on its arguments: a $[\text{+SQA}]$ argument, such as *the apple* in *She ate the apple*, is specified for a particular quantity, while a $[\text{-SQA}]$ argument, such as *apples* in *She ate apples*, is not. The aspectual value of a verb phrase is then constructed from these two properties: if there is a negative value for either of the two features (i.e., $[\text{-ADD TO}]$ and/or $[\text{-SQA}]$), the verb phrase is durative, or $[\text{-T}]$, yielding predicates that correspond to Vendler’s (1957) states ($[\text{-ADD TO}]$, $[\pm \text{SQA}]$) and activities ($[\text{+ADD TO}]$, $[\text{-SQA}]$). If the value for both features is positive ($[\text{+ADD TO}]$, $[\text{+SQA}]$), the verb phrase is terminative, or $[\text{+T}]$, yielding an accomplishment or achievement (which Verkuyl calls *events*). These constructed aspectual values are shown in Table 2.1 below:

Table 2.1: Verkuyl’s aspectual calculation

	$[\text{-SQA}]$	$[\text{+SQA}]$
$[\text{-ADD TO}]$	$[\text{-T}]$ = <i>State (durative)</i>	$[\text{-T}]$ = <i>State (durative)</i>
$[\text{+ADD TO}]$	$[\text{-T}]$ = <i>Activity (durative)</i>	$[\text{+T}]$ = <i>Accomplishment/Achievement (terminative)</i>

Verkuyl explicitly argues against duration and culmination as features that contribute to lexical aspect. He uses the term “durative” to mean unboundedness (i.e., the lack of a means of measuring out an eventuality) rather than actual temporal duration; the opposite of a durative verb phrase in Table 2.1 above is thus not a punctual verb phrase, but a *terminative* verb phrase. Verkuyl considers the temporal duration of a particular eventuality to be semantically irrelevant. He argues that the same event can be described in different words using verb phrases of different Vendlerian aspectual classes; for example, *win*, which is typically considered a punctual verb, is synonymous with *appear as winner*, which is not. Thus, he says, there is no need to use event duration as a criterion in lexical aspectual type. Furthermore, he claims that culmination may be the logical consequence of an event reaching the end of its path (as defined by the feature $[\text{+SQA}]$), but it is epiphenomenal, and not specifically encoded in the semantics.

⁸Verkuyl (2002) refers to this level as S’, which he calls a “tenseless sentence” (p. 203). Given that he deals with semantic structures rather than syntactic ones, I do not discuss his proposed structures here.

Although a [+SQA] argument restricts an event, he says, there is no need to view this restriction as a culmination.

Although there are similarities between Vendler's (1957) and Verkuyl's (1993, 2002) proposed aspectual features in that both accounts take the semantic distinctions of dynamicity/stativity and bounded/unbounded to be paramount to the calculation of lexical aspect, Verkuyl explicitly argues against Vendler's classification system as a linguistic tool.⁹ Lexical aspect, Verkuyl says, is calculated from the values of the two features within the VP, which yield either a terminative predicate or a durative predicate.

The goal of this thesis is to investigate the structural manifestation of aspect. What, then, is the relation between these proposed linguistic *semantic* features of lexical aspect and the relevant *syntactic* features? I follow Verkuyl (1993, 2002) in assuming that lexical aspect is not a category label that can be applied to a particular verb; rather, it can only be calculated for an entire predicate from the various elements of the verb phrase. Thus, we must determine what syntactic features contribute to the calculation of lexical aspect and where they are encoded. In section 2.3.2, I discuss the contribution of the syntactic features of the lexical verb; in section 2.3.3, I turn to the functional projections within the *v*P and the properties of the arguments.

2.3.2 Verbal properties of lexical aspect

The role of the verb itself in the calculation of lexical aspect is difficult to ascertain. The possibilities range from a direct mapping of the lexical semantics of the verb to syntax, as proposed by Erteschik-Shir and Rapoport (2005), to the complete lack of any syntactic contribution from the verb, as proposed by Borer (2005a). In this section, I consider these two opposing theories of the contribution of the lexical verb to lexical aspect and propose that some verbs contribute to the *Aktionsart* of the predicate by merging a modifying feature (Wiltschko 2009b) with the projecting verbal head, along the lines of Cowper and Hall's (2012) approach to the mass/count distinction in the nominal domain.

2.3.2.1 Borer (2005a, b)

Borer (2005a, b) argues that there is no overlap between syntax and lexical semantics. She points out that English roots are grammatical in a wide variety of syntactic constructions, so long as they are pragmatically interpretable. She uses this as evidence that lexical

⁹Verkuyl (2002) points out that Vendler is not a linguist, but a philosopher; Vendler's classification system, while based on language data, reflects real-world categories rather than linguistic categories.

verbs have no effect on the grammaticality of a clause, indicating that they are devoid of any morphosyntactic information.

Borer (2005a, b) assumes a sharp separation of lexical and grammatical properties. She argues that lexical items contain nothing but a meaning and a phonological form, while grammatical meaning is stored separately in grammatical formatives, or f-morphs, which may be either overt functional items or feature bundles. Lexical items are merged into an intermediate syntactic structure, the lexical domain, as uncategorized elements, and take on grammatical properties only when they are merged with functional heads. In other words, a lexical element like *sing* only becomes a verb when it is selected by a functional element that can semantically value it as such (which, for Borer, is T); it enters the syntactic derivation as a completely opaque lexical item. Thus, in Borer's theory, the verb itself contributes nothing whatsoever to the syntactic determination of aspect. This, she claims, is why a single lexical item can appear in many different syntactic configurations, as shown in (13) above, repeated here as (18):

- (18) a. The fire stations sired throughout the raid.
 b. The factory sired midday and everyone stopped for lunch.
 c. The police sired the Porsche to a stop.
 d. The police car sired up to the accident.
 e. The police car sired the daylights out of me.

(Borer 2005a, from Clark and Clark 1979)

Borer claims that if a verb is unacceptable in a particular syntactic frame, it is because the verb's conceptual meaning is incompatible with the interpretation of the grammatical structure. That is, a sentence like *Bob sired the flowers* is unacceptable not because of any syntactic constraints on the verb *siren*, but because the encyclopedia cannot assign the sentence a pragmatically sensible interpretation.¹⁰

Although Borer makes the important point that roots are remarkably flexible (as the striking paradigm in (18) shows), she creates a false dichotomy between lexical items and functional items by asserting that roots contain no syntactic information whatsoever. Her strict division between the lexical and functional domains entails that all verbs

¹⁰Although I judge this sentence as odd, it is in fact crucial for Borer (2005a) that sentences like these are acceptable given appropriate context. Borer (2005a) cites the sentence *The red under fived lunch*, given by Harley and Noyer (2000) as an example of *unacceptable coercion*, and claims that native English speakers are in fact "...perfectly capable of assigning an interpretation to it (e.g., some creature with some 'bottom'-related properties, for example, a bottom dweller, which is red, ate lunch five times; multiplied its lunch by five; divided its lunch by five; etc.)" (p. 6). I find these interpretations very difficult to get; however, her point is that lexical items, at least in English, are for the most part extremely syntactically flexible.

(i.e., all roots that are verbalized in the appropriate syntactic context) are syntactically identical. However, some verbs are grammatical in particular syntactic frames in “out-of-the-blue” contexts and some are not, in spite of the availability of a reasonably natural pragmatic interpretation. For example, (19a) and (19b) below are both grammatical, but the parallel (20b) is not, even though a causative interpretation (i.e., *The mother put her baby to sleep*) seems fairly salient:

- (19) a. The baby fed for an hour.
 b. The mother fed her baby.
- (20) a. The baby slept for an hour.
 b. *The mother slept her baby.

This distinction suggests that the difference between transitive *feed* and transitive *sleep* is not merely conceptual. There is no obvious conceptual difference in the activities described by (19b) and (20b): feeding babies and putting them to sleep are both typical parental activities. The fact, then, that (20b) would require additional context in order to be acceptable and (19b) would not indicates that there is a syntactic difference between the roots *feed* and *sleep*, not a pragmatic one. Furthermore, Cowper and Hall (2007) show that vocabulary items can have both lexical and functional properties; they look at English modals, which they argue contain both rich lexical meaning and grammatical information (as opposed to French modals, which are more purely lexical). English modals are morphosyntactically distinct from English verbs in that they take neither subject agreement (21) nor non-finite inflection (22):

- (21) a. Mary **can**(*s) play the bassoon.
 b. Mary **can***(s) tomatoes.

(Cowper and Hall 2007, p. 5, their (9))

- (22) a. *We hope **(to) can** arrive on time.
 b. *Marie **has could** find the article.

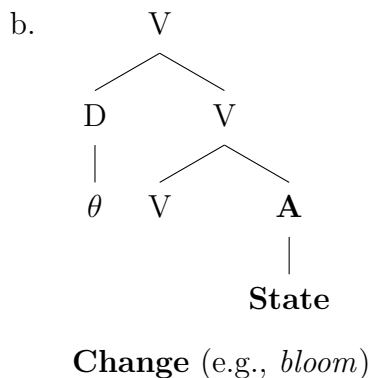
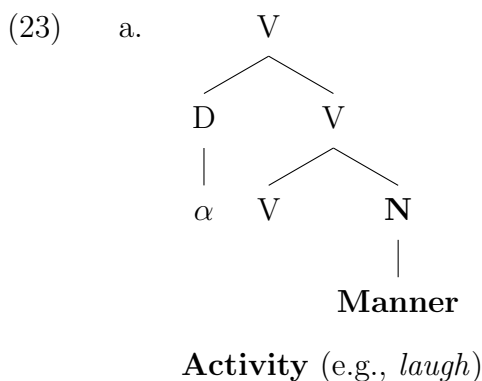
(Cowper and Hall 2007, p. 5, their (8a, b))

Although English modals express a wide range of meanings, they are subject to syntactic restrictions, unlike lexical verbs: specifically, they spell out the inflectional property of modality, and therefore they only appear in clauses where this feature is present. This indicates that the boundary between “lexical” items and “functional” items is not as clear-cut as Borer suggests; vocabulary items may have properties of both categories.¹¹

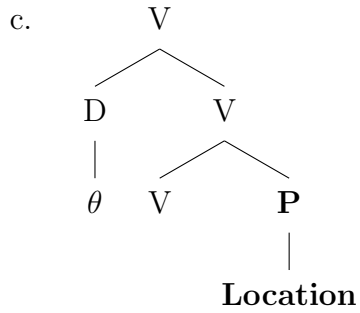
¹¹One possible way to maintain the lexical/functional dichotomy would be to treat items with both

2.3.2.2 Erteschik-Shir and Rapoport (2005)

Erteschik-Shir and Rapoport’s (2005) approach to the syntactic contribution of the verb provides further evidence that the division between the lexical and functional domains is not as clear-cut as Borer suggests. Their theory is essentially the opposite of Borer’s: they assume, following Hale and Keyser (1993), that the lexical meaning components of a predicate, including the meaning of the verb itself and the meanings of the arguments, individually project syntactic structure, yielding an eventuality type. They posit three types of meaning components that project within the syntax as complements of the verb: Manner, which projects as N, State, which projects as A, and Location, which projects as P. The possible combinations of meaning components yield an aspectual classification system: a verb with a projected N complement is an activity, and a verb with a projected P or A complement is a “change” predicate, i.e., an inchoative, achievement, unaccusative, or unergative. Furthermore, a complex structure may be derived through multiple selection; a copy of the verb may merge with the simple structures, yielding a causative structure. The simple (23) and complex (24) structures for these eventuality types are given below, where α is an agent and θ is a theme:



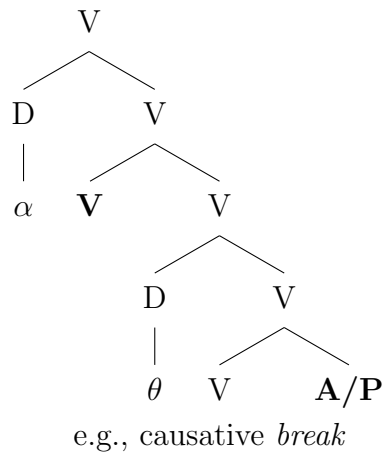
lexical and functional properties as idiomatic; however, this is also problematic, as I discuss in section 2.3.3.1.



Change (e.g., *arrive*)

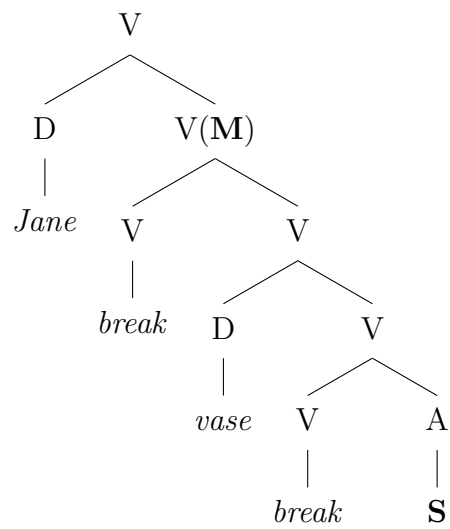
(Erteschik-Shir and Rapoport 2005, p. 67, their (3))

(24)



(Erteschik-Shir and Rapoport 2005, p. 67, their (4))

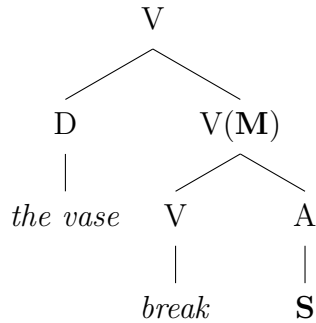
(25)



= Jane caused (with force) the vase to become broken.

(Erteschik-Shir and Rapoport 2005, p. 69, their (7))

(26)



= The vase became broken (with force).

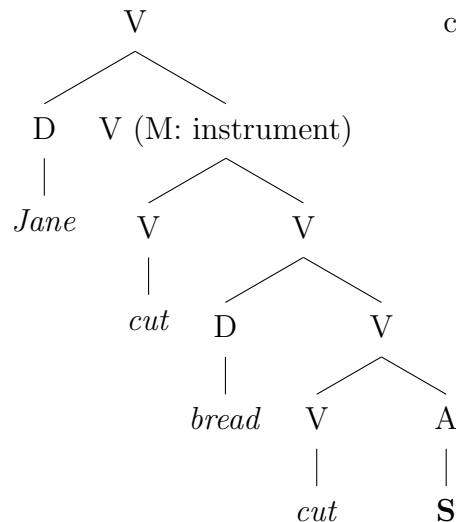
(Erteschik-Shir and Rapoport 2005, p. 68, their (6))

The principle of Full Interpretation (Chomsky 1986) requires that all meaning components of a head be interpreted; however, there is no requirement that all the meaning components be projected. Thus, the meaning components can either be interpreted as complements (i.e., units that project a syntactic category) or as modifiers (i.e., non-projecting units). This allows for the familiar transitivity alternations in verbs with two meaning components. For example, Erteschik-Shir and Rapoport point out that the verb *break* has both a Manner component ‘force,’ which projects as N, and a State component ‘broken,’ which projects as A. In the causative sentence *Jane broke the vase*, both meaning components project in the syntax, yielding the transitive structure in (25), while in the unaccusative *The vase broke*, only the State component projects (as A), and the Manner component is just a modifier, as in (26).

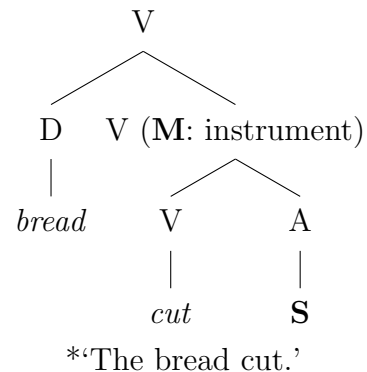
The principle of Full Interpretation constrains transitivity alternations by disallowing structures wherein not all meaning components are interpreted, as in (27a–c) below:

(27) a. CUT: $V \rightarrow$ **Manner** (‘sharp instrument’), **State** (‘cut’)

b.



c.



(Erteschik-Shir and Rapoport 2005, p. 70, their (9)–(11))

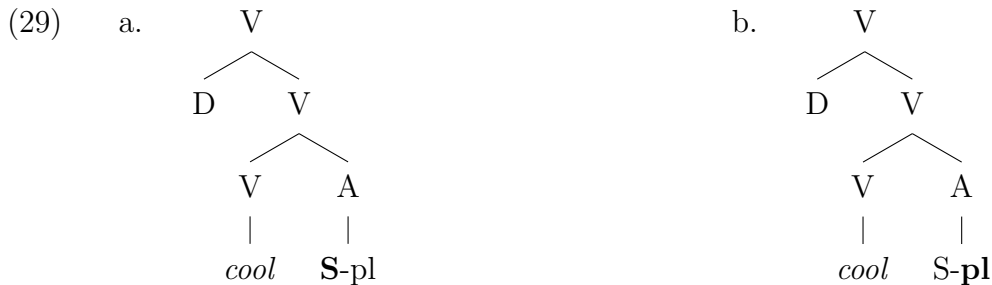
(27c) is ungrammatical because the Manner component (which, with the verb *cut*, is specified as ‘sharp instrument,’ as shown in the lexical entry in (27a)) lacks “a referential wielder” (71), in violation of the principle of Full Interpretation.

Erteschik-Shir and Rapoport (2005) use this framework to explain the behaviour of ‘path’ predicates (i.e., predicates that describe a sequential change, like *cool* or *advance*, rather than an instantaneous change). These predicates are unusual in two respects: they can be either telic (28a) or atelic (28b), and they can be made transitive even though they have a single meaning component (28c):

- (28) a. The soup cooled in an hour. *Telic*
 b. The soup cooled for an hour. *Atelic*
 c. Jane cooled the soup. *Transitive*

(from Erteschik-Shir and Rapoport 2005)

Erteschik-Shir and Rapoport attribute both of the properties of path predicates exemplified in (28) to the fact that they are ‘plural’: they describe incremental change with respect to a particular scale (e.g., temperature for *cool*, corresponding to a State meaning component, spatial path for *advance*, corresponding to a Location meaning component), and are thus composed of multiple individual events. Erteschik-Shir and Rapoport argue that telic/atelic sentence pairs like (28a) and (28b) share an identical structure, and differ only in terms of which aspect of the meaning component is ‘focused’ (the implementation of which is not discussed), as shown in the corresponding structures (29a, b) below:



(from Erteschik-Shir and Rapoport 2005)

In (29a), the State meaning component (i.e., the change of state from ‘not cool’ to ‘cool’) is focused, corresponding to the telic interpretation in (28a). In (29b), the plural facet of the component is focused (i.e., the multiplicity of incremental cooling events), corresponding to the atelic interpretation in (28b).

The plurality of path predicates is also argued to allow these predicates to transitive freely: a causer argument is licensed by the plurality facet of the predicate, and is interpreted as controlling the extent of the path of the change. Thus, in (28c) *Jane*

cooled the soup, ‘Jane’ is interpreted as the causer of the cooling event and the controller of the degree of the cooling event.

Erteschik-Shir and Rapoport provide an appropriate characterization of the verbs that permit these alternations (i.e., path predicates). Furthermore, their system is very economical, attributing the observed range of behaviour to a small number of lexical properties. However, the framework that they develop suffers from some empirical problems, which point to larger theoretical issues.¹² Whether or not a particular meaning component may be expressed simply as a modifier rather than a projecting element is difficult to justify. For example, in (27c) above, the ungrammaticality of the sentence **The bread cut* is attributed to the fact that there is no referential wielder for the instrumental Manner component, meaning that this component cannot be interpreted. However, consider the sets in (30) and (31) below:

- (30) a. *The bread cut.
 b. The knife cut the bread.
- (31) a. *The knight struck.
 b. The sword struck the knight.

The grammatical (b) sentences have explicit instruments, but no referential wielders, indicating that it is not the lack of a wielder that causes the ungrammaticality of the (a) sentences.¹³ Similarly, *Jane cut the bread* in (27c) is thought to be grammatical because ‘Jane’ is interpreted as the wielder of the ‘sharp instrument’ meaning component of *cut*. However, the ‘sharp instrument’ component itself is not expressed, and the sentence remains grammatical (though certainly pragmatically surprising) if the cutting is explicitly done without a sharp instrument, as in *Jane cut the bread with her magic wand*. Thus, the special requirement of an instrumental Manner component seems somewhat *ad hoc* as a way of explaining the contrasts in grammaticality. As lexical semantic features determine syntactic structure in this framework, the loose formulation of the principle of Full Interpretation can be exploited to justify any ungrammaticality, resulting in a theory that is largely unfalsifiable.

In spite of this, however, the notion of *path predicates* is useful in that it provides evidence that at least some lexical verbs contribute directly to the calculation of *Aktionssarten*. The verbs of path predicates provide lexically based measures for an event; the

¹²I also disagree with their approach to the division of labour between syntax and the lexicon, as outlined in section 2.2 above, but I leave this aside in this discussion.

¹³In fact, the (b) sentences are grammatical even without implicit wielders; for example, the knife and the sword may have cut the bread and struck the knight by falling on them. These are not the most salient interpretations of the sentences, but they are felicitous in appropriate contexts.

meaning of the verb itself defines the path, just as a quantized direct object (i.e., *she ate **the apple***) or an explicit path (i.e., *he pushed the stroller **to the park***) do. In other words, the telos is defined by the verb itself rather than by some external element.

2.3.2.3 An intermediate approach

Borer (2005a, b) and Erteschik-Shir and Rapoport (2005) both present extreme positions; for Borer, the lexical properties of the verb have no effect on the aspectual calculation of the predicate, while for Erteschik-Shir and Rapoport, it is the verb that projects the entire structure of the predicate. Both of these theories have merits, as highlighted above: Borer (2005a, b) points out that English verbs are pragmatically interpretable in a wide variety of syntactic constructs, and Erteschik-Shir and Rapoport (2005) introduce the useful notion of path predicates. I propose that these two elements can be combined into an intermediate approach: certain verbs are lexically specified with particular aspectual features and others are not. I assume a parallel between the nominal and verbal domains following Rijkhoff (1991), as described below, and propose that certain morphosyntactic features are inherent on some verbs, as they are on some nouns (as Cowper and Hall (2012) claim for the mass/count distinction).

Rijkhoff (1991) proposes that the nominal and verbal domains reflect one another: the concept of *Aktionsarten* in the verbal domain is mirrored by the mass/count distinction (or *Seinsarten*) in the nominal domain. Thus, he refers to number and classifier marking as *nominal aspect*, treating them as ways of representing nominal properties in the spatial domain, just as verbal aspect concerns the representation of eventuality properties in the temporal domain. Assuming this, I consider Cowper and Hall's (2012) approach to the mass/count distinction and apply it to the verbal domain.

Cowper and Hall (2012) adopt Wiltschko's (2009b) proposal that morphosyntactic features may be contrastive or not, depending on whether they are syntactic heads or modifiers of other elements. If a feature is a head, then its absence yields a default contrastive interpretation; if it is a modifier, then its absence does not result in a contrastive interpretation. For example, Wiltschko (2009b) argues that Halkomelem determiners are specified for gender by a modifier feature. While the feminine definite determiner *the* is ungrammatical with masculine nouns ((32a) versus (32b)), the definite determiner *te* is compatible with both masculine and feminine nouns (32):

- (32) a. *Ílhtel the swíyeqe.
eat DET.FEM man
[Intended] ‘The man is eating.’
b. Ílhtel the slháli.
eat DET.FEM woman
‘The woman is eating.’

(Wiltschko 2009b, p. 40, her (29))

- (33) a. Ílhtel te swíyeqe.
eat DET man
‘The man is eating.’
b. Ílhtel te slháli.
eat DET woman
‘The woman is eating.’

(Wiltschko 2009b, p. 40, her (28))

The fact that *te* can be used with both masculine and feminine nouns indicates that it is not contrastively interpreted as masculine; rather, it is simply not explicitly coded as feminine. This contrasts with German definite determiners: neither the masculine *der* nor the neuter *das* can appear with feminine nouns, indicating that these determiners are not merely vague with respect to gender.

- (34) a. Der Mann isst.
DET.MASC man eat.3S
‘The man is eating.’
b. *Der Frau isst.
DET.MASC woman eat.3S

- (35) a. *Die Mann isst.
DET.FEM man eat.3S
b. Die Frau isst.
DET.FEM woman eat.3S
‘The woman is eating.’

- (36) a. *Das Mann isst.
DET.NEUT man eat.3S
b. *Das Frau isst.
DET.NEUT woman.3S eat.3S

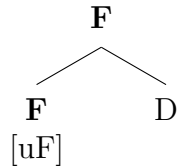
(Wiltschko 2009b, p. 40, her (25)-(27))

Wiltschko (2009b) claims that the difference between Halkomelem and German determiners is that gender is an inherent (i.e., intrinsic) feature of German determiners and a

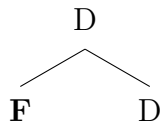
modifying (i.e., optional) feature of Halkomelem determiners. Syntactically, the inherent feminine gender feature in German merges as a head that selects a feminine determiner *die*, while the modifying feminine gender feature in Halkomelem merges as an adjunct to the feminine determiner *the*:

(37) Two modes of MERGE:

- a. Inherent feature: F = head (German *die*)



- b. Modifying feature: F = adjunct (Halkomelem *the*)



(Wiltschko 2009b, p. 39, her (24))

Cowper and Hall (2012) apply this distinction between inherent features and modifying features to the mass/count distinction on nouns. They propose that in English, most nouns are inherently *unspecified* for individuation (i.e., the feature #), and can thus be interpreted as either count or mass depending on whether or not # merges as a separate feature within the DP. They illustrate this with the nouns *tea* and *eel*; while these two nouns are canonically interpreted as mass and count respectively, they can both receive count readings (38) and mass readings (39) given appropriate contexts for each:

- (38) a. *The teas* of Sri Lanka are particularly nice.
 b. I'd like *a tea*, please.
 c. I'd like *one tea*, please.
 d. I'd like *these two teas*, please.
 e. My hovercraft is full of *eels*.
 f. There is *an eel* in my hovercraft.
 g. There is *one eel* in my hovercraft.
 h. *These two eels* won't leave my hovercraft.

- (39) a. The cup was full of *tea*.
 b. There is *eel* all over my hovercraft.

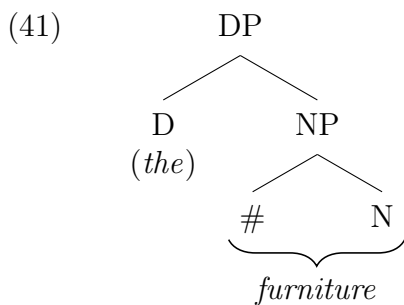
(Cowper and Hall 2012, p. 30-31, their (4)-(5))

In each of the sentences in (38), the DP contains a #P, meaning that the nouns are interpreted as count. The DPs in (39) lack #Ps, and therefore receive a mass interpretation. Thus, the nouns *tea* and *eel* themselves are, like most English nouns, unspecified for the mass/count distinction. However, there are certain nouns, such as *furniture*, that seem to be stubbornly mass:

- (40)
- a. The room is full of *furniture*.
 - b. *I ordered *a new furniture* from Ikea. It has three knobs on the front.
 - c. *Of all *the furnitures* in the world, he had to pick Louis XV.
 - d. *I ordered *three furniture(s)* from Ikea.
 - e. *If there's *one furniture* I can't stand, it's Louis XV.

(Cowper and Hall 2012, p. 9, their (8))

Cowper and Hall propose that *furniture* behaves differently than *tea* and *eel* do because *furniture* spells out both # and N, where # is a modifier and N is the head:



(Cowper and Hall 2012, p. 33, their (9))

In this structure, *furniture* is inherently individuated, denoting a set of individuated items (i.e., *pieces* of furniture), and can therefore not be further individuated by the projection of # as a separate head, which rules out the sentences in (40b-c). Crucially, because # is a modifier rather than a head, its absence on other nouns like *tea* and *eel* is non-contrastive; these nouns are not non-individuated, but vague with respect to the mass/count distinction. Cowper and Hall further show that languages differ with respect to whether nouns are lexically specified for this distinction and how the relevant features are arranged syntactically, yielding a range of different systems.

Assuming the parallel between *Aktionsarten* and the mass/count distinction (i.e., *Seinsarten*, in Rijkhoff's (1991) terminology), I propose an approach to the contribution of verbs to lexical aspect that mirrors Cowper and Hall's (2012) approach described above. Verbs are not uniformly devoid of syntactic information, nor do their lexical semantics determine the entire structure of the VP. Rather, I propose that some verbs spell out

aspectual features as modifiers, while other verbs are non-contrastively unspecified for these features. This would explain why English verbs are largely so flexible in terms of the types of events they are able to describe, as shown in (13) above: the verbs themselves are unspecified in terms of their aspectual properties, and can therefore describe multiple eventuality types given the appropriate context. However, there are some verbs that do not display this flexibility. For example, the verb *arrive* can describe a punctual event (42a), a series of separate punctual events (42b), and an event that is ongoing at the reference time (42c), but not an iterative event (42d) or a causative event (42e):

- (42) a. Cynthia arrived on Friday.
 b. They arrived for days.
 c. They are arriving now.
 d. *Cynthia arrived for days.
 e. *Cynthia arrived the letter.

In section 2.3.4.1, I propose that these types of restrictions are due to a lexical specification on *arrive* that prevents it from appearing in certain syntactic frames. In the next section, I discuss the types of functional projections that are argued (Borer 2005b; Travis 2010) to influence a predicate's lexical aspect; just as features may appear either as heads of functional projections or as non-contrastive adjuncts to nouns (Cowper and Hall 2012), I propose that features relating to lexical aspect may likewise appear as either heads of functional projections within the *vP* or as non-contrastive adjuncts to lexical verbs. While a lexical property that modifies a verb may prevent it from appearing within certain projections (just as *furniture* cannot be embedded within a *#P* because *#* appears as an adjunct to N), the lack of such a property is non-contrastive. I propose that the aspectual interpretation of a verb that does not have a lexical modifier is determined entirely by the syntactic structure in which it appears, while a verb that does have a modifier may be restricted from certain constructions due to that modifier. Concrete examples of the types of aspectual features that verbs may take as lexical modifiers in some languages will be considered in section 2.3.4 below.

2.3.3 Functional properties of lexical aspect

In addition to the lexical properties discussed above, grammatical features also influence lexical aspect. I follow Borer (2005b) and Travis (2010) in assuming that some features relating to lexical aspect are encoded in functional projections within the *vP* (specifically, boundedness and transitions). There are several advantages to positing functional heads

that encode aspectual features. First, following Chomsky (2000), all languages make use of some subset of a universal inventory of features made available by UG; positing grammatical features related to viewpoint aspect, of which languages make use of some subset, allows us to consider how the use of different features results in different aspectual systems. Furthermore, this approach to lexical aspect allows for a *hierarchical* arrangement of features, allowing us to predict what types of systems should and should not be possible. It also allows the same feature to be interpreted in different ways: some features may be either modifiers (as discussed in section 2.3.2.3) or heads, and thus could be interpreted either non-contrastively or contrastively, generating a wider range of possible systems without necessarily expanding the inventory of features.

I begin with Borer’s (2005b) discussion of the mechanisms of her *exo-skeletal* approach to syntax and the claims that she makes regarding the structure of telicity: specifically, it is encoded within a projection she labels Asp_Q , either by the merger of a quantity DP in its specifier position or by the insertion of an aspectual feature bundle directly in its head. I then turn to Travis (2010), whose theory also includes a dedicated aspectual projection within the verbal domain.

2.3.3.1 Borer (2005b)

As mentioned in section 2.3.2.1 above, Borer (2005a, b) argues that lexical items make no syntactic contribution whatsoever. Syntactic structure is instead projected entirely by f-morphs (which are either overt morphemes or abstract feature bundles), with lexical items only acquiring grammatical properties (such as syntactic category) once they are selected by functional heads. These functional heads are merged as what Borer (2005a) calls “open values” (i.e., categorial labels that are not further defined) and must be licensed by some element; they are assigned range either directly, by the merger of an f-morph (i.e., category-appropriate features that define the properties of the head), which may be either a free element or a head feature that requires head movement, or indirectly, by adverbial modification or specifier-head agreement (whereby the relevant property of the element in the specifier is copied onto the head). The functional heads categorize the lexical elements, and the range assigner specifies the semantic value of the head. Definiteness in English and Hebrew illustrates these different methods of licensing the open values. The head of DP is an open value $\langle e \rangle_d$ that assigns a referential index to an object. In English, $\langle e \rangle_d$ is usually assigned range directly by a free f-morph, such as *the*. This is shown in (43) below.

- (43) a. the cat
 b. $[_{DP} \text{the} \langle e \rangle_d [(\text{AP})[_{NP} \text{cat}]]]$
 (Borer 2005a, p. 24, her (15))

In Hebrew, range is assigned to $\langle e \rangle_d$ directly as well. However, definiteness is a head feature in Hebrew rather than a free f-morph, and therefore the N head must move to D in order for the definiteness feature to be realized, as shown in (44):

- (44) a. *ha.xatul*
 the.cat
 b. $[_{DP} \langle e \rangle_d (\text{AP}) [_{NP} \text{xatul}]] \rightarrow [_{DP} \text{xatul} \langle \mathbf{def} \rangle \langle e \rangle_d (\text{AP}) [_{NP} \text{xatul}]]]$
 (Borer 2005a, p. 25, her (16))

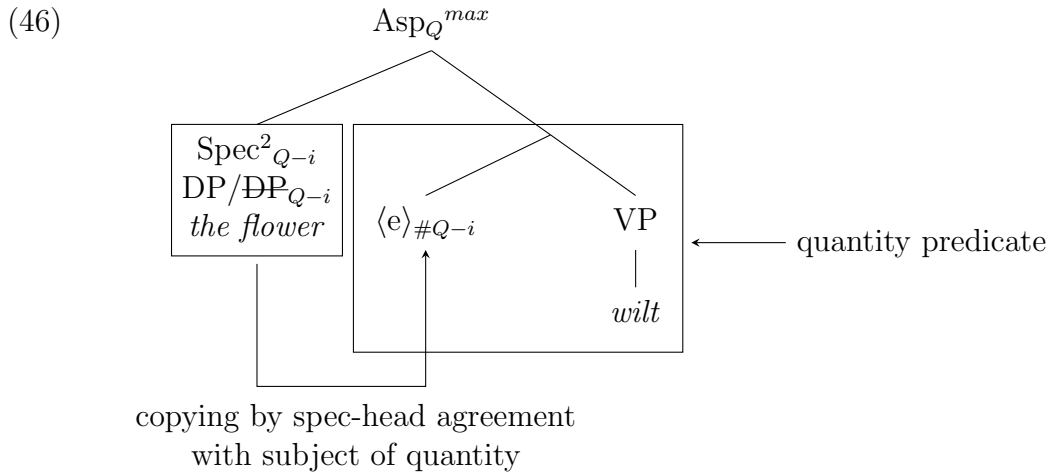
Both of these examples illustrate direct range assignment. However, in English, $\langle e \rangle_d$ may also be assigned range indirectly by specifier-head agreement. This method of range assignment is illustrated in (45) below. The possessor in the specifier of the DP is itself a definite DP (assigned range directly by the f-morph *the*), and thus assigns range indirectly to $\langle e \rangle_d$ through specifier-head agreement:

- (45) a. the dog's ear
 b. $[_{DP} [_{DP} \text{the dog's}]^3 \langle e^3 \rangle_d \dots [_{NP} \text{ear}]]]$
 (Borer 2005a, p. 26, her (21))

(43) and (44) illustrate two different modes of direct range assignment: in English, $\langle e \rangle_d$ is assigned range by a free morpheme, while in Hebrew, definiteness is a head feature, and thus the noun must move to the specifier in order for the feature to be realized. In (45), on the other hand, $\langle e \rangle_d$ is not assigned range by an f-morph, but by the definiteness of the element in its specifier.

Like Verkuyl (1993), Borer (2005b) notes the correlation between quantized direct objects and telicity. She discusses the parallel between the aspectual domain and the nominal domain, as Rijkhoff (1991) does; specifically, she claims that quantity can be a property of both DPs and events. Events are quantized when a verb stem is embedded within an aspectual quantity phrase, Asp_Q^{max} , which is analogous to the quantity phrase $\#P$ in the nominal domain. The head of the projection is $\langle e \rangle_{\#}$, an open value for quantity, which must be assigned range. Indirect range may be assigned by a specifier-head relation with a quantity DP. As the quantity property of the DP is copied onto the head [$\text{Asp}_Q \langle e \rangle_{\#}$] when it merges into the specifier, a subject of quantity (i.e., undergoer of structured change) interpretation is assigned to the quantity DP. This is illustrated in (46) below:

when a DP with a Q value of $Q-i$ (i.e., a quantity DP) is moved into the specifier of Asp_Q^{max} , this property is copied onto the head via specifier-head agreement, valuing it and turning a VP embedded within the phrase into a quantity predicate. This causes the moved DP to be interpreted as the subject of quantity.



(Borer 2005b, p. 77, her (11a))

Just as $\langle e \rangle_{\#}$ can be assigned range directly in the nominal domain (i.e., as the head of $\#P$), either by the merger of a functional feature bundle or by adverbial modification, the head of Asp_Q may also take direct range assignment. Borer argues that in Russian, for example, range may be assigned to $[\text{Asp}_Q \langle e \rangle_{\#}]$ directly by quantificational prefixes such as *na-* ‘a lot,’ *u-* ‘all,’ and *po-* ‘a little,’ which give rise to telicity even in the absence of quantity internal argument DPs (or, indeed, any internal argument at all), as shown in (47b) and (47c), which are telic, unlike (47a):

- (47)
- a. Ivan guljál’.
Ivan walk.PST
‘Ivan walked/was walking.’
 - b. Ivan **na-**guljál’sja po górodu.
Ivan NA-WALK.PST.REFL around town
‘Ivan walked a lot/enough/to his heart’s content around the town.’
 - c. Ivan **po-**guljál po górodu.
Ivan PO-WALK.PST around town.
‘Ivan took a (short) walk around town.’

(Borer 2005b, from Filip 2000)

Borer (2005b) argues that these prefixes are the phonological spell-outs of quantificational feature bundles that merge directly into the head of Asp_Q and assign range to $[\text{Asp}_Q \langle e \rangle_{\#}]$ by copying their specific quantificational value, as shown in (48):

- (48) $[_{ASPQ} \langle \mathbf{quan}^\alpha \rangle .V \langle e \rangle_\# [_{VP} \forall]]$ (Borer 2005b, her (22))

In (48), $\langle e \rangle_\#$ is assigned range directly by $\langle \mathbf{quan}^\alpha \rangle$, where α is the specific featural value associated with the quantificational prefix (i.e., ‘a lot’ for *na-*, ‘all’ for *u-*, ‘a little’ for *po-*). Thus, telicity can arise either by the indirect assignment of range to $[_{ASPQ} \langle e \rangle_\#]$ by a quantity DP that merges into the specifier of Asp_Q , or by a bundle of quantificational features that merges directly into the head of Asp_Q . Borer (2005b) follows Krifka (1992) in assuming that predicates are atelic in the unmarked case. The projection of Asp_Q is optional, Borer claims; in its absence, the predicate is interpreted as non-quantity. In other words, there is no dedicated atelic structure. Therefore, Asp_Q is a contrastive feature in the sense described in section 2.3.2.3 above: the absence of a quantity projection entails a non-quantity interpretation.

Borer’s approach differs from many other analyses in that the meaning of the verb plays no role at all in the determination of lexical aspect. She argues, in keeping with her view that lexical items are devoid of syntactic content, that telic or atelic readings cannot be derived from the lexical semantics of the verb. She points out that this is problematic for atelic sentences like *Hannah pushed the cart*, which, according to her theory, should be ambiguous between a telic reading and an atelic reading, since there is a quantity object (*the cart*) that could assign range to the open value $\langle e \rangle_\#$, the head of the optional Asp_Q^{max} . The fact that *Hannah pushed the cart* is atelic, she says, cannot be due to any lexical property of the verb *push*, since sentences like *Hannah pushed the button* can easily be interpreted as telic. Instead, Borer attributes this to the compatibility of events with our world knowledge, claiming that “pushing buttons...is consistent with a well-established telic event. Pushing carts is not” (2005b). This is true of stative and eventive interpretations as well; she points out that while an adverbial like *twice* can force an eventive interpretation of a particular predicate, as in (49a), our world knowledge can tell us that a structure is incompatible with the associated interpretation, as in (49b):

- (49) a. Kim touched the fence (twice today).
 b. The wall touched the fence (#twice today). (Borer 2005b, her (9c, b))

However, as discussed in section 2.3.2.1 above, Borer’s appeal to extra-linguistic knowledge as an explanation of all infelicitous constructions is difficult to justify. The sentence *Hannah pushed the cart* is actually ambiguous: the atelic reading wherein Hannah pushes the cart along a path of motion is the most natural interpretation of the sentence, but

there is also a perfectly felicitous telic reading in which Hannah gives the cart a single, well-defined push (cf. *Hannah pushed Sam*). Borer's point is that our extra-linguistic knowledge plays a crucial role in determining the felicity of a particular structural configuration, but there is nothing infelicitous about the telic interpretation of this sentence, nor does this interpretation require any conceptual stretch: it is simply less salient than the atelic reading. In Borer's theory, there is no other way to explain the relative prominence of the atelic reading over the telic reading.

Furthermore, there is an additional problem with Borer's approach to lexical aspect: her treatment of achievement verbs. Given that she rejects the possibility that roots may contain syntactic information, she cannot isolate achievements as a class based on grammatical properties because she claims that they cannot be distinguished by their behaviour in particular syntactic frames. For example, she points out that though achievements have been distinguished from accomplishments based on their incompatibility with the progressive (e.g., #*Alice is noticing the picture* vs. *Alice is painting the picture*), the sentences in (50) are fully grammatical:

- (50) a. She is winning the race.
 b. Pat is reaching the summit.
 c. The king is dying.
 d. The train is arriving.
 e. He is starting to leave.

(Borer 2005b, her (42))

Achievements can also appear in the frame *it took x time*, which is unexpected due to the fact that they supposedly describe instantaneous events:

- (51) a. It took Kim seven hours to reach the summit.
 b. It took them seven hours to win the race.
 c. It will take the king two more years to die.
 d. It will take seven hours for the train to arrive.

(Borer 2005b, her (44))

Start to and *in x time adverbials*, which should also exclude instantaneous verbs, are fine with achievements as well:

- (52) a. Kim started to reach the summit.
 b. They started to reach an understanding on the contract.
 c. They reached the summit in 10 hours.
 d. They reached an understanding in 10 hours.

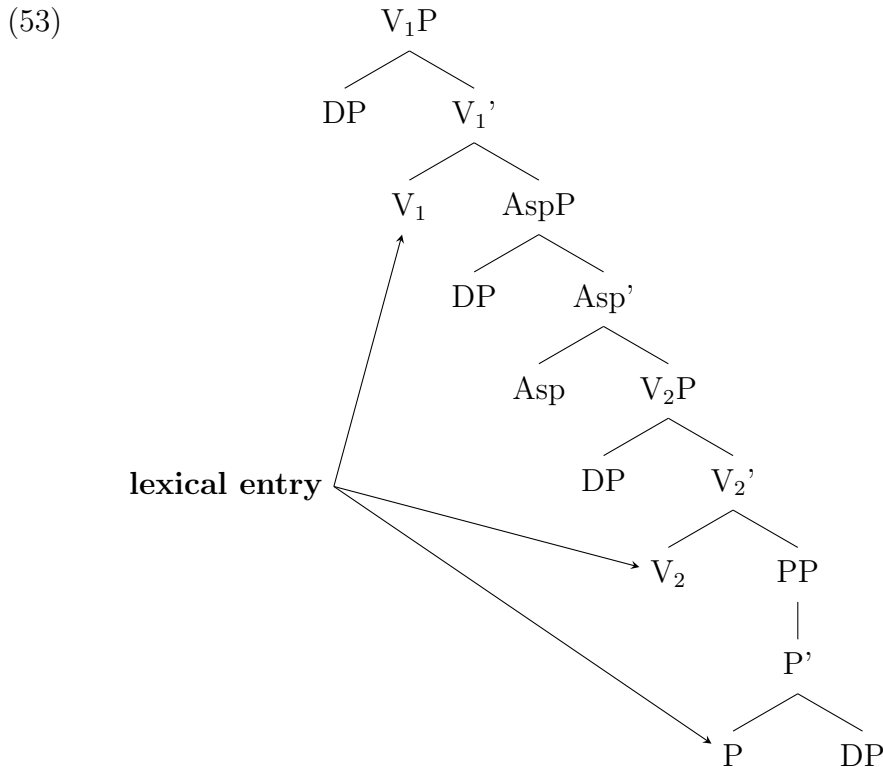
(Borer 2005b, her (47))

Given that the interaction of achievement verbs with classification tests does not distinguish them from other verbs, Borer defines them as follows: “[T]he V-head typically found in so-called achievements is more specified than listemes typically are, in being part of an idiom which forces the projection, and hence the assignment of range to $[_{AspQ} \langle e \rangle_{\#}]$, thereby making their insertion in non-quantity structures impossible” (2005b). In other words, achievements obligatorily appear in quantity structures. They differ from other predicates in that range can be assigned to $[_{AspQ} \langle e \rangle_{\#}]$ without a quantity DP in the specifier of Asp_Q ; instead, $\langle loc/\exists \rangle$, a locative feature bundle idiomatically specified on the V head with no associated phonological material, assigns range to the head, valuing it as $[_{AspQ} \langle e^{loc/\exists} \rangle_{\#}]$. I do not consider here how plausible this particular treatment of achievement verbs may be; however, it does not appear to be any less of a lexical specification than positing a particular feature as part of the verb, and introduces an unjustified stipulation (i.e., her proposed idiomatic V head is projected always and only with achievement verbs, which do not otherwise form a distinct class). As discussed in section 2.3.2.1 above, Borer’s insistence on a strict lexical/functional dichotomy is not advantageous, as there do appear to be lexemes with both types of properties. Furthermore, Borer’s treatment of achievements suffers from the additional shortcoming of a somewhat circular derivation: the projection of the idiomatic V head requires the projection of Asp_Q , which must be assigned range by the idiomatic V head. Thus, this feature of her approach to lexical aspect adds an undesirable complication without really maintaining her proposed split between the lexical and functional domains.

Borer’s (2005b) account identifies structural configuration as a key component in the calculation of lexical aspect, meaning that the interpretation of a particular predicate is a product of the structure in which it appears (and mediated by the compatibility of this interpretation with our extra-linguistic knowledge). The optional Asp_Q projection captures the correlation between telicity and a quantity direct object, and also creates a position for dedicated aspectual feature bundles. However, her treatment of achievement verbs is unnecessarily complicated and *ad hoc*. I will propose a solution for this problem in section 2.3.4.

2.3.3.2 Travis 2010

Travis (2010) proposes the following structure for the VP, which she calls an event spine:



(Travis 2010, p. 10, her (13))

Travis takes a classical approach to category labels. She refers to the topmost projection as V_1P , but the function of V_1 is essentially identical to the function assigned to Voice by Kratzer (1996): it generates a transitive structure and introduces an agentive argument.¹⁴ While V_1 is not overtly realized in English, Travis shows that both Tagalog (54) and Malagasy (55) have lexical causative constructions with overt causative morphemes (*pag-* and *an-* respectively) that merge in V_1 :

¹⁴Travis (2010) argues that this head differs from Kratzer's (1996) Voice head in that it is lexical rather than functional; specifically, she claims that lexical items are phrasal idioms (Marantz 1997) that span V_1 , V_2 , and P. I do not discuss this treatment of lexical items here, focusing instead on Travis's proposal about the role of Asp.

- (54) Tagalog
- | | | | | | |
|----|-------|--------------------|----|------------------|------------------------|
| a. | tumba | X fall down | b. | pag-tumba | Y knock X down |
| | sabog | X explode | | pag-sabog | Y scatter X |
| | luwas | X go into the city | | pag-luwas | Y take X into the city |
| | sali | X join | | pag-sali | Y include X |
- (Travis 2010, p. 163, her (10))
- (55) Alternations (Malagasy)
- | | | | | | |
|----|------------------------|---------------|----|-------------------|-----------------|
| a. | mihisatra | X move slowly | b. | manisatra | Y move X slowly |
| | milihatra | X be in order | | mandahatra | Y arrange X |
| | milona | X soak | | mandona | Y soak X |
| | misitrika | X hide | | manitrika | Y hide X |
| | (no unaccusative form) | | | manome | Y give X to Z |
- (Travis 2010, p. 164, her (12))

Travis argues that there is a functional projection below V_1 , which she labels AspP, that houses morphemes of inner aspect (i.e., lexical aspect). Her evidence for this position comes from Tagalog reduplication. As shown in (54) above, the Tagalog causative morpheme *pag-* merges in Travis’s V_1 head. Reduplication, which Travis claims “gives a meaning like imperfective” (p. 56),¹⁵ occurs between *pag-* and the verb root. This is shown for the form *nagtutumba* ‘is knocking down’ in (56):

- (56) *nagtutumba* *n* + *m* + *pag* + RED + V
- outer aspect topic causative **Asp** V
- (Travis 2010, p. 57, her (14))

The reduplication occurs between the causative *pag-* and the verb root \sqrt{tumba} ‘knock down.’ This morpheme, therefore, is proposed to be generated in the head of AspP.

Thus, Travis (2010), like Borer (2005b), argues for dedicated aspectual structure within the verbal projection that allows lexical aspect to be encoded functionally rather than lexically. The fact that there are languages (like Tagalog and Malagasy) in which these functional projections are overtly spelled out adds significant weight to this proposal.

¹⁵This meaning, assuming a traditional division between lexical aspect and viewpoint aspect, seems to be more related to the latter than the former. I do not discuss the exact meaning of the reduplication here, but focus instead on the fact that an overt aspectual morpheme can appear between the verb root and the upper limit of the verbal shell in Tagalog.

2.3.4 Proposal

Both Borer (2005b) and Travis (2010) argue for functional heads within the vP domain (Asp_Q and Asp respectively) that encode properties of lexical aspect. Based on their evidence, I likewise assume that aspectual features may be encoded in functional projections within the vP . I now turn to the specific aspectual features that may appear in this domain and present my proposal for how they are encoded. I follow Borer (2005b) in using functional heads to encode aspectual features that distinguish among the eventive predicate types.¹⁶ For Borer, accomplishment and achievement predicates both contain a valued Asp_Q head, while activity predicates do not. In this section, I present a different analysis of these event types: I begin with the feature that distinguishes achievement verbs from other verb types, Asp_A , and then I discuss the manifestation of telicity, encoded by Asp_Q , taking Erteschik-Shir and Rapoport's (2005) path predicates into consideration.

2.3.4.1 Atomicity

In section 2.3.2.3 above, I propose that achievement verbs such as *arrive* are lexically specified in such a way as to prevent them from appearing in certain constructions, following Cowper and Hall's proposal that mass nouns such as *furniture* cannot be embedded within a $\#P$ because $\#$ is an adjunct to N. In other words, $\#$ may appear as an adjunct to N or as a separate syntactic head, but not both. What, then, is the parallel aspectual feature that may be either an adjunct to a lexical verb or a separate syntactic head within the vP ?

According to Vendler's (1957) classification, achievement verbs differ from the other verb classes¹⁷ in that they are momentaneous as opposed to durative; they describe an instantaneous change of state rather than a durative event. However, this description is problematic if interpreted literally. As we have seen in section 2.3.3.1 above and repeated here in (57) and (58), Borer (2005b) points out that achievement verbs are compatible with some durational adverbials, which is unexpected if they lack duration:

¹⁶I leave states aside for the moment, as the contrast between states and events is situated in Infl in English rather than in v ; I return to states in section 2.4.

¹⁷Except for semelfactives, which are instantaneous verbs that do not entail a change of state (e.g., *She knocked on the table*). I discuss this further below.

- (57) a. It took Kim seven hours to reach the summit.
 b. It took them seven hours to win the race.
 c. It will take the king two more years to die.
 d. It will take seven hours for the train to arrive.

(Borer 2005b, her (44))

- (58) a. Kim started to reach the summit.
 b. They started to reach an understanding on the contract.
 c. They reached the summit in 10 hours.
 d. They reached an understanding in 10 hours.

(Borer 2005b, her (47))

The events in sentences such as these could be explained as being made up of a “preparatory” phase followed by an instantaneous change of state (e.g., for *reach the summit*, the preparatory phase would be all the climbing that took place leading up to reaching the summit). In this case, the durational adverbials would apply to the preparatory phase rather than the achievement itself (e.g., in (57a), Kim reached the summit after climbing for seven hours). However, even with this explanation, the term “instantaneous” remains problematic: how should an instant be defined? Although the events described by achievement predicates are characterized by their brevity, they nonetheless have real-time duration, even if that duration is very short. In his analysis of the English progressive, Hallman (2009a) argues that the difference between states and events is that states are evaluated at moments and events (including achievements) are evaluated at intervals.¹⁸ He defines stativity as *durationlessness*: thus, any eventuality with duration, no matter how short, is necessarily an event. Under this theory, the distinction between achievements and other events is lost: they are all temporal, and thus they all have duration, even if that duration is very brief.

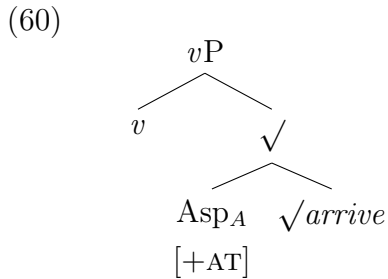
Rather than using duration as the key property that distinguishes achievements from the other event classes, I instead propose, following Filip and Rothstein (2006), that *atomicity* is the defining property of achievements. Achievements are events that lack subparts; the event must be taken as a single, indivisible whole. This is compatible with the data in (57) and (58) above, assuming the preparatory phase described above: the build-up to the achievement may have subparts, but the achievement itself is indivisible.

Thus, I propose that the aspectual feature that modifies English achievements is atomicity, which corresponds to the semantic formula given in (59):

¹⁸I discuss Hallman’s theory in more detail in the next section.

- (59) X is **atomic** iff:
 $\exists x [X(x) \wedge [[\forall y: X(y)] \rightarrow x=y]]$

In other words, an event X is atomic if and only if it consists of a single part. Following Wiltschko's proposal that features may appear either as non-contrastive root modifiers or as the heads of contrastive functional projections, I propose that English achievement verbs like *arrive* take atomicity as a root modifier and are lexically structured as follows:



This structure indicates that the root *arrive* is lexically specified as atomic. In (60), the categorizing head *v* selects a root, which is made up of the modifying head Asp_A (analogous to Borer's Asp_Q , which I discuss in the next section), which has the feature value [+AT], plus the root $\checkmark arrive$. Because atomicity is a modifier of $\checkmark arrive$ rather than an independent syntactic head, its absence on other roots is non-contrastive.

2.3.4.2 Telicity and path predicates

As discussed above, quantized direct objects can play a crucial role in the determination of lexical aspect: the same verb may yield either an accomplishment predicate or an activity predicate, depending on whether or not it has a quantity DP as its direct object. For example, the verb *read* forms an activity predicate as an intransitive (61a) or with an indefinite plural direct object (61c), and it forms an accomplishment predicate with a singular direct object (61b) or a definite plural direct object (61d):

- (61)
- | | | |
|----|----------------------------------|-----------------------|
| a. | Jennifer read. | <i>Activity</i> |
| b. | Jennifer read a book . | <i>Accomplishment</i> |
| c. | Jennifer read books . | <i>Activity</i> |
| d. | Jennifer read the books . | <i>Accomplishment</i> |

In Krifka's work, the relevant property that distinguishes activities from accomplishments is cumulativity: an event is cumulative if and only if any subpart of that event is itself an instance of that event (Krifka 1992, 1998). Thus, activity predicates such as *read*

in (61a) are cumulative, as each subpart of the reading event is itself a reading event. Krifka's formula for cumulativity is given in (62) below:

- (62) X is **cumulative** iff:

$$\exists x \exists y [X(x) \wedge X(y) \wedge \neg x \subseteq y] \wedge \forall x \forall y [X(x) \wedge X(y) \rightarrow X(x \cup y)]$$
(Krifka 1998, p. 3, his (5))

The contrast to cumulativity is quantization: an event is quantized if and only if no subpart of that event is itself an instance of that event (Krifka 1998). For example, the predicate *read a book* in (61b) above is quantized, as no subpart of an event of reading a book is itself an event of reading a book. This formula is given in (63):

- (63) X is **quantized** iff:

$$\forall x \forall y [X(x) \wedge X(y) \rightarrow \neg y \subset x]$$
(Krifka 1998, p. 3, his (6))

Given that cumulativity is associated with atelicity (i.e., all subparts of an activity are themselves instances of that activity), and that verbs such as *read* are interpreted as atelic in the absence of a quantized direct object (or some other sort of external bound), I propose that predicates are interpreted as cumulative by default. Thus, quantization is a marked property. I propose, following Borer (2005b), that the feature associated with quantization is Asp_Q . Following Cowper and Hall (2012), this feature may either appear as a root modifier, in which case its absence is non-contrastive, or as an independent syntactic head, in which case its absence is contrastive.

The crucial distinction between Erteschik-Shir and Rapoport's (2005) path predicates (e.g., *The soup cooled*) and other predicates that are atelic without a direct object (e.g., *Joan wrote* vs. *Joan wrote a letter*) or some other type of external bound (e.g., *Ella pushed the cart* vs. *Ella pushed the cart to the park*) is that the former type is genuinely ambiguous while the latter type contrastively lacks Asp_Q . A path predicate like *The soup cooled* can be interpreted as either telic (i.e., the soup became cool) or atelic (i.e., the soup became cooler), unless there is an adverbial that resolves the ambiguity, as in (64):

- (64) a. The soup cooled in ten minutes (*but it was still hot).
 b. The soup cooled for ten minutes (but it was still hot).

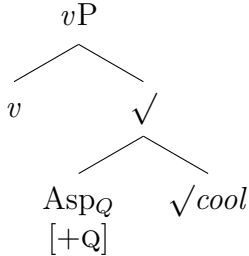
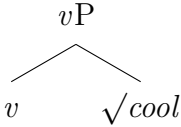
In (64a), the adverbial *in ten minutes* forces a telic interpretation of the path predicate, which is incompatible with the assertion that the soup is still hot. The adverbial *for ten minutes*, on the other hand, allows an atelic interpretation, meaning that (64b) asserts

only that the soup has become cooler, not that it has become cool. The ambiguity of path predicates like *The soup cooled* distinguishes them from predicates that are atelic without an external bound. (65a) below is not ambiguous; the lack of a direct object means that the sentence must be interpreted as atelic, as shown by its incompatibility with the adverbial *in ten minutes*. This adverbial can only be used when the predicate is made telic by the addition of a direct object that measures out the event, as in (65b):

- (65) a. Joan wrote {for ten minutes / *in ten minutes}.
 b. Joan wrote a letter {for ten minutes / in ten minutes}.

Thus, path predicates like (64) and non-path predicates like (65) differ in terms of their degree of featural specificity: *cool* is ambiguous between a telic interpretation and an atelic interpretation, while *write* contrastively lacks Asp_Q , and is therefore atelic in the absence of a quantized direct object or other external bound.

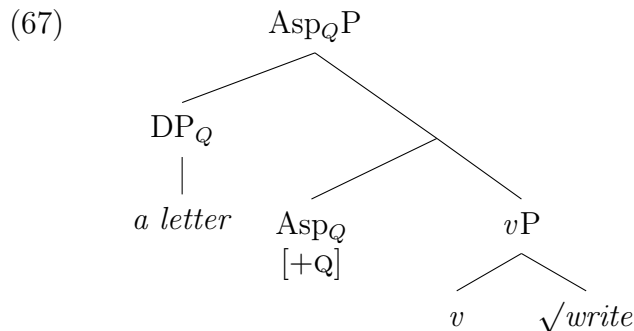
I propose that the ambiguity of path predicates such as *cool* comes from the fact that the root may or may not be specified as quantized (i.e., the root *cool* is lexically ambiguous). This specification is not contrastive; predicates whose roots are not specified as quantized are vague with respect to the distinction between quantization and cumulativity at the lexical level, and are only specified at a higher structural position. Path predicates like *cool* are ambiguous between the following two structures:

- (66) a.  b. 

The Asp_Q feature in (66a) lexically specifies the root as quantity, while this specification is lacking in (66b). Since there is no phonological material associated with Asp_Q in English, the lexical verb *cool* is ambiguous between these two interpretations. As the adverbial *in X time* selects quantity predicates, as shown in (64) above, its presence resolves the ambiguity; in its absence, however, either interpretation is possible.

For non-path predicates, I follow Borer (2005b) in treating Asp_Q as a separate syntactic head that contrastively encodes quantization when it is licensed by a quantized DP in its specifier that can be interpreted as a subject of quantity. In the sentence *Joan wrote a letter*, the quantized direct object *a letter* merges into the specifier of Asp_QP , which

causes the predicate to be interpreted as quantized (i.e., telic), with the letter measuring out the progress of the event. This structure is given in (67):



If the Asp_Q head cannot be licensed by a quantized direct object or some other type of external bound, it does not project. The absence of this projection is contrastive: a predicate is interpreted as cumulative if quantization is not present.

In summary, therefore, I propose that heads encoding atomicity (Asp_A) and quantization (Asp_Q) are active in the English vP : Asp_Q (either as a root modifier or a separate syntactic head) valued as $[+Q]$ yields an accomplishment predicate, Asp_A (as a root modifier) valued as $[+AT]$ yields an achievement predicate, and the absence of both features yields an activity predicate.¹⁹ In the rest of this thesis, we will see how these features are manifested in other languages.

2.4 Viewpoint aspect

While lexical aspect is a property of a predicate, viewpoint aspect is a property of an entire clause. Thus, in order to discuss viewpoint aspect, we now turn to the Infl domain. Comrie’s (1976) pre-theoretical definition describes viewpoint aspect in terms of how an event is represented temporally (i.e., whether it is “viewed” from within or without). This definition can be interpreted in at least three different ways: as completion, as duration, or as atomicity. If perfectivity is interpreted as synonymous with completion, then a perfective event entails that the event is completed at the reference time and an imperfective event does not. If we define perfectivity in terms of duration, then a perfective event is associated with a single moment and an imperfective event is associated with a temporal interval (Cowper 2005; Kyriakaki 2006; Hallman 2009a). Finally, if we define perfectivity as atomicity, then a perfective event is internally inaccessible and an

¹⁹I have not mentioned the class of states here; I discuss the distinction between states and events in the next section.

imperfective event has accessible internal structure. In this section, I discuss each of these options and argue that atomicity is the most appropriate characterization of perfectivity.

2.4.1 Completion

One way of interpreting perfectivity is to equate it with completion (i.e., whether a clause carries an implicature that the eventuality described is finished or completed). This is particularly salient in telic predicates, which by definition include inherent culminations. Completion is implicit in Kratzer's (1998) definition of perfectivity: an event is perfective if its run time is entirely contained within the reference time, meaning that all subparts of the event occur within the reference period. For events with inherent endpoints, it follows from Kratzer's definition of perfectivity that perfectivity has an entailment of completion: if event culmination is part of the representation of the event, then this part of the event is necessarily included within the reference time. Thus, perfective telic predicates must carry an entailment of being completed. This is true in English: all perfective events with a built-in endpoint have a completion entailment. This is shown in (68) below with the telic predicate *build a house*: (68a) is perfective, and is therefore infelicitous when the completion of the event is explicitly cancelled, while (68b) is imperfective and therefore compatible with the cancellation of the completion.

- (68) a. John built a house last year (# but he never finished it).
 b. John was building a house last year (but he never finished it).
 (Bar-el 2005, p. 4, her (6))

However, Bar-el (2005), in her discussion of aspect in Skwxwú7mesh, shows that it is not the case that the perfective aspect has a completion entailment in all languages. She shows that Skwxwú7mesh perfective sentences lack the completion entailment that English perfectives have; in contrast to English, the completion of perfective accomplishments can be explicitly cancelled in Skwxwú7mesh without infelicity, as shown in (69) below:

- (69) a. #I wrote a letter, but I didn't finish writing it.
 b. chen xel't ta sxwexwiy'am' welh haw k-an i huy
 1S.SG wrote-TR DET story CONJ NEG IRR-1CONJ PART finish
 kwi-n-s wa xel'-nexw
 DET-1POSS-NOM IMPERF write-TR(LC)
 'I wrote a story but I didn't finish writing it.'

(Bar-el 2005, p. 2, her (3))

In fact, even in English, the perfective is not always incompatible with an incomplete event. The dialogue given in (70) is not infelicitous, or even particularly marked, even though the second speaker explicitly did not read the entire book *Jonathan Strange and Mr. Norrell*:

- (70) Q1: What did you do last night?
 A1: I read *Jonathan Strange and Mr. Norrell*.
 Q2: I love that book! How far did you get?
 A2: The middle of Part II.

This seems to indicate that perfectivity is not synonymous with completion.

2.4.2 Intervals and moments

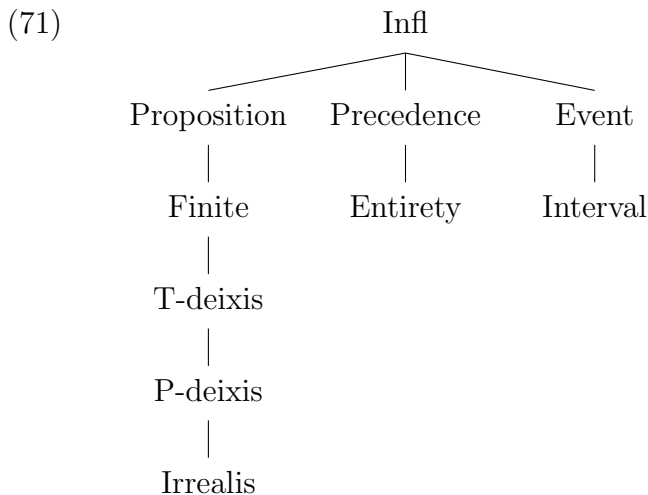
The second possible interpretation of perfectivity involves duration: a perfective event is associated with a moment and an imperfective event is associated with an interval. Cowper's (2005) theory of default aspect is based on this interpretation of perfectivity, as is Kyriakaki's (2006) refinement. Hallman (2009a) also uses intervals and moments, albeit in a different way, in his semantic analysis of the English progressive. I now turn to each of these analyses.

2.4.2.1 Cowper (2005)

Cowper (2005) reduces viewpoint aspect to the distinction between moments and intervals: she argues that the perfective aspect associates an event with a single moment, while the imperfective aspect associates an event with a temporal interval. Her theory is based on featural contrast, as described in section 2.2.3 above (i.e., a linguistic feature conveys different information depending on the contrasts in which it participates). Cowper (1992) observes that in languages with morphemes that encode viewpoint aspect, eventive clauses lacking these aspectual morphemes receive a default viewpoint aspectual interpretation. For example, English marks the imperfective aspect overtly with the progressive morpheme *-ing*, which causes an event to be associated with a temporal interval rather than a moment, meaning that it has an accessible internal structure (e.g., *I **was reading** last night when the phone rang*). An English eventive clause that lacks the morpheme *-ing*, in contrast, is represented as a single moment: because the event is represented as a single unit, its internal structure is inaccessible (e.g., *I **read** last night (*when the phone rang)*). In Hungarian, on the other hand, the perfective is explicitly marked with the prefix *meg-*, which forces an event to be associated with a

single moment, and an eventive clause lacking this morpheme is represented as an interval by default. Thus, Cowper (1992) argues that these aspectual morphemes encode privative features, meaning that the absence of a particular feature yields a contrastive interpretation. She argues that English has default perfective viewpoint aspect, meaning that clauses are interpreted as perfective unless there is overt imperfective morphology. The morpheme *-ing* encodes the event that it governs as occurring over a temporal interval, while in the absence of *-ing*, an English eventive clause is represented temporally as a single moment. In contrast, she claims that Hungarian is a default imperfective language. In Hungarian, the perfective morpheme *meg-* forces an event to be interpreted as occurring within a temporal point; when this morpheme is not present, the event is associated with a temporal interval by default. Thus, Cowper (1992) argues that English and Hungarian differ parametrically in terms of the default aspectual interpretation of eventive clauses: English is a default perfective language, with all unmarked eventive clauses being temporally represented as single moments, and Hungarian is a default imperfective language, with all unmarked eventive clauses being represented as occurring over a temporal interval. In both languages, the marked viewpoint aspect (imperfective for English, perfective for Hungarian) is morphologically spelled out.

Cowper (2005) syntactically encodes this contrast between default perfective and default imperfective languages in her feature geometry of Infl, the syntactic node that encodes the temporal, aspectual, and modal properties of a clause, as described in section 2.2.2.1. The feature geometry also permits default neutral languages, which do not encode a grammatical contrast for viewpoint aspect. The full feature geometry is shown in (71) below:



(Cowper 2005, p. 5, her Figure (3))

This monovalent feature dependency structure is Cowper's (2005) maximal geometry. She follows Chomsky (2000) in assuming that all languages make use of some subset of universally available features. This morphosyntactic feature geometry allows for distinctive featural absence, meaning that nodes with possible dependents have a default interpretation. Consider the features Event and Interval. The feature Event distinguishes states and events; the presence of the feature Event entails that the eventuality denoted by the clause has temporal properties not found in states (Cowper 2005). The presence of the feature Interval, which is a dependent of the Event node, entails that the event is temporally linked to an interval rather than a single moment. If a language does not have the feature Interval as part of its system, then a bare Event node yields a neutral interpretation (neither perfective nor imperfective) of viewpoint aspect. Cowper (2005) argues that in Spanish, the feature Event has no possible dependents, meaning that a bare Event node does not convey any information about the temporal representation of the event. In contrast, she argues that English makes use of the feature Interval, meaning that the absence of this feature yields a default perfective interpretation of the Event node, and the event is temporally associated with a single moment rather than an interval (Cowper 2005). One piece of evidence for these claims comes from the behaviour of past tense clauses in the two languages. Spanish has two morphological past tense forms, the imperfective (72) and the preterite (73). One might expect that, within this theory, the Spanish imperfective would encode Interval, thus making it analogous to the English progressive. However, as Interval entails Event, we would then expect the Spanish imperfective to be ungrammatical with stative verbs, which is not the case: both the imperfective and preterite are grammatical with both stative (72) and eventive (73) verbs.

- (72) a. Miguel **era** presidente el año pasado.
 Miguel be.IMPF.3SG president the year passed
 'Miguel was president last year (and may still be president).'
- b. Miguel **fue** presidente el año pasado.
 Miguel be.PRET.3SG president the year passed
 'Miguel was president last year (but is no longer president).'

(Cowper 2005, p. 23, her (23))

- (73) a. Yo **hablaba** con Mario.
 I talk.IMPF.1SG with Mario
 ‘I was talking to Mario.’
 b. Yo **hablé** con Mario.
 I talk.PRET.1SG with Mario
 ‘I talked to Mario.’

(from Cowper 2005, p. 21, her (19b))

In English, in contrast, the simple past is compatible with both states and events, as in (74), while the past progressive cannot appear with states, as in (75):

- (74) a. Maria knew the answer.
 b. Alan read the book.

(Cowper 2005, p. 22, her (21))

- (75) a. Alan was reading the book.
 b. *Maria was knowing the answer.

(Cowper 2005, p. 22, her (22))

These data lead Cowper (2005) to conclude that while the English progressive marker *-ing* spells out the feature Interval (and so entails its parent feature Event), the Spanish imperfective form does not.²⁰ Viewpoint aspect is thus strictly defined as the presence or absence of the feature Interval in eventive clauses: the English Infl encodes a contrast for viewpoint aspect, and the Spanish Infl does not.

Kyriakaki (2006), looking at viewpoint aspect in Greek, provides an extension of Cowper’s (2005) system that is consistent with Cowper’s (1992) observations about the contrast between English and Hungarian. Kyriakaki proposes that there are two possible dependent features of the Event node: Interval, which specifies that the event is linked to a temporal interval, and Moment, which specifies that the event is linked to a single moment.²¹ If a language makes use of the feature Moment, as she argues that Greek does, then a bare Event node causes the event to be interpreted by default as being associated with a temporal interval.²² In (76), the unmarked verb stem yields an imperfective event, as shown by the non-optionality of the adverbial *oli mera* ‘all day’, while the

²⁰Cowper (2005) concludes that the relevant featural distinction between the Spanish imperfective and preterite is that the preterite spells out Entirety, a dependent feature of Precedence encoding the fact that all moments associated with the eventuality are prior to the reference time.

²¹Cowper (2005) also alludes to this possibility for Spanish (p. 13), though she ultimately rejects it.

²²Although Cowper (2005) does not discuss Hungarian, the observations she makes in Cowper (1992) suggest that Hungarian is like Greek in this respect.

marked perfective verb stem in (77) yields a perfective event, which is incompatible with *oli mera* ‘all day’:

- (76) $\Theta\alpha$ **milao** avrio *(oli mera) sti Ghianna.
 FUT speak.1S.PRES tomorrow all day to.the Joanna
 ‘I will talk to Joanna all day tomorrow.’
- (77) $\Theta\alpha$ **miliso** avrio (*oli mera) sti Ghianna.
 FUT speak.PERF.1S.PRES tomorrow all day to.the Joanna
 ‘I will talk to Joanna tomorrow.’

(Kyriakaki 2006, p. 30, her (10))

Thus, a Greek predicate containing an unmarked verb stem must describe an ongoing event, which shows that the imperfective aspect is the default in Greek, unlike English, in which events are interpreted as perfective by default. In other words, Kyriakaki (2006) makes explicit the contrast between default perfective and default imperfective languages in the Infl system: a default perfective language such as English makes use of the feature Interval, meaning that an unmarked Event node is associated with a moment, while a default imperfective language such as Greek makes use of the feature Moment, meaning that an unmarked Event node is associated with an interval.²³

2.4.2.2 Hallman (2009a)

Hallman’s (2009a) approach to English viewpoint aspect differs from Cowper’s (2005) in several crucial ways. Hallman notes that English progressives exhibit the same behaviour as stative predicates in a number of contexts: for example, they are interpreted as “surrounding” a clause with a point adverbial such as *when* (i.e., the event described by the clause with the point adverbial is interpreted as occurring during the eventuality described by the main clause), as in (78a, b), they cannot themselves be made progressive, as in (79a, b), they have a uniform interpretation in the past and the present (i.e., there is no special interpretation associated with either the past tense or the present tense), as in (74a-d), and they can be an ECM complement of verbs like *reveal* and *discover*, as in (75a, b). All of these behaviours contrast with non-progressive eventive predicates, which are interpreted as subsequent to a *when* clause (78c), can be made progressive (79c), have distinct interpretations in the past (80e) and the present (80f), and cannot be the ECM complement of verbs like *reveal* and *discover* (81c):

²³This additional contrast does not eliminate the possibility of a language that has no contrast for viewpoint aspect; such a language would make use of neither Interval nor Moment as a dependent of Event. Cowper’s claim that Spanish is such a language remains possible.

- (78) a. Leigh *was happy* when we came in.
 b. Leigh *was singing* when we came in.
 c. Leigh *sang* when we came in.
- (79) a. *Max is being here. [=prog(be here)]
 b. *Max is being running. [=prog(be running)]
 c. Max is running. [=prog(run)]
 (Hallman 2009a, p. 4, his (4), from Vlach (1981))
- (80) a. Max was here.
 b. Max is here.
 c. Max was running.
 d. Max is running.
 e. Max ran. [habitual or episodic reading]
 f. Max runs. [habitual reading only]
 (Hallman 2009a, p. 7, his (7)-(9))
- (81) a. The inspector revealed/discovered Max to be a liar.
 b. The inspector revealed/discovered Max to be lying.
 c. *The inspector revealed/discovered Max to lie.
 (Hallman 2009a, p. 8, his (10))

These similarities, Hallman claims, suggest that the meaning of the progressive must have something in common with stative predicates. His proposal is that both stative predicates and progressive predicates are true of moments, while eventive predicates are true of intervals.²⁴ In other words, states and progressives are durationless.

Hallman (2009a) notes that previous analyses of the progressive form (e.g., Dowty 1979; Hallman 2009b, etc.) treat the eventuality being described as a stage of any possible culmination of that eventuality (e.g., the progressive *Luca is building a house* is a stage of the event *Luca builds a house*). Thus, the truth of a progressive construction is evaluated with respect to a subpart of the entire event. Given that activities are cumulative (Vendler 1957; Dowty 1979), meaning that any part of an activity is itself an instance of that activity, these analyses predict that a progressive predicate derived from an activity (such as *run*) would itself be an activity, and would thus display the

²⁴Note that this contradicts Cowper (2005), who claims that progressives are associated with temporal intervals, while perfectives (i.e., non-progressives) are associated with moments. I return to this point below.

same behaviour as an activity. However, the data in (78)-(81) above clearly show that progressives pattern with statives rather than with the non-progressive eventives from which they are derived. What, then, is the connection between stative predicates and progressive predicates?

The problem with these analyses, Hallman argues, is that they attempt to relate the eventuality described by a progressive to an interval over which the event occurs.²⁵ Hallman proposes both states and progressives are asserted of moments in time, while eventives are asserted of temporal intervals. In other words, events have duration and states and progressives do not. The assertion that states are durationless is counter-intuitive, since states generally endure for significant periods of time (e.g., *love*, *know*, *be sick*). However, Hallman explains that this oddness does not stem from our knowledge of the meanings of the words that denote states, but from our experience with situations in the real world. For example, the fact that the sentence *John was tall for three days* is odd does not have to do with the meaning of the predicate *be tall*; rather, it is because in our experience, tallness tends to last longer than three days. Although it may be intuitively true that states endure, this is an empirical property of real-world states, not a linguistic property of stative predicates.

Hallman assigns the following semantic formulas to states and events, where T is the set of moments, $\otimes T$ is the set of pluralities of moments, E is the set of eventualities, and τ is a function from eventualities to time spans:

$$(82) \quad \begin{array}{l} \text{a. } \llbracket \Phi\text{STATE} \rrbracket = \lambda t \in T \lambda e \in E [\tau(e) = t \wedge \Phi'(e)] \\ \text{b. } \llbracket \Phi\text{EVENT} \rrbracket = \lambda i \in \otimes T \lambda e \in E [\tau(e) = i \wedge \Phi'(e)] \end{array}$$

(Hallman 2009a, p. 21, his (22))

A stative predicate is a predicate of a moment t and an eventuality e , and asserts that t is the run time or “temporal trace” (p. 20) of e and that e is a Φ -eventuality. An eventive predicate, on the other hand, is a predicate of an interval i (which is a member of the set of pluralities of moments $\otimes T$) and an eventuality e , and asserts that i is the run time of e and that e is a Φ -eventuality. In other words, a state is a predicate whose temporal index is a single moment (and thus must express a property that can be evaluated at a moment, i.e., an *unchanging* property), while an event is a predicate whose temporal index is a plurality of moments.

Hallman models the formula for progressives on the formula for states given in (82a) above. A progressive event is a predicate of a moment t and an eventuality e , and asserts

²⁵This is explicitly part of Cowper’s (2005) analysis of English progressives as well; the feature Interval associates an event with a temporal interval rather than a moment.

that t is the run time of e and e has a *possible* Φ -culmination e' (irrespective of whether this culmination is actually reached). This is expressed by the formula in (83) below:

$$(83) \quad \llbracket \text{prog}(\Phi\text{EVENT}) \rrbracket = \lambda t \in T \lambda e \in E [\tau(e) = t \wedge \exists e' \in E \exists i \in \otimes T [\Phi(i, e') \wedge \text{Cul}(e', e)]]$$

(Hallman 2009a, p. 22, his (23))

This formula allows for a progressive to be true of a particular moment even if the possible culmination of the corresponding event never occurs (e.g., *Luca was building a house* can be true of a particular moment even if *Luca built a house* is never true of any interval).

Thus, Hallman (2009a) attributes the similar syntactic behaviour of states and progressives noted in (78)-(81) above to the fact that both types of predicates are asserted of *moments* rather than events.

2.4.2.3 Intervals or moments?

Hallman's (2009a) analysis of the English progressive is semantic, and he does not propose any syntactic structures for the data he considers. However, it is nonetheless striking that his proposal appears to be the opposite of Cowper's (2005): he argues that progressive predicates are asserted of moments and non-progressives are asserted of intervals, while she argues that progressive predicates are associated with intervals and non-progressives are associated with moments. How can we reconcile these opposing accounts?

Hallman's account does not make any claims regarding the representation of predicates. Rather, it is about the *evaluation* of predicates: eventive predicates are evaluated at intervals (no matter how brief the situations they describe may be) and states are evaluated at moments (no matter how long the situations they describe may last). Hallman groups English progressives with states because they are also evaluated at moments; as shown in the formula in (83) above, although the events from which they are derived are evaluated at intervals, the progressives themselves are true or false of single moments. He does not make any distinction between the relative durations of a situation described by a progressive clause and a situation described by a non-progressive clause, nor does he claim anything about their respective representations. Given that this thesis is primarily concerned with the syntactic representation of eventualities rather than the evaluation of eventualities, is there any way to map Hallman's proposal onto a syntactic representation that makes reference to moments and intervals?

Cowper’s assertion that perfective clauses are associated with moments is somewhat problematic, since perfective clauses can obviously be used to describe situations that explicitly last longer than a single moment, as in (84):

- (84) a. Hannah ran for an hour.
b. Peter slept for a day.

Cowper addresses this issue by saying that her proposed feature Interval does not correspond with actual, real-time event duration, but is rather a “properly linguistic feature” (p. 15). A question then arises: why describe the perfective/imperfective distinction in terms of duration when the distinction explicitly does not relate to real-time duration? Indeed, she refers to atomicity in her description of (85) below, which is a perfective sentence that describes an event that implicitly probably took place over an extended period of time:

- (85) They built a huge new parking garage near the library.

(Cowper 2005, p. 15, her (5))

She says that the perfective aspect “...treats [the event] as an atomic whole without discernible subevents” (p. 15). In other words, although the event itself occurs over a temporal interval, it is represented as a single, indivisible unit. Cowper labels this unit a “moment”; however, I argue that this label unnecessarily obscures the difference between the event itself and the syntactic representation of the event. Nothing would be lost by describing the syntactic unit that the perfective aspect encodes simply as an atom rather than a moment, and this approach would eliminate the apparent contradiction of Cowper’s theory with Hallman’s (2009a) account of the evaluation of progressives, as well as simplifying the relation between eventualities and their representations.²⁶

A significant contribution of Cowper’s analysis is the observation that only eventive predicates can take the progressive suffix *-ing*. Stative predicates are either ungrammatical in the progressive, as shown in (86), or take on an eventive interpretation, as shown in (4) and repeated here in (87):

- (86) a. Peter knows French.
b. *Peter is knowing French.

²⁶I discuss this in the next section.

- (87) a. Hannah is sick.
 ≠ *Hannah is throwing up*
 b. Hannah is being sick.
 = *Hannah is throwing up*
 ≠ *Hannah is sick (i.e., she has a cold, the flu, etc.)*

This fact is reflected in Cowper’s feature geometry: Interval (or Moment, in the refinement by Kyriakaki 2006) is a dependent feature of Event, meaning that the presence of this feature entails the presence of the feature Event. This part of Cowper’s (2005) theory should be preserved even if we do not use the features Interval and Moment to encode viewpoint aspect.

2.4.3 Atomicity

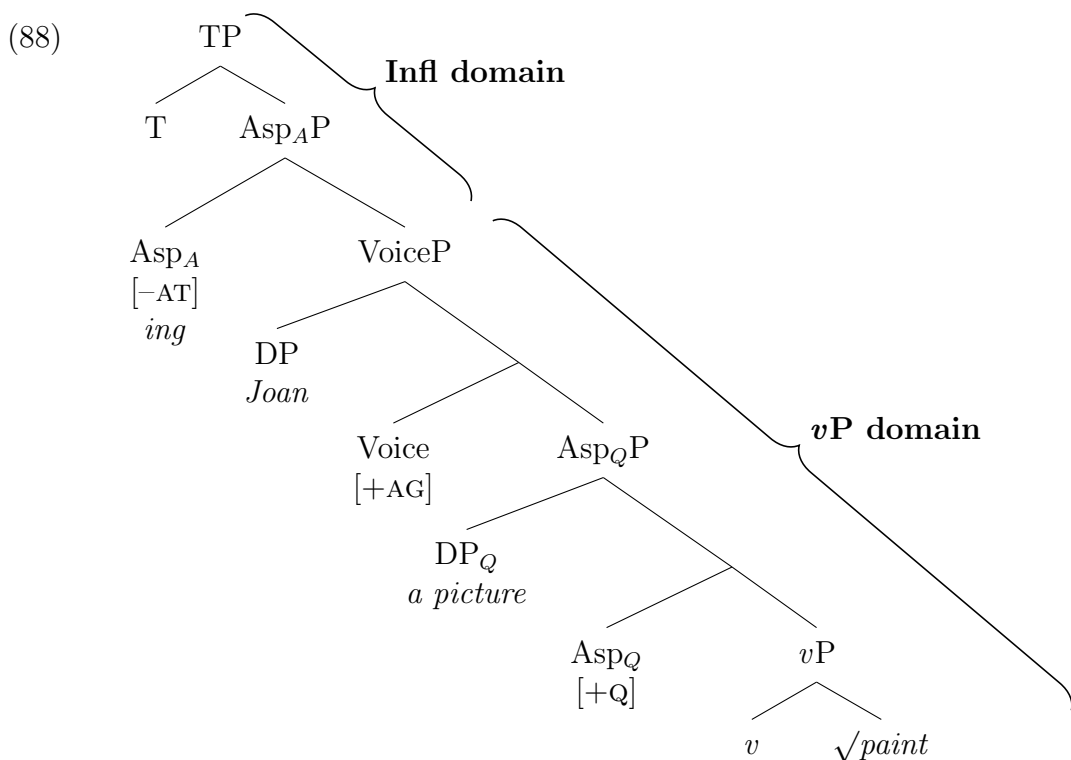
Cowper (2005) and Hallman (2009a) both consider English viewpoint aspect with respect to intervals and moments, but they reach apparently opposite conclusions: Cowper (2005) claims that the English progressive form encodes the fact that a predicate is represented as occurring over a temporal interval, while Hallman (2009a) claims that it treats a proposition as a predicate of a single moment (i.e., as a moment). In the previous section, I concluded that, while Hallman’s proposal appropriately captures how progressives and non-progressives are *evaluated*, describing the syntactic representation of viewpoint aspect in terms of moments and intervals creates unnecessary complications, as “moments” and “intervals” as linguistic features do not map to real-time duration.

I propose that the relevant distinction between the perfective and the imperfective is atomicity: the perfective encodes the fact that the predicate is taken as an indivisible whole, and the imperfective encodes the fact that the predicate is internally accessible. This characterization captures the same facts that Cowper’s (2005) analysis does while eliminating the complication of linguistic moments and intervals being different from real-world moments and intervals.

There is an important advantage to the proposed characterization of viewpoint aspect: it mirrors the atomicity distinction proposed in section 2.3.4. I have argued that English achievement verbs are lexically specified as atomic via a [+AT] feature in an Asp_A root modifier. I propose that the English imperfective is encoded by the feature [−AT] in Asp_A in the inflectional system. These two possible feature specifications of Asp_A mirror the two possible dependent features of Event: [+AT] corresponds to Kyriakaki’s (2006) feature Moment, and [−AT] corresponds to Cowper’s (2005) feature Interval. Thus, the same type of distinction (atomicity vs. non-atomicity) exists at multiple levels of structure, and the

feature that encodes this property, Asp_A , can take constituents of different sizes within its scope. At the Infl level, atomicity yields a perfective predicate, and at the root level, it yields an achievement.²⁷ The notion of “default aspect” (Cowper 2005; Kyriakaki 2006) is compatible with this interpretation of perfectivity: the only difference is the relevant morphosyntactic feature that encodes it. English, as a default perfective language, takes non-atomicity as a marked feature: a clause that is not explicitly marked as non-atomic (via the progressive marker *-ing*) is interpreted as atomic by default. In Greek, on the other hand, perfectivity is marked, meaning that in the absence of Asp_A (which would have the marked value [+AT]), a clause is interpreted as non-atomic by default.

The structure for the complete clause *Joan is painting a picture* is given in (88) below. The fact that the clause is imperfective is encoded below the TP in the syntactic head Asp_A (which in English has the value *non-atomic* [-AT] rather than *atomic* [+AT], meaning that the clause has discernible subparts) and is spelled out by the suffix *-ing*. These two heads make up the Infl domain of the clause. The remainder is the *vP* domain: the agent *Joan* appears in the specifier of the Voice projection, and the quantity direct object *a picture* merges with Asp_Q , yielding a quantized event. The *vP* proper takes the root $\sqrt{\text{paint}}$ (which does not have Asp_A as a root modifier) in its domain, verbalizing it.



²⁷In the next chapter, I will argue that atomicity can also be encoded within the *vP* in Japanese, meaning that this feature can operate over three structural domains.

As encoded in Cowper's (2005) feature geometry, only eventive clauses may have a contrast for viewpoint aspect. Thus, in English, all imperfective sentences must be interpreted as eventive. There is a clear distinction between states and events in the present tense. Stative clauses cannot take the progressive form; states that hold at the moment of speech must be described with the simple present tense. On the other hand, the simple present cannot be used to describe events that are ongoing at the moment of speech; instead, they must be in the progressive form. However, this distinction is obscured in the simple past, as both statives and eventives are compatible with this tense. In the sentence in (89) below, the predicate *be sick* lacks the progressive suffix *-ing*, and is therefore not explicitly coded as imperfective; however, it is compatible with both a stative interpretation (i) or an eventive interpretation (ii):

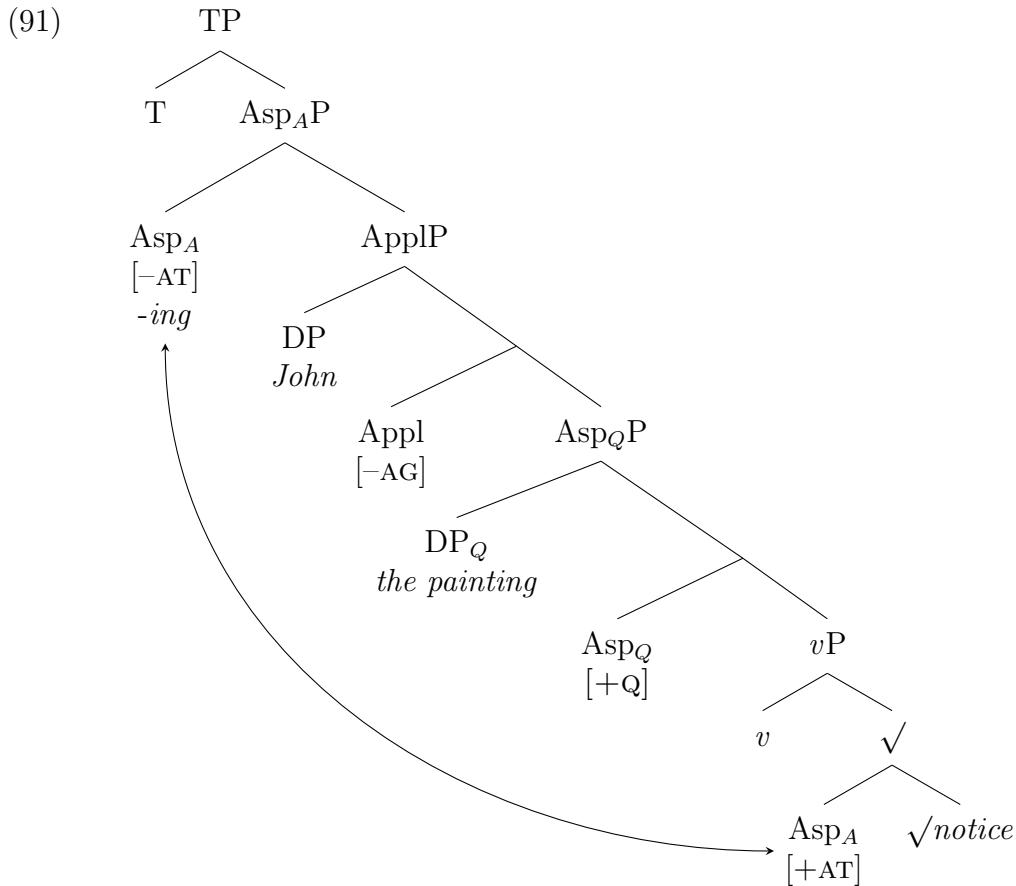
- (89) I was sick last night.
- i. = *I had a cold last night.*
 - ii. = *I threw up last night.*

There is no overt morphology associated specifically with eventiveness in English; while the suffix *-ing* is restricted to events, it spells out accessibility in addition to eventiveness. At this point, therefore, I do not propose that a separate head that encodes eventiveness appears in this structure. However, as we will see in the next chapters, other languages do have a more robust contrast between states and events, and therefore require a specific projection that encodes the distinction between states and events.

I have argued in section 2.3.4 above that English achievement verbs are lexically specified as atomic. Treating perfectivity as atomicity allows us to explain why achievements are often odd in the progressive, as in (90): as they are specified as atomic at the lexical level, putting them into the imperfective (i.e., representing them as non-atomic at the clausal level) yields a contradiction.

- (90) a. #John is noticing the painting.
 b. #Joe is forgetting the number.
 c. #Jen is spotting her friend.

This incompatibility is illustrated in (91), the structure for (90a); Asp_A on the root is specified as [+AT] and Asp_A in Infl is specified as [-AT].



This incompatibility of an atomic root with a non-atomic construction predicts that while Asp_A can appear at different structural levels, it cannot occur multiple times in a single clause. Thus, we would expect that something that is specified as either atomic or non-atomic at the vP or lexical level cannot be so specified at the IP level. In the next chapters, we will see how this prediction is borne out.

Having shown that neither completion nor punctuality is an appropriate characterization of perfectivity, I proceed from this point with the assumption that perfectivity is best represented as clausal atomicity, which parallels my proposal for event atomicity discussed in section 2.3.4 above.

2.5 Summary

In this chapter, I have presented the framework for my discussion of aspect. The main components of this framework are as follows: (1) Aspect is attributed to morphosyntactic features, specifically quantity (Asp_Q) and atomicity/accessibility (Asp_A). (2) Aspectual features may be active at three different levels: the root level, the predicate (vP) level, or the clause (IP) level. (3) These features are contrastive when they head indepen-

dent syntactic projections and non-contrastive when they are root modifiers. (4) The interpretation of a feature depends on the domain over which it operates.

The framework outlined in this chapter is based mainly on data from English. In the remainder of this thesis, I refine this framework based on the aspectual systems of other languages, focusing on Japanese.

Chapter 3

Japanese aspect in the *v* domain

3.1 Introduction

The theoretical framework established in Chapter 2 primarily uses English data as its basis. However, the validity of this framework is determined by its cross-linguistic applicability. In order to test my proposals, I now look at the aspectual system of Japanese to see whether it can be accounted for.

One of the aims of this thesis is to investigate the interaction between aspectual features in the *v* and Infl domains, and the domain to which Japanese statives belong is crucial to this investigation, particularly with respect to the stative verb *iru* ‘to be,’ since the aspectual construction *V-te iru* is often described as the progressive form, analogous to the English *-ing*. If the *-te iru* form were parallel to the English progressive, the *-te iru* form would be a spell-out of the feature $[-AT]$ in Asp_A in the Infl domain, as described in Chapter 2, and would indicate that Japanese makes viewpoint aspectual contrasts. However, I show in this chapter that the *-te iru* form is generated within the *v* system and spells out stativity rather than internal accessibility. I also show that since stativity is the highest aspectual projection that appears in Japanese, there are no aspectual contrasts made in the Infl system.

The remainder of this chapter is organized as follows. I begin with a discussion of Japanese aspectual phenomena, including verb classes and auxiliary constructions (3.2); although the distribution of the *-te iru* construction has historically been used as the diagnostic for the verb classes (3.2.2), the distribution of other auxiliary constructions and the interactions of these constructions with each other indicate further differences between the classes (3.2.3). Based on these observations, I propose that the common meaning of the *-te iru* form is stativity (3.3.1), which I claim heads a functional projection in the *vP* system (3.3.2). I then turn to the structure of the *vP* system (3.4); I propose a

set of featural specifications for the functional *v*P heads *v* (3.4.1), State (3.4.2), and Asp_A (3.4.3), as well as a characterization of stative potentials (3.4.5), a class of predicates that has both verbal and adjectival properties. Finally, I discuss predicate quantization (3.5); I argue that Asp_Q is not active in Japanese, meaning that Japanese has no contrast for telicity.

3.2 Phenomena

One of the claims of this thesis is that Vendler’s (1957) feature-based system of lexical aspect is based on real-world knowledge about how eventualities actually unfold, and does not reflect linguistically relevant morphosyntactic classes. Therefore, adhering rigidly to this system may obscure important aspectual distinctions and/or generalizations. Japanese is a concrete example of a system that does not fit into Vendler’s classification. Kindaichi (1950) proposed a verb classification system for Japanese that reflects its unique categories, highlighting the fact that different languages may partition eventualities in different ways. I use Kindaichi’s classification system as the starting point for my investigation of Japanese.

In this chapter, the Japanese construction *-te iru* is of primary importance. This construction is made up of a verb in the *-te* form²⁸ and the auxiliary *iru* ‘be,’ and forms the basis for Kindaichi’s (1957) classification system. While this construction has often been described in the literature as continuative, progressive, or imperfective (e.g., Ogihara 1998; Shirai 2000), we will see below that these descriptions do not fully characterize its interactions with the different verb types. What, then, does this construction actually contribute, and how does it interact with different verb types to generate Kindaichi’s classification system? In this section, I first lay out this system and then present the specific questions that it raises.

3.2.1 Japanese verb classes

Prior to the development of Vendler’s (1957) aspectual classification system, a classification specifically for Japanese was proposed by Kindaichi (1950). Kindaichi’s system defines four verb types, distinguished by their interaction with the *-te iru* construction: stative verbs, which cannot appear with *-te iru*; instantaneous verbs, which receive a perfect interpretation with *-te iru*; activity (or *continuous*) verbs, which receive a pro-

²⁸As in Clarke (2005b), I treat the morpheme *-te* as a default predicate marker: it attaches to any predicative item that cannot raise to T to realize tense.

gressive interpretation with *-te iru*, and stative potentials (which Kindaichi called stative IV verbs), which obligatorily appear with *-te iru* and receive a stative interpretation.²⁹ These classes are summarized in Table 3.1 below.

Table 3.1: Kindaichi's aspect table for *-te iru*

Verb Form	Stative	Instantaneous	Activity	Stative potential
	<i>iru</i> (be)	<i>shinu</i> (die)	<i>oyogu</i> (swim)	* <i>sobieru</i> (tower over)
Verb	<i>aru</i> (be)	<i>iku</i> (go)	<i>hashiru</i> (run)	* <i>niru</i> (resemble)
	<i>iru</i> (need)	<i>aku</i> (open)	<i>aruku</i> (walk)	
With <i>-te iru</i>	*	perfect	progressive	stative

(from Nightingale 1999, p. 14, his Table (1.4))

These verb types display unique syntactic distributions. While activity verbs (92) and instantaneous verbs (93) may appear in the *-te iru* construction, and stative verbs (94) cannot appear in the *-te iru* construction,³⁰ stative potentials (95) must, with very few exceptions, appear with *-te iru*:

(92) Activity verb:

- a. Akiko-wa hon-o yon-**da**.
Akiko-TOP book-ACC read-PST
'Akiko read a book.'
- b. Akiko-wa hon-o yon-**de i-ta**.
Akiko-TOP book-ACC read-TE be-PST
'Akiko was reading a book.'

(93) Instantaneous verb:

- a. Akiko-wa taore-**ta**.
Akiko-TOP faint-PST
'Akiko fainted.'
- b. Akiko-wa taore-**te i-ta**.
Akiko-TOP faint-TE be-PST
'Akiko had fainted.'

²⁹There is one exception to this: stative potentials can appear in the simple past tense in relative clauses. I discuss this briefly in section 3.4.5.4.

³⁰Michiya Kawai (p.c.) points out that in western dialects of Japanese, stative verbs do appear in the *-te iru* form. I do not consider these dialects in this thesis; however, extending my analysis to account for the facts of these dialects is an important direction for future research.

(94) Stative verb:

- a. Akiko-ga uchi-ni **i-ru**.
 Akiko-NOM house-DAT be-NONPST
 ‘Akiko is at home.’
- b. *Akiko-ga uchi-ni **i-te i-ru**.
 Akiko-NOM house-DAT be-TE be-NONPST

(95) Stative potential:

- a. *Akiko-wa yomi-kaki-ni sugure-**ru**.
 Akiko-TOP read-write-DAT be.excellent-NONPST
- b. Akiko-wa yomi-kaki-ni sugure-**te i-ru**.
 Akiko-TOP read-write-DAT be.excellent-TE be-NONPST
 ‘Akiko is excellent at reading and writing.’
 NOT: ‘Akiko is being excellent at reading and writing.’

Kindaichi’s classification is syntactically and semantically based: statives and stative potentials form distinct classes based on whether they can appear in the *-te iru* form (stative potentials) and the simple tenses (statives), while activity and instantaneous verbs are distinguished from one another based on their interpretations in the *-te iru* form, ongoing (activity) and resultative (instantaneous) respectively.

3.2.2 The meaning of *-te iru*

I have argued in Chapter 2 that the English progressive marker *-ing* encodes non-atomicity ([−AT]) in Asp_A , indicating that the event has discernible subparts rather than being an atomic unit and yielding an imperfective interpretation. Given that the Japanese *-te iru* form is usually described in the literature as the imperfective or progressive form (Ogihara 1998; Shirai 2000), we might suppose that the Asp_A projection is active in the Japanese Infl, as in English, and that the *-te iru* form is the spell-out of non-atomicity. This would mean that *iru* is an Infl element that spells out [−AT] in Asp_A , encoding imperfective viewpoint aspect.

The obvious problem with analyzing *iru* as a spell-out of Asp_A is that it can appear independently as the main verb ‘be.’ As discussed in section 2.4.3, Cowper (2005) observes that only eventive clauses may appear with *-ing*; that is, marked viewpoint aspect entails eventiveness. However, whenever *iru* appears independently, as in (96), it receives a stative interpretation, either existential (i) or locative (ii):

- (96) Sensei-ga i-ru.
 teacher-NOM be-NONPST
 i. ‘There is a teacher.’
 ii. ‘The teacher is here.’

There is no possible eventive interpretation of (96), and thus the entailment of eventiveness by the imperfective contradicts both of the possible meanings of the clause. A possible solution to this problem could be to posit two different lexical items for *iru*: an Infl element that spells out non-atomicity in Asp_A and a verb that denotes existence.³¹ Given this stipulation, the stative interpretations of *iru* in (96) do not preclude different interpretations in the *-te iru* form.

However, even with this stipulation, the treatment of *-te iru* as the spell-out of non-atomicity in Asp_A in the Infl system remains problematic. This analysis is straightforward for clauses with activity verbs, which denote events and usually receive an ongoing interpretation in the *-te iru* form. In such cases, as in (97) below, the event denoted by the verb would be made internally accessible due to [-AT] in Asp_A (spelled out by *-te iru*), yielding an imperfective clause that mirrors the English progressive construction:

- (97) Kumiko-wa ima yo-nde **i-ru**.
 Kumiko-TOP now read-TE be-NONPST
 ‘Kumiko is reading now.’

The interpretation of *-te iru* clauses with instantaneous verbs is somewhat more problematic. Like activity verbs, instantaneous verbs denote events, but they receive a just-finished interpretation in the *-te iru* form rather than an ongoing interpretation, as shown in (98) below:

- (98) Inu-wa shin-**de i-ru**.
 dog-TOP die-TE be-NONPST
 ‘The dog is dead.’
 NOT: ‘The dog is dying.’

As discussed in section 2.3.3, many English achievement verbs, such as *die*, can receive ongoing interpretations in the imperfective in spite of the fact that they lack subparts; while the events themselves are atomic, they may be preceded by a preparatory phase,

³¹In addition to the empirical shortcomings described below, this analysis also has the theoretical disadvantage of violating the one form/one meaning principle (Johns 1992; cf. Cowper 1998), according to which forms that are phonologically identical are assumed to be lexically identical in the unmarked case.

which may be made non-atomic via the projection of Asp_A valued as $[-\text{AT}]$ in Infl (e.g., *The dog is dying*). However, this is not possible for Japanese instantaneous verbs in the *-te iru* form. (98) cannot describe an ongoing event of the dog dying, only a completed event of the dog having died. Furthermore, because the construction in (98) denotes a state, *iru* cannot encode non-atomicity; features that encode viewpoint aspect are dependent on the feature Event (following Cowper 2005), as discussed in section 2.4.3. Treating the *-te iru* form as a spell-out of a dependent feature of Event would be incompatible with the interpretation of the clause in (98). Thus, no part of the eventuality described in (98) can be made internally accessible in the *-te iru* form, making the interpretation of instantaneous verbs problematic if we treat *iru* as the spell-out of Asp_A in Infl.³²

A similar set of problems arises for another reading of the *-te iru* form that is also difficult to reconcile with this analysis. In addition to the ordinary interpretations of *-te iru* shown in (97) and (98), there is another reading, the experiential reading, in which the completion of the event described by the main verb is treated as a property of the subject.³³ In (99) and (100) below, the subject's prior experiences of having eaten well and having fallen down are asserted as properties:

- (99) John-wa kesa kichinto tabe-te i-ru.
 John-TOP this.morning properly eat-TE be-NONPST
 'John has the experience of having eaten well this morning.'
 (Ogihara 1998, p. 98, his (25b))
- (100) Kare-wa zenkai tochuu-de taore-te i-ru node, konkai-mo
 he-TOP last.time half-at fall-TE be-NONPST because this.time-too
 abunai.
 uncertain
 'Since he fell down halfway through last time, he probably won't make it this
 time either.'
 (Ogihara 1998, p. 97, his (24b))

Like the just-finished interpretation that instantaneous verbs get in the *-te iru* form, the experiential reading describes a state that results from some prior event. However, it is even more difficult to interpret this reading as an instantiation of viewpoint aspect. While the interpretation of the *-te iru* form with an instantaneous verb describes a state

³²An alternative analysis could be to treat *-te iru* as encoding $[\text{+AT}]$ rather than $[-\text{AT}]$, which would result in the event of the dog dying being interpreted as a single atomic unit. However, this would make it impossible to determine the default interpretation of the clause in the absence of Asp_A ; if *-te iru* could encode both atomicity and non-atomicity, the absence of Asp_A would no longer be contrastive. I therefore dismiss this possibility.

³³The experiential reading is somewhat marked and usually requires context. In fact, for one of my consultants, this reading is ungrammatical.

that follows directly from a recently completed event, the completed event in an experiential *-te iru* construction is temporally removed from the state. There is no immediate transition from the causing event to the resultant state as there is for instantaneous verbs, and it is thus even more problematic to determine the target of non-atomicity (or atomicity) with this reading than it is for the just-finished interpreted normally obtained by instantaneous verbs in the *-te iru* form.

Finally, the behaviour of stative potentials is a further piece of counter-evidence for treating *-te iru* as an imperfective form. Stative potentials must appear in the *-te iru* form, but, by definition, they describe states; in fact, we will see in section 3.4.5.1 below that stative potentials may describe events that explicitly do not result from a prior event (unlike the just-finished reading and the experiential reading described above). As we have seen in section 2.4.3, Cowper (2005) shows that the presence of any feature encoding viewpoint aspect entails that the clause describes an event. Therefore, there is a mismatch between the eventiveness entailed by Asp_A and the denotation of the verb: paradoxically, under this analysis, stative potentials would always encode eventiveness, but would never denote events.

The above evidence shows that the progressive reading of *-te iru* is not its only interpretation, or even its primary interpretation. Based on this, I conclude that *-te iru* is not the spell-out of Asp_A in Infl; in other words, the *-te iru* construction is not an imperfective construction in the sense of Cowper (2005). Thus, the characterization of this form as progressive, imperfective, or continuative (Shirai 2000; Ogihara 1998) is inaccurate.

3.2.3 Other auxiliary constructions

Kindaichi (1957) bases his verb classes on the interaction of different verbs with the *-te iru* form. However, in addition to this form, verbs may appear in a number of other auxiliary constructions, such as *-te shimau*³⁴ ‘do completely’ and *sugiru* ‘do/be too much.’ The different interpretations and distribution patterns of the different verb classes indicate that these classes are not primitives, but must be assemblages of properties, which dictate the contexts in which they can and cannot appear. Additionally, the auxiliaries themselves interact with one another in various ways, which raises questions about the syntactic features that they contribute to the aspectual calculation of a clause.

³⁴The stem of the verb *shimau* is *shimaw*.

The *-te shimau* form is frequently described in the literature as the completive construction, signifying that the event described by the main verb is completed and that the speaker is somehow emotionally affected by this completion.³⁵

- (101) a. Taroo-wa ringo-o tabe-ta.
 Taroo-TOP apple-ACC eat-PST
 ‘Taroo ate the apple.’
- b. Taroo-wa ringo-o tabe-**te shima-tta**.
 Taroo-TOP apple-ACC eat-TE put.away-PST
 ‘Taroo completely ate the apple up (unfortunately).’
- (102) a. Kingyo-wa shin-da.
 goldfish-TOP die-PST
 ‘The goldfish died.’
- b. Kingyo-wa shin-**de shima-tta**.
 goldfish-TOP die-TE put.away-PST
 ‘The goldfish died.’

(Iwasaki 2002, p. 118, his (35))

While (101a) is semantically neutral, (101b) emphasizes the fact that the apple is completely gone, and that this somehow affects the speaker. (102a) carries no particular emphasis, while (102b) conveys that it is irreversible and unfortunate that the goldfish has died. The way in which the speaker is affected by the event is understood through the context; *-te shimau* can express surprise, disappointment, relief, etc. (Strauss 2002).

Nightingale (1999) claims that all of Kindaichi’s (1950) verb classes are grammatical in the *-te shimau* form except for stative verbs. However, this does not seem to be the case. Stative verbs are indeed ungrammatical in this form, as shown in (103) below:

- (103) *Toronto-ni i-**te shima-tta**.
 Toronto-DAT be-TE put.away-PST
 [Intended] ‘I ended up being in Toronto (unfortunately).’

However, stative potentials are also for the most part³⁶ ungrammatical with *-te shimau*, as in (104) and (105):

³⁵In Clarke (2005a), I describe this construction as encoding “irreversible” aspect. I discuss this in more detail in section 3.3.1 below.

³⁶The stative potential *niru* ‘to resemble’ is grammatical with *-te shimau*. I have argued previously that this is because *niru* is ambiguous between a stative potential and an activity; the *niru* that is compatible with *-te shimau* is the activity, not the stative potential. See Clarke (2005b) for details.

- (104) *Yoku benkyoo shi-ta ga, arifure-**te** **shima-tta.**
 often study do-PST but be.mediocre-TE put.away-PST
 [Intended] ‘I studied frequently, but I was completely/ended up being mediocre.’
- (105) *Amari benkyoo shi-naka-tta ga, sugure-**te** **shima-tta.**
 seldom study do-NEG-PST but be.excellent-TE put.away-PST
 [Intended] ‘I seldom studied, but I was completely/ended up being excellent.’

The stative potentials *arifureru* ‘be mediocre’ and *sugureru* ‘be excellent’ are ungrammatical³⁷ in the *-te shimau* construction, just like stative verbs like *iru* ‘be.’ This indicates that, while these two classes differ in terms of their interaction with the *-te iru* form, they must share (or lack) a common property that prevents them both from appearing with *-te shimau*. What is this common property, and what is the root of the incompatibility with *-te shimau*?

The interaction of states and stative potentials with the suffix *suguru* ‘do/be too much’ (or, colloquially, ‘do/be to a large extent’) raises further questions about the properties of these classes. *Suguru* can take an item of any lexical category (verb (106), *i*-adjective (107a) or *na*-adjective (107b),³⁸ or noun (108)) as its base:

- (106) Kinoo tabe-**sugi**-ta.
 yesterday eat-too.much-**ta.**
 ‘Yesterday I ate too much.’
- (107) a. Keeki-wa oishi-**sugi**-ru.
 cake-TOP delicious-too.much-NONPST
 ‘Cake is so delicious.’
 b. Kono onna-no hito-wa kirei-**sugi**-ru.
 this female-GEN person-TOP pretty-too.much-NONPST
 ‘This woman is so pretty.’
- (108) Anata-wa itsumo sensei-**sugi**-ru yo!
 you-TOP always teacher-too.much-NONPST EXCL
 ‘You’re always too much of a teacher!’
 (Context: A wife speaking to a husband who lectures her too much.)

³⁷Michiya Kawai (p.c.) points out that although (105) is not a “good” sentence, *sugureru* sounds better in the *-te shimau* form than *arifureru* does. My hypothesis is that *sugureru* may be more coercible into an eventive reading than *arifureru* is, but I leave an in-depth discussion of the lexical properties of particular stative potential verbs to future research.

³⁸Japanese adjectives fall into two morphological classes: *i*-adjectives, which take inflection directly when used predicatively, and *na*-adjectives, which require a copula when used predicatively.

Stative verbs can appear with *sugiru*, as shown in (109) below. Stative potentials can appear with *sugiru* as well, but only if they are in the *-te iru* form, as in (110a); otherwise, they are ungrammatical, as in (110b):

- (109) Uchi-ni i-**sugi**-ru yo!
 house-DAT be-too.much-NONPST EXCL
 ‘You’re at home too much!’
- (110) a. Kare-wa chichi-ni ni-**sugi**-te i-ru.
 he-TOP father-DAT resemble.too.much-TE be-NONPST
 ‘He looks too much like his father.’
 b. *Kare-wa chichi-ni ni-**sugi**-ru.
 he-TOP father-DAT resemble.too.much-NONPST

This provides us with additional evidence for determining the properties of verb classes and auxiliaries. The auxiliary *sugiru* must differ from *-te shimau* in terms of what syntactic features it contributes to the clause, since both statives and stative potentials can appear with *sugiru* and neither can appear with *-te shimau*. However, even with *sugiru*, stative potentials must still be in the *-te iru* form. Thus, *sugiru* must not contribute any properties that would allow stative potentials to appear without *-te iru*.

We also observe that *sugiru* differs from both *-te iru* and *-te shimau* in that it is suffixed directly to the main verb, while in the latter two constructions, the auxiliary is a separate word, with the main verb appearing in the *-te* form. What is the significance of this distinction between the auxiliaries?

It is possible to have multiple auxiliaries in a single clause, but only within certain parameters. We observe in (110a) above that *sugiru* and *-te iru* can co-occur. Furthermore, *-te iru* and *-te shimau* can appear together, but only if *-te shimau* appears before *-te iru* (111a). The reverse order is ungrammatical (111b):

- (111) a. Toshiko-wa keeki-o tabe-te shima-tte i-ru.
 Toshiko-TOP cake-ACC eat-TE put.away-TE be-NONPST
 ‘Toshiko has eaten all the cake up.’
 b. *Toshiko-wa keeki-o tabe-te i-te shima-u.
 Toshiko-TOP cake-ACC eat-TE be-TE put.away-NONPST

Sugiru and *-te shimau* can also co-occur, provided that *sugiru* comes before *-te shimau*:

- (112) a. Doonatsu-o tsukuri-sugi-te shima-tta.
 donuts-ACC make-too.much-TE put.away-PST
 ‘I made too many donuts, unfortunately.’
- b. *Doonatsu-o tsuku-tte shimai-sugi-ta.
 donuts-ACC make-TE put.away-too.much-PST

Finally, all three auxiliaries can co-occur in the same clause. As we would expect, when all three are present, *sugiru* appears before *-te shimau*, which appears before *-te iru*, as in (113) below:

- (113) Doonatsu-o tsukuri-sugi-te shima-tte i-ru.
 donuts-ACC make-too.much-TE put.away-TE be-NONPST
 ‘I’ve made too many donuts, unfortunately.’

The fact that these auxiliaries appear together in a particular order indicates that they occupy different syntactic positions and contribute different features.

These three auxiliary constructions, *-te iru*, *-te shimau*, and *sugiru*, interact with the verb classes and with each other in different ways. This suggests that there are multiple morphosyntactic features in Japanese that dictate their distribution. In the rest of this chapter, I use the data presented here and the framework established in Chapter 2 to determine these features.

3.2.4 Summary

In this section, I have presented Kindaichi’s (1950) verb classification system for Japanese, which is similar but not identical to Vendler’s (1957) system of *Aktionsarten*. Kindaichi’s classes accurately reflect certain syntactic and semantic properties of Japanese verbs (i.e., activities and instantaneous verbs have different interpretations in the *-te iru* form; stative potentials must appear with *-te iru* and statives must not), but the system does not present an analysis of how these properties are encoded. I have shown that previous descriptions of the *-te iru* form as continuative, progressive, and imperfective (Ogihara 1998; Shirai 2000) are not altogether accurate. Furthermore, the auxiliary constructions *-te shimau* and *sugiru* reveal further similarities and differences between the verb classes, in addition to contributing properties of their own that affect the interpretation of a particular clause. The chart below summarizes the positions in which the various verb types and auxiliary constructions can appear (alone, in the *-te iru* form, in the *-te shimau* form, and with the suffix *sugiru*).

The discussion above reveals that Kindaichi’s proposed classification system leaves a number of questions to be addressed: What is the exact contribution of the *-te iru*

Table 3.2: Possible positions of verbal elements

	alone	<i>-te iru</i>	<i>-te shimau</i>	<i>sugiru</i>
States	Y	N	N	Y
Activities	Y	Y	Y	Y
Instantaneous	Y	Y	Y	Y
Stative potentials	N	Y	N	Y
<i>-te iru</i>	—	—	N	N
<i>-te shimau</i>	—	Y	—	N
<i>sugiru</i>	—	Y	Y	—

form, given that it does not encode non-atomicity at the Infl level? What syntactic properties characterize the verb classes, and how does the interpretation of the *-te iru* form fall out from these properties? What features do the other auxiliaries contribute, and how are these auxiliaries hierarchically structured with respect to one another? In the next section, I argue that the contribution of the *-te iru* form is stativity, and that this property is situated within the *vP* in Japanese.

3.3 *vP*

I have shown in the previous section that the *-te iru* form is not an imperfective construction as defined in Chapter 2: it does not spell out the inflectional property of non-atomicity as the English imperfective construction does. How, then, should this form be characterized? In this section, I argue that the *-te iru* form is in fact a stative construction; specifically, I propose that *iru* spells out a stative feature within the Japanese *vP*. The implication of this proposal is that in Japanese, states are formally more marked than events.

3.3.1 The markedness of states vs. events

Recall that according to Vendler's (1957) eventuality classification, states are typically differentiated from events by their lack of event structure; that is, while events happen, states merely hold. In most studies of aspectual feature specification, events are thought to be more marked than states (i.e., events possess additional properties not possessed by states). For example, Davidson (1967), expanding on a proposal made by Reichenbach (1947), proposes that a verb that denotes an action takes an event variable, which encodes the dynamicity of the eventuality denoted by the verb and is taken as an argument by the verb. This is shown in (114) below: the event variable *e* is bound by the existential

quantifier, and is an argument of the main verb *butter* as well as of the adverbial modifiers *in the bathroom*, *with a knife*, and *at midnight*.

- (114) a. Jones buttered the toast in the bathroom with a knife at midnight.
 b. $\exists e$ [buttered (Jones, the toast, *e*) & in-the-bathroom (*e*) & with-a-knife (*e*) & at-midnight (*e*)]

Verkuyl (1993) also takes eventiveness as a marked property. He encodes dynamicity of a verb via the feature [+ADD TO], which indicates an ongoing event. Cowper (2005) also takes Event, not State, to be a marked feature in her feature geometry for Infl: an unmarked Infl node receives a default stative interpretation, while eventiveness must be encoded via a marked feature. Although eventiveness is widely thought to be marked over stativity, there is evidence that in Japanese, it is states rather than events that are morphosyntactically marked. Just as Kyriakaki (2006) argues that different languages may take either Interval or Moment to be the marked dependent feature of Event, I argue in this section that different languages may take either states or events as the morphosyntactically marked eventuality type, and that in Japanese, states are the marked eventuality type, not events.

Recall that Hallman (2009a) describes the English progressive form as “stative” in that progressive predicates are evaluated at moments rather than at temporal intervals. We saw in section 3.2 that (a) with activity verbs, the unmarked interpretation of the *-te iru* form mirrors the English imperfective; (b) the other interpretations of the *-te iru* form (i.e., the experiential reading, the just-finished interpretation of instantaneous verbs, and the stative interpretation of stative potentials) all describe states; and (c) stative verbs are ungrammatical in the *-te iru* form. Thus, I propose that the *-te iru* form encodes stativity. When attached to an activity verb, such as *kaku* ‘write’ or *hashiru* ‘run,’ the result is an event embedded within a state (the so-called progressive interpretation: the predicate is asserted of the reference time):

- (115) Kare-wa hon-o ka-ite i-ru.
 he-TOP book-ACC write-TE be-NONPST
 ‘He is writing a book (right now).’

When attached to an instantaneous verb, such as *taoreru* ‘faint’ or *shinu* ‘die,’ the state is the property resulting from the completion of the event:

- (116) Taro-ga taore-te i-ru.
 Taro-NOM faint-TE be-NONPST
 ‘Taro has fainted (i.e., he’s on the ground now).’

A similar interpretation obtains for both instantaneous verbs and activity verbs with the experiential reading: the event is attributed as a property of the subject. (117a) and (117b) are parallel to (115) and (116) above, but they both receive an experiential reading due to the context, and thus describe states that hold of the subject as a consequence of the events described by the main verbs:

- (117) a. Kare-wa hon-o takusan ka-ite i-ru.
 he-TOP book-ACC many write-TE be-NONPST
 ‘He has written many books.’
 b. Kare-wa zenkai tochuu-de taore-te i-ru node, konkai-mo
 he-TOP last.time half-at fall-TE be-NONPST because this.time-too
 abunai.
 uncertain
 ‘Since he fell down halfway through last time, he probably won’t make it
 this time either.’

(Ogihara 1998, p. 97, his (24b))

When attached to a stative potential, such as *sugureru* ‘be excellent,’ the *-te iru* construction yields a straightforward state:

- (118) Manami-wa yomi-kaki-ga sugure-te i-ru.
 Manami-TOP reading-writing-NOM be.excellent-TE be-NONPST
 ‘Manami is excellent at reading and writing.’

However, the *-te iru* construction is not available for stative verbs, like *iru* ‘be,’ because its contribution would be vacuous; as *iru* is already stative, nothing would be added by the *-te iru* construction:³⁹

- (119) *Yumiko-ga Tookyoo-ni i-te i-ru.
 Yumiko-NOM Tokyo-DAT be-TE be-NONPST

All of these results are compatible with the proposal that *-te iru* creates a state out of whatever it attaches to.

³⁹We have seen in section 2.3.2.3 above that the same feature cannot project multiple times; recall Cowper and Hall’s (2012) argument that inherently individuated nouns (i.e., nouns specified as #), such as *furniture*, cannot be embedded within a #P.

Further evidence for the claim that states are marked over events in Japanese comes from the *-te shimau* form. We have seen in section 3.2.3 that states are barred from appearing in the *-te shimau* construction. As mentioned above, I have previously analyzed this auxiliary construction (Clarke 2005a) as an aspectual compression.⁴⁰ It condenses an event to the point at which the action becomes irreversible. This construction is compatible only with eventive verbs (i.e., activity verbs and instantaneous verbs), as in (120) and (121):

- (120) a. Taroo-wa ringo-o tabe-ta.
Taro-TOP apple-ACC eat-PST
'Taro ate the apple.'
- b. Taroo-wa ringo-o tabe-te shima-tta.
Taro-TOP apple-ACC eat-TE put.away-PST
'Taro completely ate the apple up (unfortunately).'
- (121) a. Kingyo-ga shin-da.
goldfish-NOM die-PST
'The goldfish died.'
- b. Kingyo-ga shin-de shima-tta.
goldfish-NOM die-TE put.away-PST
'The goldfish died (unfortunately).'

(Iwasaki, 2002, p. 118, his (35))

Neither states (122) nor stative potentials (123) can appear with *-te shimau*:

- (122) *Toronto-ni i-te shima-tta.
Toronto-DAT be-TE put.away-PST
[Intended] 'I ended up being in Toronto.'
- (123) *Yoku benkyoo shi-ta ga, arifure-te shima-tta.
often study do-PST but be.mediocre-TE put.away-PST
[Intended] 'I studied frequently, but I was completely/ended up being mediocre.'
- (Clarke 2005a, p. 33, her (34))

Just as *-te iru* yields a state, *-te shimau* yields an instantaneous verb; when this construction is put into the *-te iru* form, it receives a perfect interpretation, just as instantaneous verbs do. Consider the interpretation of the activity verb *neru* 'sleep' in (124) below:

⁴⁰As mentioned above, in addition to this aspectual compression, *-te shimau* also adds an additional semantic component; it indicates that the speaker is affected in some way by the action.

- (124) a. Megumi-ga ne-te i-ru.
 Megumi-NOM sleep-TE be-NONPST
 ‘Megumi is sleeping.’
- b. Megumi-ga ne-te shima-tta.
 Megumi-NOM sleep-TE put.away-PST
 ‘Megumi fell asleep.’
- c. Megumi-ga ne-te shima-tte i-ru.
 Megumi-NOM sleep-TE put.away-TE be-NONPST
 ‘Megumi has fallen asleep.’
 NOT: ‘Megumi is falling asleep.’

In (124b), the event of sleeping is condensed to the single part that makes the sleeping irreversible (that is, the point of falling asleep). This is confirmed by the just-finished interpretation obtained by (124c); the ongoing interpretation obtained by activity verbs is not available, even though *neru* ‘sleep’ is an activity verb, as indicated by the ongoing interpretation it receives in the *-te iru* form (124a). This indicates that the *-te shimau* construction yields an event with the properties of an instantaneous verb. Neither states nor stative potentials are compatible with this process. As neither verb type describes an event, neither has a temporal event structure that can be condensed to a point.⁴¹ Therefore, both states and stative potentials are ungrammatical in the *-te shimau* construction.

Japanese verbs have three possible distribution patterns with respect to the auxiliary constructions *-te iru* and *-te shimau*, as summarized below:

Table 3.3: Summary of Japanese verb type distribution

	States	Events	Stative potentials
Independent	Y	Y	N
With <i>-te iru</i>	N	Y	Y
With <i>-te shimau</i>	N	Y	N

The evidence presented in this section suggests that (1) the *-te iru* construction creates a state out of whatever it attaches to, and is therefore incompatible with elements that are already stative; and (2) the *-te shimau* construction compresses the eventuality structure of whatever it attaches to, yielding an instantaneous event, and is therefore incompatible with stative elements. In other words, the stative auxiliary construction is only available for non-stative predicates, and the eventive auxiliary construction is only available for eventive predicates: stative potentials and eventive verbs pattern together with respect

⁴¹I discuss the temporal properties of stative potentials in section 3.4.5 below.

to the *-te iru* form, and stative potentials and stative verbs pattern together with respect to the *-te shimau* form.⁴² This is summarized in the table below:

Table 3.4: Availability of auxiliary constructions

Verb type	<i>-te iru</i>	<i>-te shimau</i>
Stative	N	N
Stative potential	Y	N
Eventive	Y	Y

Given that stativity can be imposed on anything not already stative, while eventiveness cannot be imposed on anything that is not already eventive, I conclude that stativity is marked over eventiveness in Japanese. This is consistent with the distribution of the verb types shown above: the addition of a marked stative feature (i.e., by *-te iru*) can override the eventive interpretation of a clause, and a marked stative clause cannot be made eventive (i.e., by *-te shimau*).

3.3.2 The position of stativity

Having established that the *-te iru* form contributes a marked stative feature to a clause, we must now determine the syntactic level at which this feature is active. Strikingly, the Japanese inventory of stative verbs (i.e., verbs that are ungrammatical in the *-te iru* form, according to Kindaichi's definition) is very small. Furthermore, all of them lack real lexical content. Kindaichi (1976: 10) notes only a handful of stative verbs: *iru* 'be,' *aru* 'exist,' *dekiru* 'be able to do,' *yoo suru* 'require,' *atai suru* 'be worth,' and potential verbs (e.g., *kireru* 'can cut,' *hanaseru* 'can speak').⁴³ Three of these verbs, *dekiru* 'be able to do' (literally 'do.POT') *yoo suru* 'require,' and *atai suru* 'be worth,' contain the element *suru* 'do,' which Grimshaw and Mester (1988) identify as a light verb:⁴⁴ *dekiru*

⁴²This distribution suggests that stative potentials are neither stative nor eventive. I discuss this in section 3.4.5 below.

⁴³Kindaichi (1976) also includes *wakaru* 'be understandable' in this list, but it seems to fail his criteria for stative verbs. It is grammatical (though lower register) in the *-te iru* form, receiving the resultative interpretation that instantaneous verbs usually get in this form:

- (i) Waka-tte-ru yo.
 understand-TE-NONPST EXCL
 'I got it!' (literally: 'I have understood.')

Given that (i) is grammatical, I leave *wakaru* out in my discussion of Japanese stative verbs.

⁴⁴Grimshaw and Mester (1988) point out that when *suru* 'do' is used by itself as a main verb rather than in these compounds, it is eventive, and can therefore appear in the *-te iru* form (e.g., *Nani-o shi-te*

is the potential form of *suru*, and *yoo suru* and *atai suru* are both compounds made up of a noun (*yoo* ‘task, business,’ *atai* ‘worth, value,’) plus *suru*.⁴⁵ *Iru* and *aru* are also semantically empty, denoting existence only, animate and inanimate respectively (Kishimoto 1996). Both the small size of this class and the lack of lexical meaning of each of its members suggest that statives do not contain a root component, but are purely functional elements. However, there are two potential functional domains to which statives could belong: Infl, the domain of clausal inflection, and *v*, the domain of verbal properties. If stativity is marked in Japanese, what is its structural position?

As mentioned in Chapter 2, Kyriakaki (2006) proposes an alternative featural hierarchy for Infl to the one proposed by Cowper (2005), positing Moment as a marked dependent feature of Event. This predicts a parametric variation in language types: languages in which Interval is marked, such as English, are default perfective (that is, an eventive clause that does not encode Interval is associated with a moment by default), and languages in which Moment is marked, such as Greek, are default imperfective (that is, an eventive clause that does not encode Moment is associated with an interval by default). This introduces the possibility that other features in the geometry have similar counterparts. For example, although Event is marked in Cowper’s (2005) geometry, meaning that an unmarked clause is interpreted as stative, there could be a parallel feature State, which would entail that an unmarked clause would be interpreted as eventive.⁴⁶ If this is the case in Japanese, then the *-te iru* construction could be the spell-out of this feature. Alternatively, stativity could be encoded lower in the structure, at the level of the *v*P. In this case, stativity would not take the entire clause within its scope, but only some part of the predicate.

The domain to which stativity belongs would not necessarily make a structural difference. Recall from section 3.2.3 that in constructions with multiple auxiliaries, *iru* must always be the final auxiliary, as shown in (113) and repeated in (125):

- (125) Doonatsu-o tsukuri-sugi-te shima-tte i-ru.
 donuts-ACC make-too.much-TE put.away-TE be-NONPST
 ‘I’ve made too many donuts, unfortunately.’

i-ru no? ‘What are you doing?’) without violating Kindaichi’s (1950) generalization that stative verbs cannot appear in this construction. I discuss this further in section 3.4.1 below.

⁴⁵As *dekiru* is the potential form of *suru*, it is a derived verb.

⁴⁶Within Cowper’s theory, given that eventiveness would be unmarked in this case, neither Interval nor Moment could be present in the geometry. In other words, we would expect that a language that marked State rather than Event would lack a distinction between perfective and imperfective viewpoint aspect.

- (127) a. Nihongo-ga deki-**ta**.
 Japanese-NOM do.POT-PST
 ‘I used to be able to speak Japanese.’
 b. *I must**ed** go to the store.
 Cf. I *had to* go to the store.

Japanese stative verbs also have non-finite forms (128), unlike English modals (129):^{48,49}

- (128) Ie-ni neko-ga i-ru no-ga ureshi-i.
 house-DAT cat-NOM be-NONPST GEN-NOM happy-NONPST
 ‘Having a cat at home is nice.’

- (129) a. *I want to can play the violin.
 Cf. I want to be able to play the violin.
 b. *He must may play the violin.
 Cf. He must be allowed to play the violin.
 c. *She has must-en play the violin.
 Cf. She had to play the violin.
 d. *We are shall-ing play Beethoven’s *Ghost Trio*.
 Cf. We shall be playing Beethoven’s *Ghost Trio*.

(Hall 2001, p. 22, his (40))

Given that the items identified by Kindaichi (1976) as stative elements share the meanings of light verbs in other languages and display verbal morphological behaviour, I proceed from the position that these items are light verbs, and that stativity is therefore encoded within the *vP* in Japanese.

3.4 The structure of the *vP*

I have argued above that *iru* encodes stativity within the *vP*. I now turn to the structure of the Japanese *vP* as a whole. We have seen in section 3.2 above that it is possible to stack multiple auxiliaries within a single clause in a particular order, as repeated here in (130):

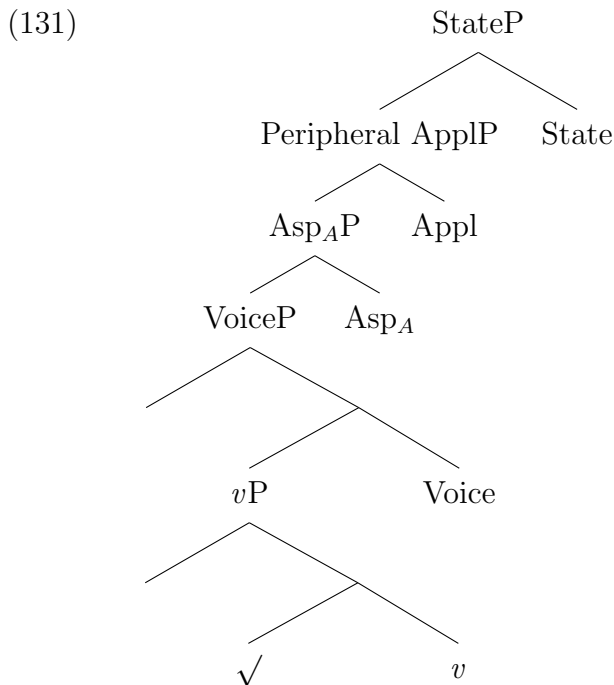
⁴⁸In addition to having no non-finite forms, English modals do not take person inflection (i), unlike English verbs (ii):

- (i) He will/*wills go to the store.
 (ii) He *go/goes to the store.

⁴⁹Other European languages have non-finite modals (e.g., French *pouvoir*, Romanian *a putea* ‘to be able to,’ cf. **to can*); this suggests that these modals are also syntactically verbs.

- (130) Doonatsu-o tsukuri-sugi-te shima-tte i-ru.
 donuts-ACC make-too.much-TE put.away-TE be-NONPST
 ‘I’ve made too many donuts, unfortunately.’

As mentioned in the previous section, the stative auxiliary *iru* comes last in the clause and takes the tense inflection of the sentence, which indicates that it is the topmost auxiliary. The excessive marker *sugiru* is suffixed directly on the verb root, suggesting that it is in the lowest structural position. This means that *-te shimau* is in between. Given this fixed order, I will argue for the following maximal structure for a Japanese *vP*:^{50,51}



There are three heads in the *vP* domain that are relevant to the calculation of aspect: *v*, State, and Asp_A.⁵² As discussed in Chapter 2, I follow Marantz (1997), Borer (2005a, b), and others in treating *v* proper as a functional head that verbalizes a root in its domain. Under DM, roots do not themselves have syntactic properties; rather, they inherit syntactic properties when they are selected by a categorizing head (*v*, *n*, or *a*). Syntactically, the *v* head allows its root complement to bear verbal morphology; semantically, it introduces an event variable and the root complement specifies the type

⁵⁰As indicated by Japanese word and morpheme order, I assume right-headed structures with left-branching specifiers. Thus, I do not assume Kayne’s (1994) linear correspondence axiom, although nothing crucial rests on this.

⁵¹As we will see, the root itself may be complex if there are root modifiers.

⁵²I do not make any proposals for the featural content of Voice; thus, I do not discuss this head in detail. Peripheral Appl does not itself introduce any aspectual features into the syntax, but it interacts with the Asp_A projection. I discuss this interaction in section 3.4.3.3.

of event. A state, as discussed in section 3.3 above, is evaluated with respect to a single moment rather than a temporal interval; thus, the State head encodes the fact that the predicate is durationless. Asp_A encodes the property of atomicity: the presence of this head compresses an event to a single part. Different featural specifications on these three heads result in the insertion of different vocabulary items. I propose the following featural specifications for the inventory of functional items given in (132)–(134) below:⁵³

$$(132) \quad \begin{array}{ll} \mathbf{v} & \\ su & \leftrightarrow v \\ \emptyset & \leftrightarrow v / \surd \\ -sugi & \leftrightarrow v \text{ [EXCESSIVE]} \end{array}$$

$$(133) \quad \begin{array}{ll} \mathbf{State} & \\ i & \leftrightarrow \text{State} \\ ar & \leftrightarrow \text{State [F]} \\ -e & \leftrightarrow \text{State [ABILITY]} \end{array}$$

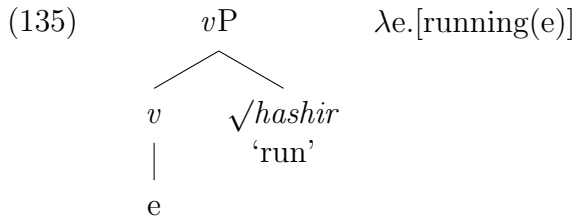
$$(134) \quad \begin{array}{ll} \mathbf{Asp}_A & \\ \emptyset & \leftrightarrow Asp_A \text{ [+AT]} \end{array}$$

In this section, I will argue that this small inventory of heads and features yields the full range of predicate types presented in section 3.2 above: I discuss *v* in section 3.4.1, State in section 3.4.2, and Asp_A in section 3.4.3. In section 3.4.4, I summarize the interaction of these three heads and show the relevant structures, and in section 3.4.5, I present an account of stative potentials that works with the analysis I propose here.

3.4.1 *v*

As mentioned above, the *v* head introduces an event variable (i.e., it asserts that something happened) and verbalizes a root in its domain. An example of a semantic representation is shown in (135) below; the combination of the *v* and the root $\surd hashir$ ‘run’ causes the *v*P as a whole to be interpreted as an event of running:

⁵³I use the stems of verbs as the spell-outs of functional heads rather than citation forms (e.g., *i* vs. *iru*), as the citation forms have morphological endings that spell out other functional heads.



If *v* introduces an event variable, it follows that states cannot be merged in this head. As stative verbs by definition do not describe events, they are incompatible with a categorizing head that introduces an event variable. It also seems unlikely that *v* would introduce stative potentials, since, as mentioned in section 3.2.2 above, clauses whose verbs are stative potentials always describe states rather than events. Thus, the *vP* projection is present only in clauses with verbs that belong to Kindaichi’s (1950) classes of activity verbs and instantaneous verbs. I will discuss the structure of statives and stative potentials in sections 3.4.2 and 3.4.5 respectively.

3.4.1.1 $\emptyset \leftrightarrow v / \checkmark$

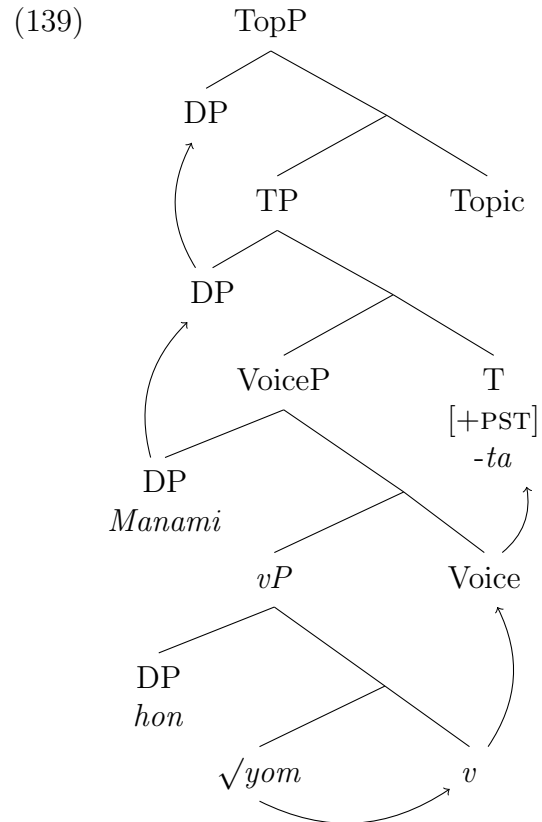
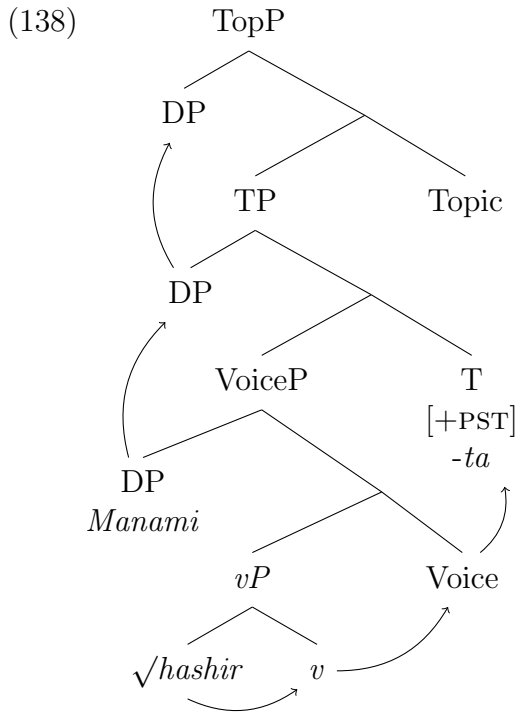
A *v* head with no additional features that takes a root as a complement is phonologically null. The root moves to the *v* head, and then the complex moves to T to realize tense.⁵⁴ This is shown for an intransitive clause (136) in (138) and a transitive clause (137) in (139) below:⁵⁵

(136) Manami-wa **hashi**-tta.
 Manami-TOP run-PST
 ‘Manami ran.’

(137) Manami-wa hon-o **yo**-nda.
 Manami-TOP book-ACC read-PST
 ‘Manami read a book.’

⁵⁴If there is an additional aspectual projection (i.e., StateP or Asp_AP) between the *vP* and T, the head of the topmost projection moves to T and the root remains in *v*. Since Japanese verb stems cannot appear independently (i.e., verbs must take a suffix), a *v* + \checkmark that cannot move to T takes the default predicative suffix *-te*.

⁵⁵In my trees, topic DPs undergo phrasal movement (indicated by arrows) from the specifier of VoiceP to the specifier of TopP, where they receive the topic marker *-wa*. I omit syntactic details that are not relevant to the aspectual interpretation of a clause (e.g., case assignment, etc.). I make the standard minimalist assumptions about the syntactic mechanisms that derive these structures, following Chomsky (2000, 2005).



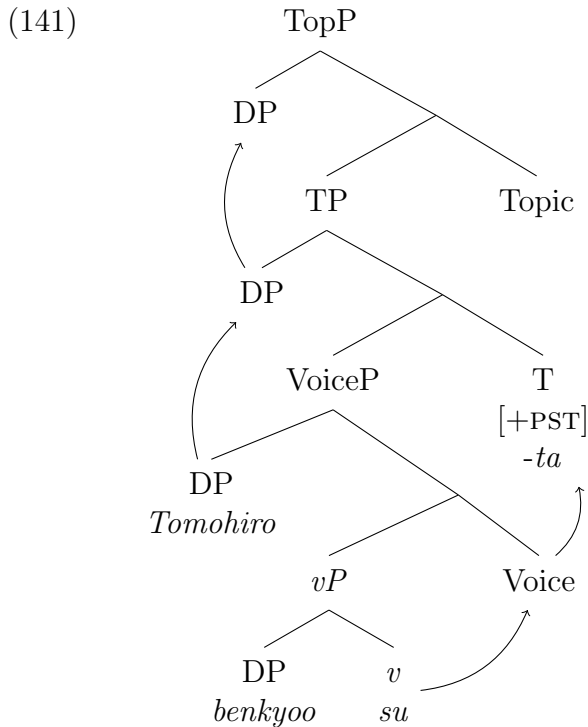
In both trees, the root combines with *v* and the complex moves through *Voice* to *T*, where the past tense marker *-ta* is added.

3.4.1.2 *su* ↔ *v*

When *v* does not have a root complement, it is realized phonologically with the verb *suru* ‘do.’ This meaning is semantically light, as is typical for *v* elements, and corresponds to the Inuktitut morpheme *-liri* ‘do,’ which Johns (2007) identifies as a *v* element. When used as a main verb, *suru* usually occurs with a DP direct object that specifies the type of action (cf. English *do a dance*), as in (140):⁵⁶

- (140) Tomohiro-wa benkyoo-o **shi**-ta.
 Tomohiro-TOP study-ACC do-PST
 ‘Tomohiro studied.’ (literally: ‘Tomohiro did studying.’)

⁵⁶*Suru* can also appear in many noun-verb compounds (e.g., *benkyoo suru* ‘study’ vs. *benkyoo-o suru* literally ‘do studying’); in these cases, the type of noun determines the aspectual interpretation of the compound. I discuss this in section 3.4.2 below.



In (141), *benkyoo* ‘study’ is the direct object: it merges with *v* and is assigned accusative case there. Because there is no root complement to the *v*, the stem *su* is inserted in the head, which then moves through Voice to T in order to bear tense morphology.

3.4.1.3 *-sugi* ↔ *v* [EXCESSIVE]

Finally, the suffix *-sugi* ‘do/be too much’ is another possible spell-out of the *v* head. As mentioned in section 3.2.3, the *sugiru* construction differs from the auxiliary constructions *-te iru* and *-te shimau* in that it is a suffix. Rather than occurring with a verb in the *-te* form as *iru* does (142), it attaches directly to a root (143):

- (142) a. Keiko-wa nai-te **i**-ru.
Keiko-TOP cry-TE be-NONPST
‘Keiko is crying.’
- b. *Keiko-wa nai-te **sugi**-ru.
Keiko-TOP cry-TE too.much-NONPST
- (143) a. *Keiko-wa naki-**i**-ru.
Keiko-TOP cry-be-NONPST
- b. Keiko-wa naki-**sugi**-ru.
Keiko-TOP cry-too.much-NONPST
‘Keiko cries too much.’

This morphological property indicates that *-sugi* spells out *v*. As noted above, when *v* cannot move to T due to the presence of a higher aspectual projection, it remains in situ and the root takes the suffix *-te*. When *-sugi* is present, the root does not appear in the *-te* form. Instead, it takes *-sugi* as a suffix, and the tense morphology is added to the whole $\checkmark + -sugi$ complex. This indicates that *-sugi* does not head a separate projection between *v* and T, but is itself the *v* head that moves to T.⁵⁷

There is further morphological evidence that *-sugi* is an instantiation of *v*. The *sugiru* construction occurs with roots of all types, including roots that are canonically used as adjectives or nouns, but it always bears verbal morphology, irrespective of the root. For example, the stem *oishi* ‘delicious’ takes the adjectival inflection *-i* when it appears by itself (144), but it takes the verbal inflection *-ru* when it appears with *-sugi* (145).⁵⁸

- (144) a. Keeki-wa oishi-i.
 cake-TOP delicious-NONPST
 ‘Cake is delicious.’
 b. *Keeki-wa oishi-ru.
 cake-TOP delicious-NONPST
- (145) a. Keeki-wa oishi-**sugi**-ru.
 cake-TOP delicious-too.much-NONPST
 ‘Cake is so delicious.’
 b. *Keeki-wa oishi-**sugi**-i.
 cake-TOP delicious-too.much-NONPST

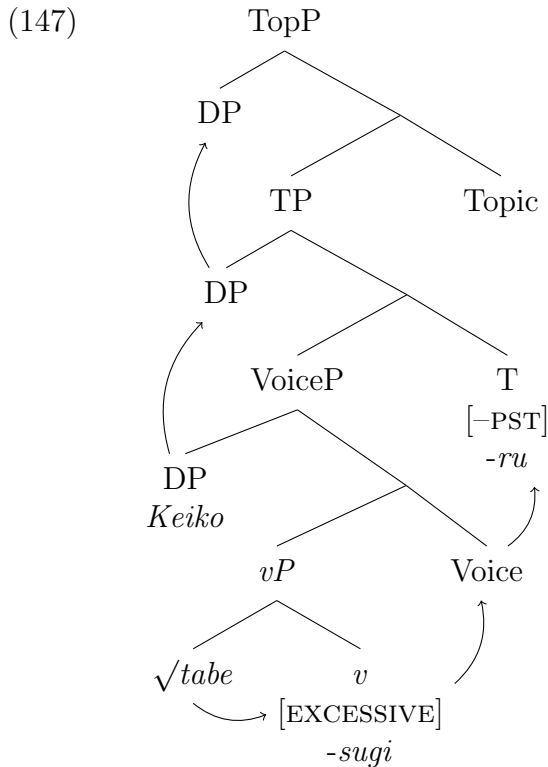
Again, this suggests that *-sugi* is a spell-out of *v*. Whatever type of root it takes as its complement, the $\checkmark + -sugi$ complex bears verbal morphology. Thus, *-sugi* is a category definer: it verbalizes whatever it takes in its domain.

The structure for a sentence with *-sugi* as its *v* head is as follows:

- (146) Keiko-wa tabe-**sugi**-ru.
 Keiko-TOP eat-too.much-NONPST
 ‘Keiko eats too much.’

⁵⁷We know that *-sugi* does not head a State projection because it can be put into the *-te iru* form (e.g., *Keiko-wa tabe-sugi-te i-ru*. ‘Keiko is eating too much.’).

⁵⁸The use of *-sugi* to mean ‘so’ rather than ‘too much,’ as in (145), is typically restricted to non-formal speech situations.



The root \sqrt{tabe} moves to *v*, where the suffix *-sugi* is attached. The whole complex then moves through Voice to T, where the non-past suffix *-ru* is attached.

The meaning component [EXCESSIVE] that *-sugi* spells out in addition to *v* highlights the fact discussed in section 2.3.2.1 that maintaining a strict divide between lexical items and grammatical items (as Borer 2005a, b advocates) is problematic. Although *-sugi* has an obvious lexical component in that it spells out more than grammatical features, it has a grammatical function in that it is a category definer. This is akin to prepositions, which can also be very lexical in spite of being grammatical items (e.g., *I'm **over** it*).

3.4.1.4 Summary

I have proposed that the semantic function of the *v* head is to introduce an event variable. Based on this proposal and the behaviour of activity verbs and instantaneous verbs, I therefore adopt the following inventory of *v* heads for Japanese:

- (148)
- | | | |
|--------------|-------------------|---------------------------|
| <i>v</i> | | |
| <i>su</i> | \leftrightarrow | <i>v</i> |
| \emptyset | \leftrightarrow | <i>v</i> / $\sqrt{\quad}$ |
| <i>-sugi</i> | \leftrightarrow | <i>v</i> [EXCESSIVE] |

3.4.2 State

As discussed in section 3.3.2 above, Japanese stative verbs are a small class of semantically light items. Given their impoverished meanings and the fact that these meanings correspond to the meanings of other elements that have been identified as light verbs (e.g., Johns’s (2007) inventory of Inuktitut light verbs), I conclude that these elements do not contain roots and are therefore functional. Further, we have seen in section 3.3.1 that stativity can be applied to anything not already stative; the *-te iru* form imposes stativity on whatever it attaches to. Thus, I propose that Japanese stative verbs head a stative projection, which I will label StateP. The fact that the *-te iru* form can select and stativize a *v*P indicates that StateP is distinct from *v*P; however, State is similar to *v* in that it moves to T to host tense morphology.

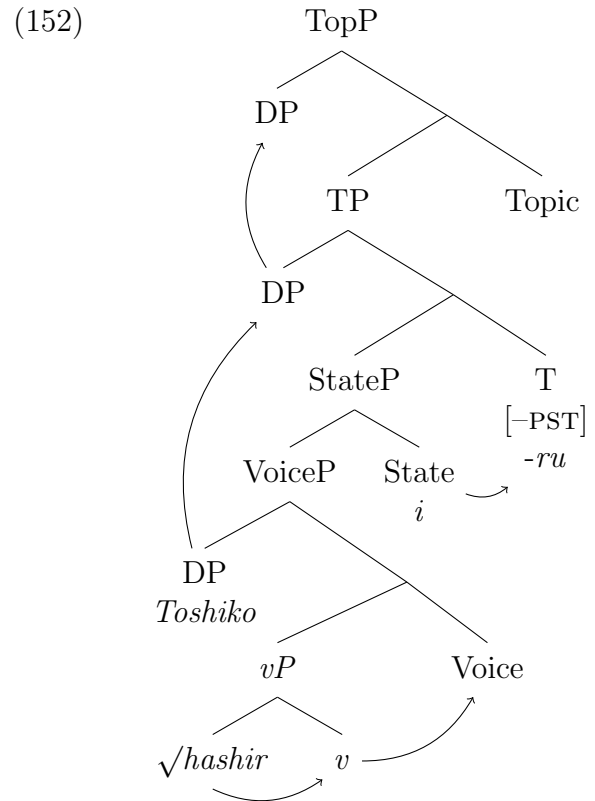
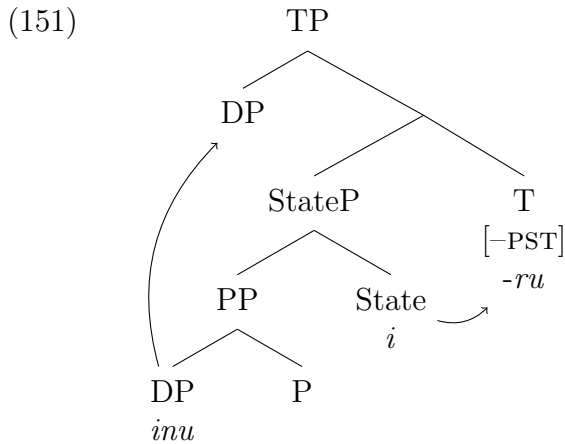
3.4.2.1 *i* ↔ State

The spell-out of the State head depends on what other features are present in the morpheme. *Iru* is the most underspecified stative verb; it denotes existence (149i), location (149ii), or possession (149iii) as a main verb, and imposes stativity when used as an auxiliary (150):

- (149) Inu-ga **i**-ru.
 dog-NOM be-NONPST
 i. ‘There is a dog.’
 ii. ‘A/the dog is here.’
 iii. ‘I have a dog.’
- (150) Toshiko-wa hashi-tte **i**-ru.
 Toshiko-TOP run-TE be-NONPST
 ‘Toshiko is running.’

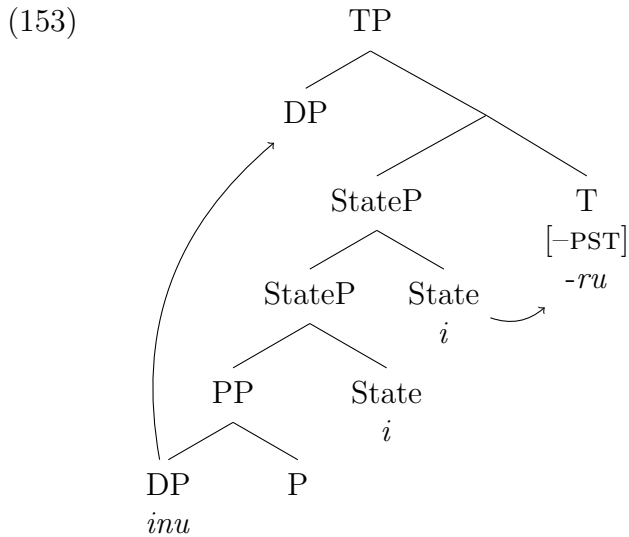
I follow Freeze (1992) in treating existential, locative, and possessive constructions (which he refers to collectively as *locatives*) as locative PPs that contain the theme argument; that is, in (149) above, *inu* ‘dog’ is merged in a PP. I propose that *iru* simply encodes stativity, and thus spells out State with no additional features. The corresponding structures for (149) and (150) are given in (151) and (152).⁵⁹

⁵⁹In the spirit of Freeze (1992), I assume that the head of the PP in locative constructions bears different features depending on the intended meaning: i.e., P may bear a locative feature if the sentence means ‘A/the dog is here,’ while P may be null for the existential reading ‘There is a dog.’ However, no part of my analysis depends on this particular structure.



In (151), the State head is spelled out by the default stative morpheme *i*, the stem of *iru* ‘be,’ and then moves to T to host the non-past suffix *-ru*. The DP *inu* ‘dog’ merges with the locative P, and then moves to the specifier of TP, where it is assigned nominative case. In (152), the activity verb *hashiru* ‘run’ is put into the *-te iru* form. Thus, the State head selects VoiceP as its complement, taking scope over the entire event. The root $\sqrt{\text{hashir}}$ moves to the (null) *v* head and then to Voice; however, because the State projection intervenes between Voice and T, the complex cannot move to T. The root $\sqrt{\text{hashir}}$ therefore takes the default predicate suffix *-te*, and the State head moves to T to bear the tense morphology.

As mentioned above, *iru* cannot appear in the *-te iru* form, as this would require multiple projections of the State head:



3.4.2.2 *aru* ↔ State [F]

There is another stative verb, *aru*, very similar in meaning to *iru*: it is also translated as ‘be,’ denotes existence, location, or possession, and can be used in an auxiliary construction to describe a state (specifically, a state that results from someone’s deliberate action). However, its use is more restricted than that of *iru*; as a main verb, it can only be used with an inanimate subject (154), and as an auxiliary, it can only be used with transitive main verbs (155a) (cf. (155b)):⁶⁰

- (154) Hon-ga **ar**-u.
 book-NOM be₂-NONPST
 i. ‘There is a book.’
 ii. ‘A/the book is here.’
 iii. ‘I have a book.’

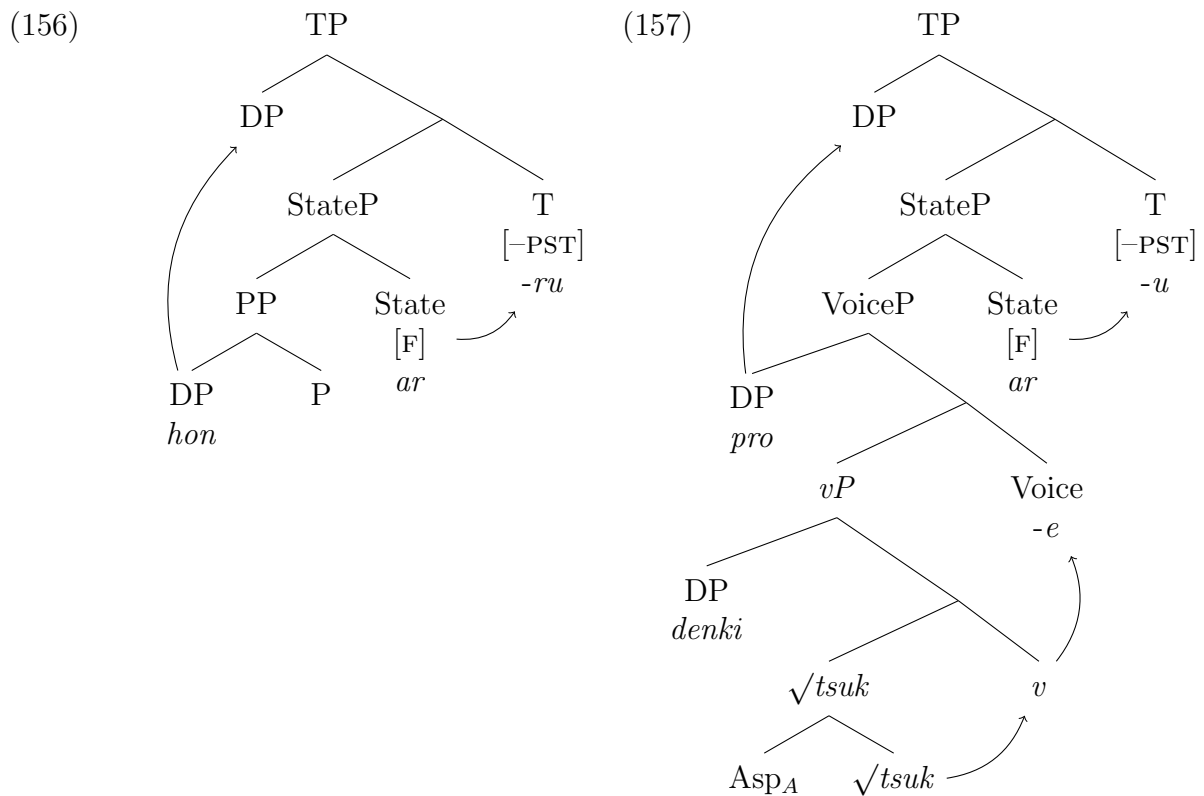
- (155) a. Denki-o tsuke-te **ar**-u.
 lights-ACC turn.on.TRANS-TE be₂-NONPST
 ‘The lights are switched on.’
 b. Denki-ga tsui-te **i**-ru.
 lights-NOM turn.on-TE be-NONPST
 ‘The lights are on.’

(Tsujimura 2007, p. 374, her (113b) and (114b))

Aru appears in a more restricted set of environments than *iru* does, and should therefore spell out an additional marked feature. However, it is not immediately obvious how

⁶⁰For simplicity, I gloss *aru* as ‘be₂’ to distinguish it from *iru*.

this set of environments should be characterized. I do not propose such a characterization here; I will simply treat *aru* as the spell-out of an abstract feature [F] in StateP. The structures for (154) and (155a) are given in (156) and (157) below.⁶¹ In (156), *ar*, the stem of *aru*, spells out the State head plus the feature [F], and then moves to T to host the non-past suffix *-ru*. State selects the locative PP, and the non-animate DP *hon* ‘book’ merges with P, then moves to the specifier of TP to get nominative case. In (157), the root \sqrt{tsuk} ‘turn on’ moves to *v* and then to Voice.⁶² The State head plus [F] selects VoiceP and is spelled out as *ar*, and then moves to T to host the non-past suffix *-u*.



Like *iru*, *aru* cannot be put into the *-te iru* form because State cannot take a StateP complement:

- (158) *Hon-ga a-tte i-ru.
book-NOM be₂-TE be-NONPST

⁶¹The root \sqrt{tsuk} ‘turn on’ is instantaneous, and therefore takes Asp_A as a modifier. I will discuss this in detail in section 3.4.3.

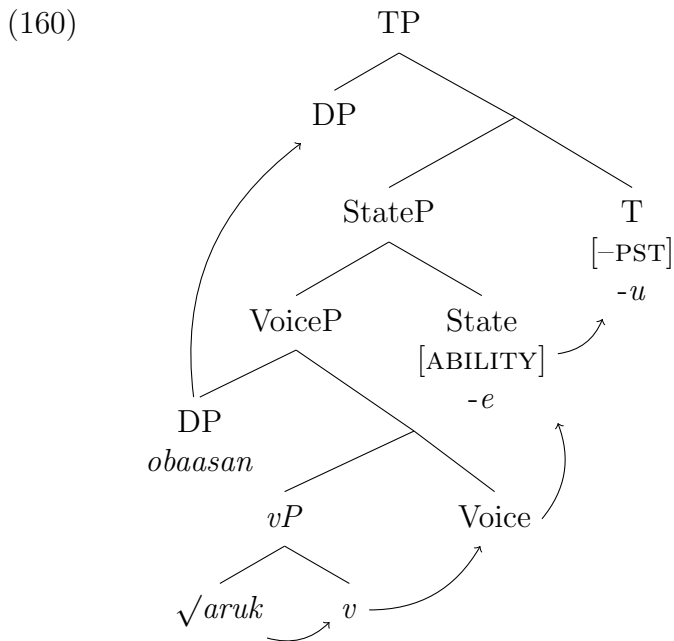
⁶²The Voice projection derives the transitive verb *tsukeru* ‘switch on’; the structure for the corresponding intransitive verb *tsuku* ‘be switched on’ in (155b) lacks a Voice projection.

3.4.2.3 *-e* ↔ State [ABILITY]

Finally, verbs in the potential form⁶³ also have a stative interpretation. The potential morpheme *-e* attaches directly to the main verb root and encodes ability, as shown in (159) below:⁶⁴

- (159) a. Obaasan-ga aruk-u.
 grandmother-NOM walk-NONPST
 ‘Grandmother walks/will walk.’
- b. Obaasan-ga aruk-e-ru.
 grandmother-NOM walk-POT-NONPST
 ‘Grandmother can walk.’

I propose that the potential suffix *-e* spells out the feature [ABILITY] in the State head. Unlike *iru* and *aru*, which are free morphemes, *-e* must appear as a suffix, like *-sugi*. Thus, rather than remaining in the *vP*, the verb must move to State in order to host the suffix, and the resulting complex moves to T to host the tense morphology. This structure is shown in (160):



⁶³Note that this form is distinct from stative potentials, which are property-denoting predicates that obligatorily appear in the *-te iru* form. I discuss stative potentials in section 3.4.5 below.

⁶⁴The potential morpheme has two allomorphs: *-rare*, which appears after verb stems that end in [i] or [e], and *-e*, which appears after other verb stems. Additionally, the allomorph *-rare* can be reduced to *-re* in informal contexts. It should also be noted that the potential morpheme contrasts with the phonologically similar morpheme *-are*, which encodes the passive and the honorific. Although these two morphemes are historically related (Kanno 1992), I treat them as distinct in modern usage.

As we would expect, the fact that State can only project once per clause means that potential verbs cannot appear in the *-te iru* form, as shown in (161):

- (161) *O_{baasan}-ga aruk-**e**-te i-ru.
 grandmother-NOM walk-POT-TE be-NONPST

Furthermore, other stative verbs such as *iru* and *aru* cannot appear with the potential morpheme; the expected forms *i-rare-ru* and *ar-e-ru* are illicit. Again, this is because State cannot project more than once in a single clause.

3.4.2.4 *Suru?*

I claimed in section 3.4.1.2 that *suru* spells out a *v* head without a root complement. However, we have also seen in section 3.3.2 that the noun-verb compounds *yoo suru* ‘require’ (162) and *atai suru* ‘deserve’ (163), although they contain *suru*, pattern with stative verbs in that they cannot be put into the *-te iru* form:

- (162) a. Kore-wa jikan-o yoo **su**-ru.
 this-TOP time-ACC need do-NONPST
 ‘This will take some time.’
 b. *Kore-wa jikan-o yoo **shi**-te i-ru.
 this-TOP time-ACC need do-TE be-NONPST
- (163) a. Kore-wa hyooka-ni atai **su**-ru.
 this-TOP evaluation-DAT deserve do-NONPST
 ‘This deserves to be evaluated.’
 b. *Kore-wa hyooka-ni atai **shi**-te i-ru.
 this-TOP evaluation-DAT deserve do-TE be-NONPST

If *suru* is eventive, why are the (b) forms ungrammatical? One possible explanation is that *suru* is a State head when it appears in noun-verb compounds. This would prevent the State head from projecting again, making the *-te iru* form impossible. However, other noun-verb compounds, such as *shooshin suru* ‘promote’ (164) and *benkyoo suru* ‘study’ (165), are eventive, as shown by the fact that they are grammatical in the *-te iru* construction, receiving a perfect interpretation and an ongoing interpretation respectively:

- (164) a. John-wa buchou-ni shooshin **shi**-ta.
 John-TOP section.chief-DAT promotion do-PST
 ‘John obtained promotion to section chief.’

(Grimshaw and Mester 1998, p. 213, their (19a))

- b. John-wa moo buchou-ni shooshin **shi-te** i-ru.
 John-TOP already section.chief-DAT promotion do-TE be-PST
 ‘John has already been promoted to section chief.’
- (165) a. John-wa Nihongo-o benkyoo **shi-ta**.
 John-TOP Japanese-ACC study do-PST
 ‘John studied Japanese.’
- b. John-wa ima Nihongo-o benkyoo **shi-te** i-ru.
 John-TOP now Japanese-ACC study do-TE be-NONPST
 ‘John is studying Japanese now.’

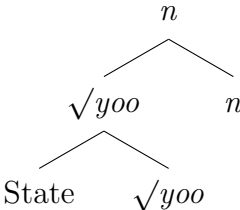
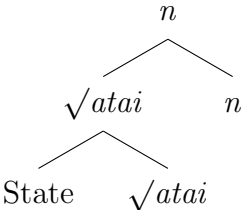
An additional difference is in the use of *suru* outside of compounds. We saw in section 3.4.1.2 that *benkyoo* ‘study’ can be the direct object of *suru* rather than forming a compound with it:

- (166) Tomohiro-wa benkyoo-o **shi-ta**.
 Tomohiro-TOP study-ACC do-PST
 ‘Tomohiro studied.’ (literally: ‘Tomohiro did studying.’)

However, this is not possible with *atai* ‘deserve’ (167). When it are not part of a compound, *atai* appears with *aru* ‘be₂’ rather than *suru*:

- (167) a. Kono e-wa ikken-no **atai-ga** a-ru.
 this picture-TOP one.look-GEN deserve-NOM be₂-NONPST
 ‘This picture deserves a look.’
- b. *Kono e-wa ikken-no **atai-ga** su-ru.
 this picture-TOP one.look-GEN deserve-NOM do-NONPST

What causes these contrasting patterns? I propose that the essential difference comes from the properties of the nouns. As *yoo* ‘need’ and *atai* ‘deserve’ denote properties rather than processes, they have a State root modifier as part of their lexical makeup:

- (168) a.  b. 

I assume, following Kageyama (2009), that noun + *suru* constructions are syntactically derived compounds (or, in his terminology, *word plus* compounds). These compounds display properties of both words and phrases; like words, they resist the intrusion

of phrasal and functional categories (169a) and are syntactically indeformable (169b), and like phrases, they are syntactically analyzable (170):

- (169) a. *[totsuzen-no rakka] su-ru
 sudden-GEN fall do-NONPST
 [Intended] ‘have a sudden fall’
- b. *Akai huusen-wa [rakka shi], aoi huusen-wa [jooshoo shi-ta].
 red balloon-TOP fall ~~do~~ blue balloon-TOP rise do-PST
 [Intended] ‘The red balloon fell and the blue one went up.’
- (Kageyama 2009, p. 523, his (17))

- (170) A: Sore-wa rakka shi-mashi-ta ka?
 that-TOP fall do-POLITE-PST Q
 ‘Did it fall?’
- B: Hai, \emptyset shi-mashi-ta.
 yes \emptyset do-POLITE-PST
 ‘Yes, it did.’
- (Kageyama 2009, p. 523, his (16))

In (169a), *rakka* ‘fall’ cannot be modified by the intrusive genitive *totsuzen-no* ‘sudden.’ In (169b), the continuative form⁶⁵ *shi* in the first clause must appear overtly. A shared continuative verb can ordinarily be deleted in the first clause, as shown in (171) below:

- (171) Kenji-wa hon-o yomi, Manami-wa shinbun-o yo-mu.
 Kenji-TOP book-ACC read Manami-TOP newspaper-ACC read-NONPST
 ‘Kenji will read a book and Manami will read a newspaper.’

The fact that *shi* cannot be deleted in (b), unlike *yomi* ‘read’ in (171), indicates that there is a closer syntactic relation between *rakka* and *shi* than there is between a regular direct object + verb sequence. These two properties suggest that *rakka* and *suru* form a single word. However, in the dialogue in (170), *rakka* is elided in B’s response, which indicates that *rakka suru* has an accessible internal structure. Kageyama (2009) therefore concludes that noun + *suru* constructions are made up of separate units that are merged

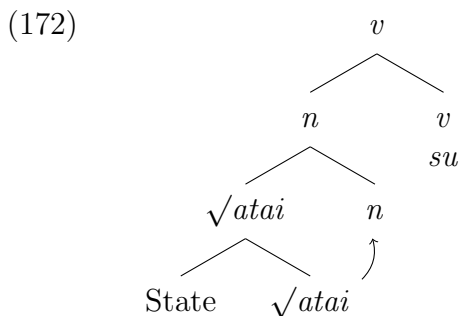
⁶⁵The continuative form is a literary construction that indicates a sequence of eventualities, as in (i):

- (i) O-tegami-o yomi, suguni henji-o kaki-mashi-ta.
 POLITE-LETTER-ACC read immediately reply-ACC write-POLITE-PST
 ‘I read your letter and immediately wrote a reply.’

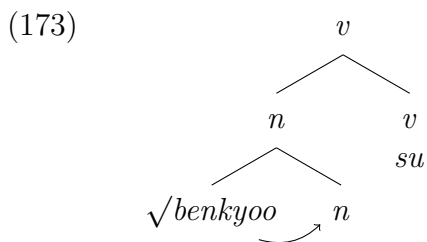
(McCulley, “Renyookei”)

together syntactically into a single word.⁶⁶

I propose that the syntactic structure of the compound *atai suru* ‘deserve’ is as follows:



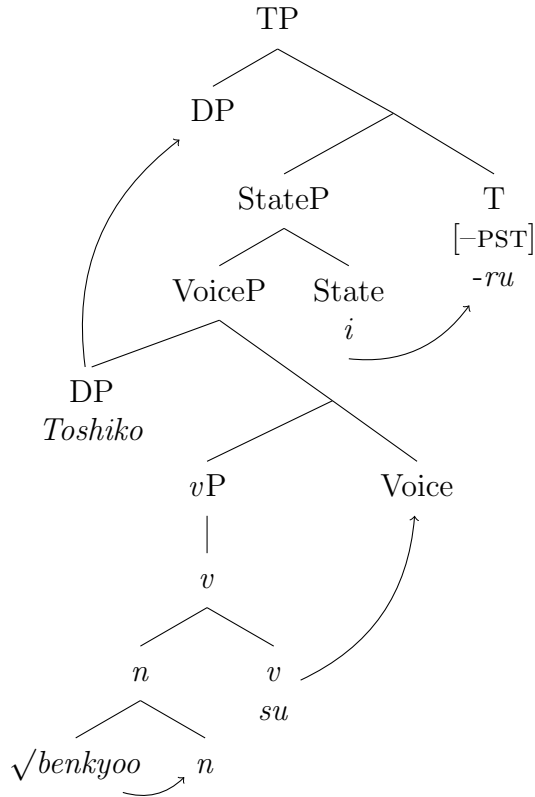
The compound is the combination of *v* and *n*, where *v* is the head. Because the *v* head does not take a root complement, it is spelled out with *su*. The *n* head selects the root element \sqrt{atai} , which is itself complex: it denotes a property rather than a process, and therefore has a State feature as a root modifier. Because the *v*P contains a State feature, the State feature cannot project again, making it impossible for the construction to appear in the *-te iru* form. The stativity of the compound therefore comes from the properties of the noun: *atai suru* ‘deserve’ and *yoo suru* ‘require’ are stative because they contain property-denoting nouns. This contrasts with noun + *suru* compounds that denote events like *benkyoo suru* ‘study’ (173):



Because $\sqrt{benkyoo}$ ‘study’ denotes a process rather than a property, the root is not modified by a State feature. Therefore, the State feature can project in the syntax, and the compound *benkyoo suru* can be put into the *-te iru* form, as shown in (174):

- (174) Toshiko-wa benkyoo shi-te i-ru.
 Toshiko-TOP study do-TE be-NONPST
 ‘Toshiko is studying.’

⁶⁶It should be noted that in Harley’s (2009) DM analysis of English compounds, a compound is defined as a word-sized unit containing multiple *roots*, and I have argued specifically that *suru* does not contain a root element. Thus, these noun + *suru* constructions do not fit her definition of a compound.



Because the stativity of the compounds *atai suru* ‘deserve’ and *yoo suru* ‘require’ comes from the nouns, I conclude that *suru* is not itself a stative element, and thus should not be included in our inventory of stative verbs.

3.4.2.5 Summary

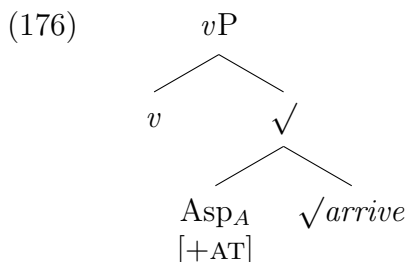
In summary, I propose that the Japanese inventory of stative verbs is functional, with no root elements. They instantiate a functional head *State*, with two marked features, spelled out by three vocabulary items as in (175):

- (175) ***State***
 i ↔ *State*
 ar ↔ *State* [F]
 -e ↔ *State* [ABILITY]

3.4.3 *Asp_A*

The final *vP* projection that I propose for Japanese is *Asp_AP*. As discussed in Chapter 2, *Asp_A* encodes the distinction between atomicity and non-atomicity, a distinction that can be made at different structural levels. I proposed above that English achievement verbs

take the feature [+AT] as a root modifier, meaning that they are lexically specified as atomic (i.e., that the events consist of a single part, and thus have an atomicity feature as part of their lexical specification). The proposed structure for the English achievement verb *arrive* is repeated below:



Furthermore, I proposed that the English imperfective marker *-ing* is a spell-out of Asp_A [-AT] at the IP level, encoding the fact that the event is internally accessible.⁶⁷ Thus, in English, Asp_A may be active at either the IP level or the level of the root. I propose that in Japanese, Asp_A may be active either at the *vP* level or the level of the root.

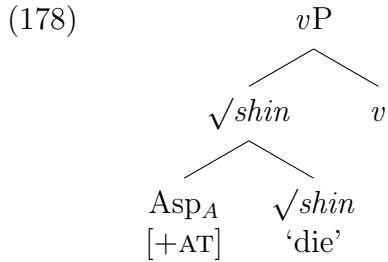
3.4.3.1 $\emptyset \leftrightarrow Asp_A$ (root modifier)

Evidence that Asp_A can be a root modifier in Japanese comes from the behaviour of instantaneous verbs, which are characterized by their just-finished interpretation in the *-te iru* form, as shown above and repeated in (177):

- (177) Inu-wa **shin**-de i-ru.
 dog-TOP die-TE be-NONPST
 ‘The dog is dead.’
 NOT: ‘The dog is dying.’

I propose that instantaneous verbs should be treated like English achievements: they consist of a single part, and therefore have the property of atomicity (i.e., Asp_A) as a root modifier. This is shown in (178) below, where the event introducer *v* has a complex root, made up of the root component of *shinu* ‘die’ plus the atomic feature Asp_A , as its modifier:

⁶⁷Recall that the Asp_A head has one of two marked values: atomic ([+AT]), as in the English achievement root modifier, or non-atomic ([-AT]), as in the English imperfective.



The instantaneous⁶⁸ verb *shinu* ‘die’ is thus lexically specified as atomic. I argue that it is atomicity that gives rise to the just-finished interpretation of instantaneous verbs in the *-te iru* form instead of the progressive interpretation obtained by non-instantaneous verbs.⁶⁹

I have argued above that the *-te iru* form encodes stativity; that is, it asserts that a predicate is a property of a single moment, following Hallman (2009a). As we saw in the last chapter, because stative predicates are evaluated with respect to a single moment, they must express unchanging properties. Recall that activities are cumulative, meaning that any subpart of a particular activity (e.g., running) is itself an activity of the same kind (Krifka 1992, 1998); any part of the event is the same as any other part of the event. Because of this uniformity, an activity may be made a property of the reference time rather than of a temporal interval: for any given moment within the duration of the running event, the property of *running* may be asserted of that moment. Thus, an activity verb such as *hashiru* ‘run’ in the *-te iru* form attributes the uniform property of running to a single moment. However, an atomic event such as *shinu* ‘die’ is non-cumulative; it consists of a single subpart. Achievement verbs, therefore, necessarily encode *change* rather than consistent properties; they do not receive ongoing interpretations in the *-te iru* form the way that activity verbs like *hashiru* ‘run’ do because they describe non-uniform events. Instead, the stativity applied by the *-te iru* form attributes to the reference time the property that results from the atomic event. Hence, in (177) above, the property being asserted of the moment of speech is the resultant state following the event of the dog dying (i.e., the dog being dead). The corresponding structure for (177) is as follows:

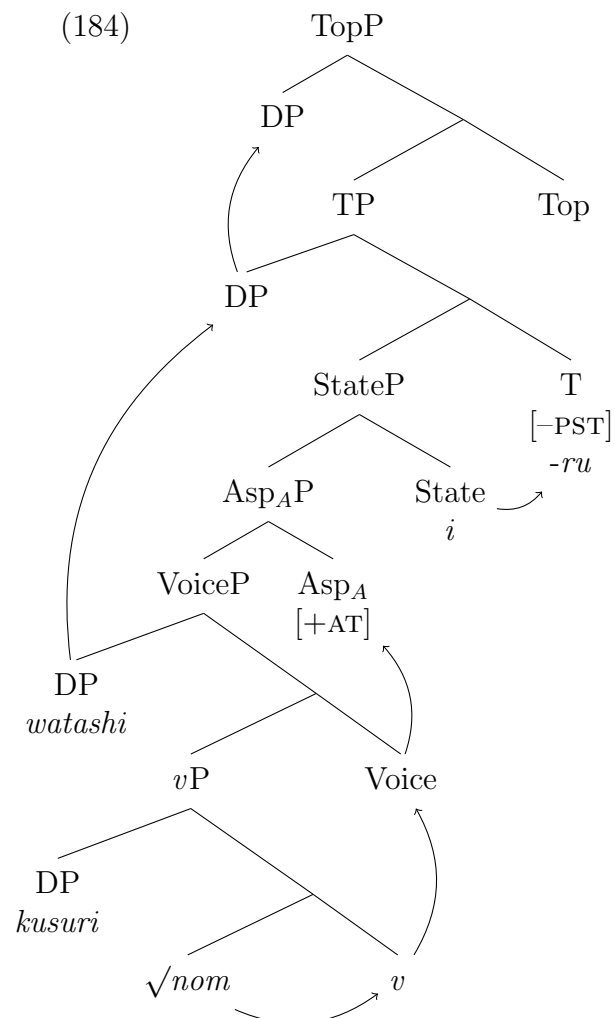
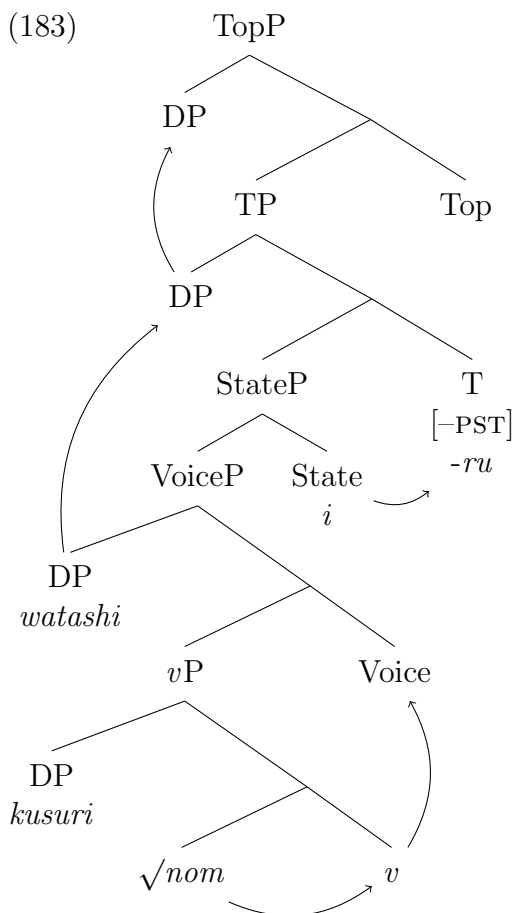
⁶⁸For consistency, I will continue to refer to this class as *instantaneous*, even though I propose that this class is characterized by atomicity rather than by instantaneity.

⁶⁹Recall from Chapter 2 that the English morpheme *-ing* is situated in Asp_A below TP and causes a clause to be interpreted as eventive, while the Japanese *-te iru* construction is stative. This structural difference is what causes English progressive clauses with achievement verbs like *die* to be interpreted as ongoing and Japanese instantaneous verbs like *shinu* ‘die’ in the *-te iru* form to be interpreted as perfect.

The verb *taberu* ‘eat’ normally receives an ongoing interpretation in the *-te iru* form; however, (180) describes a prior experience of having eaten well. I propose that the experiential reading is obtained when Asp_A projects above the *vP*. This causes the event to be interpreted as atomic (i.e., condenses it to a single part), which yields a just-finished interpretation in the *-te iru* form. In the absence of Asp_A , the event is interpreted as non-atomic by default. Thus, sentences such as (182) are ambiguous: the first reading is the most salient, but the second reading is also possible for some speakers.

- (182) *Watashi-wa kusuri-o no-nde i-ru.*
 I-TOP medicine-ACC drink-TE be-NONPST
 i. ‘I am taking medicine.’
 ii. ‘I have taken medicine.’

These two readings correspond to two distinct syntactic structures, given in (183) and (184) below:



In (184), Asp_A selects VoiceP, thus encoding the event as atomic. Because the State head selects Asp_AP , the state is interpreted as the result of the atomic event (i.e., the state resulting from taking medicine). The ambiguity of (182) supports the claim that Asp_A may project within the *v*P in addition to being a root modifier. Because the spell-out of bare Asp_A is phonologically null, there is no overt material that differentiates the two readings in speech, resulting in possible ambiguity.

3.4.3.3 *-te shimau*

I propose that a *v*P-level Asp_A is part of the *-te shimau* construction, although *-te shimau* does not itself encode atomicity. Recall that this construction patterns with instantaneous verbs in that it receives a just-finished interpretation in the *-te iru* form (Clarke 2005a). Consider the pair in (185):

- (185) a. Toshiko-ga ne-te i-ru.
 Toshiko-NOM sleep-TE be-NONPST
 ‘Toshiko is sleeping.’
- b. Toshiko-ga ne-te **shima**-tte i-ru.
 Toshiko-NOM sleep-TE put.away-TE be-NONPST
 ‘Toshiko has fallen asleep.’
 NOT: ‘Toshiko is falling asleep.’

Even though *neru* ‘sleep’ is an activity verb, not an instantaneous verb, as shown by its ongoing interpretation in the *-te iru* form (185a), the addition of *-te shimau* (185b) forces a perfect interpretation. This indicates that there must be an Asp_A head valued as [+AT] in the syntactic structure of a *-te shimau* construction.

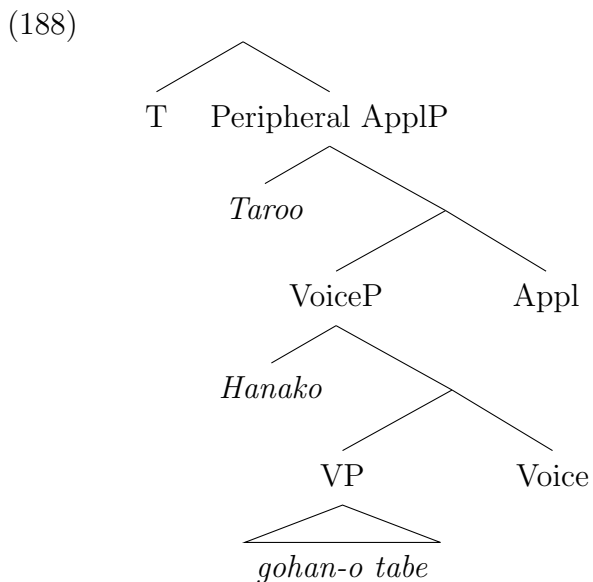
If *shimaw* were a spell-out of [+AT], we would expect the *-te shimau* construction to be incompatible with instantaneous verbs. Following Cowper and Hall (2012), a property cannot project as a syntactic head if it is acting as a root modifier. Therefore, since instantaneous verbs have Asp_A as a root modifier, Asp_A cannot project again as a syntactic head. However, instantaneous verbs are in fact compatible with *-te shimau*, indicating that *shimaw* cannot itself be the spell-out of [+AT]:

- (186) Kingyo-ga shin-de shima-tta.
 goldfish-NOM die-TE put.away-PST
 ‘The goldfish died (unfortunately).’

(Iwasaki 2002, p. 118, his (35))

Recall that in addition to making an event atomic, the *-te shimau* construction also conveys that the speaker is affected by the event's occurrence. I therefore propose that *shimaw* spells out a peripheral applicative head (following Kim (2011)) that encodes the speaker's affectedness, and that this applicative head selects Asp_A as a complement (either as a root modifier or an independent syntactic projection). Kim (2011) argues that the Japanese adversity passive is a peripheral applicative construction: the Appl head introduces the affected argument in its specifier. She gives the structure in (188) for the sentence in (187):

- (187) Taroo-ga Hanako-ni gohan-o tabe-rare-ta.
 Taroo-NOM Hanako-DAT meal-ACC eat-PASS-PST
 'Taroo was adversely affected by Hanako's eating a meal.'
 (Kim 2011, p. 132, her (52b))



(Kim 2011, p. 75, her (28a))

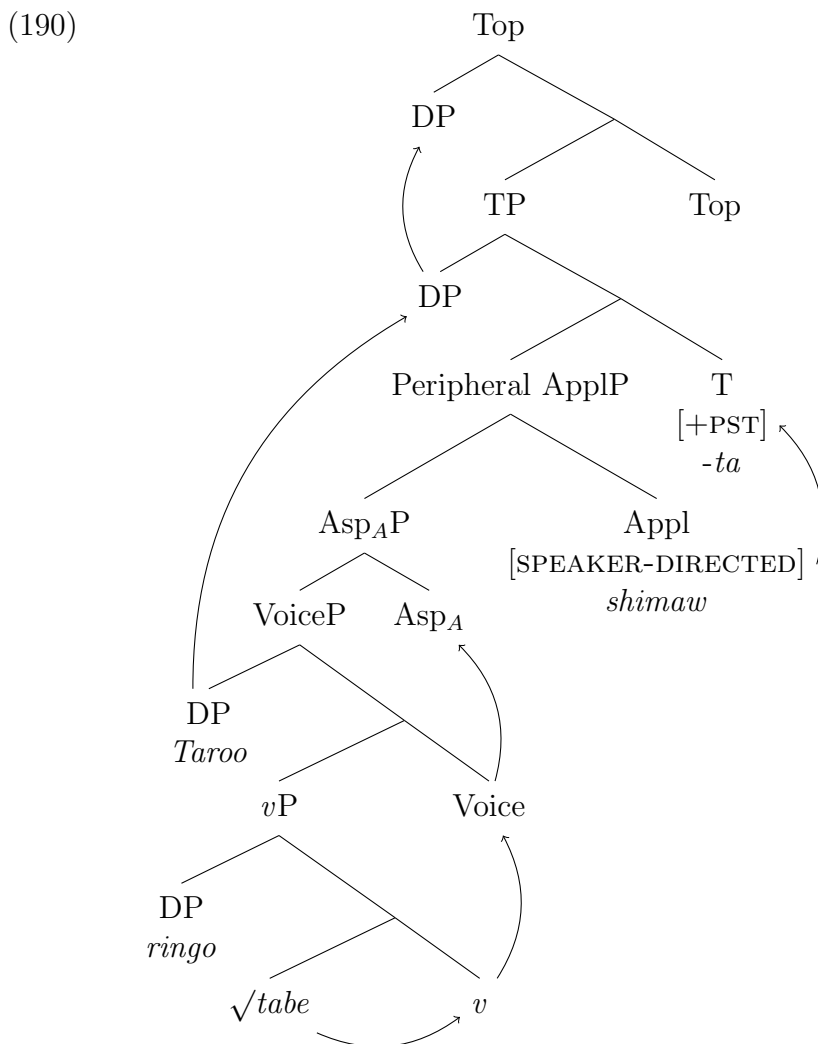
In (188), the affected argument *Taroo* is merged in the specifier of the peripheral ApplP. The Appl head selects VoiceP, which takes the agentive argument *Hanako* in its specifier. The peripheral applicative head introduces the DP *Taroo* as an external argument, although *Taroo* is not a participant in the event itself, and encodes an adverse relation between its argument and the event.

Similarly, I propose that in *-te shimau* constructions, *shimaw* heads a speaker-oriented peripheral applicative projection, encoding the fact that the speaker of the utterance is affected by the event's occurrence. This Appl head differs from Kim's (2011) proposed head for the adversity passive construction in that it does not introduce an external

argument; it encodes the speaker's affectedness without the speaker being structurally represented. Because the *-te shimau* construction is obligatorily atomic but *shimaw* cannot be an instantiation of [+AT], I propose that the speaker-directed peripheral Appl head must take an atomic complement (i.e., a structure that has Asp_A valued as [+AT], either as a separate syntactic head or as a root modifier). This explains why *-te shimau* constructions get a perfect interpretation in the *-te iru* form: *shimaw* is not itself atomic, but it requires its complement to be atomic.

The structure for a *-te shimau* sentence in which Asp_A is a syntactic head (that is, when the main verb is an activity verb) is as follows:

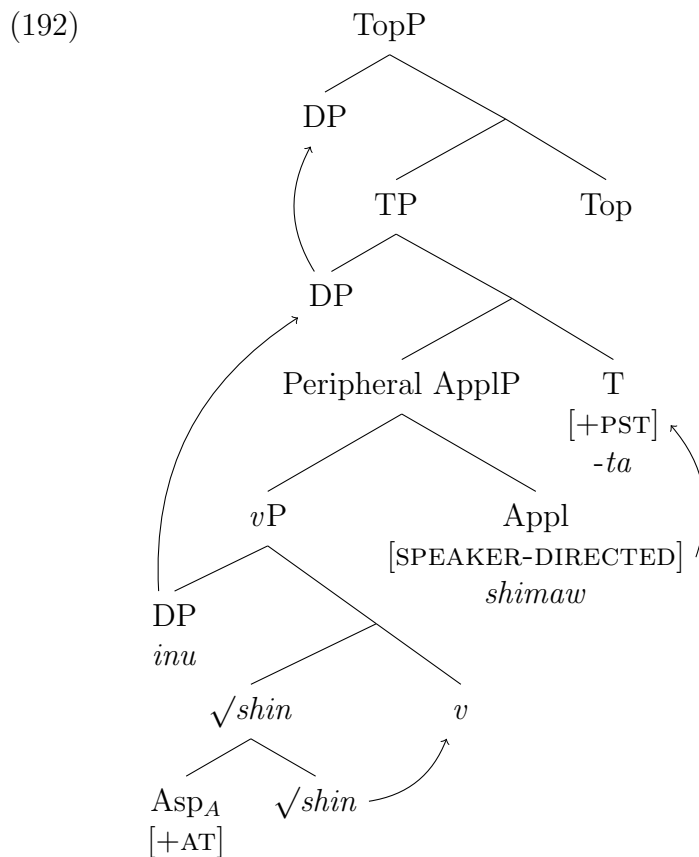
- (189) Taroo-wa ringo-o tabe-te shima-tta.
 Taroo-TOP apple-ACC eat-TE put.away-PST
 'Taroo completely ate the apple up (unfortunately).'



In (190), the peripheral Appl head,⁷⁰ which is specified as [SPEAKER-DIRECTED], must take an atomic complement. Because the root \sqrt{tabe} ‘eat’ is not lexically specified as atomic, the Asp_A head with the feature [+AT] must project separately in order to satisfy Appl. Thus, Appl selects Asp_AP as its complement, and the Asp_A head selects VoiceP.

When an instantaneous verb like *shinu* ‘die’ is put into the *-te shimau* form, the structure is as follows:

- (191) Inu-ga shin-de shima-tta.
 dog-NOM die-TE put.away-PST
 ‘The dog died (unfortunately).’

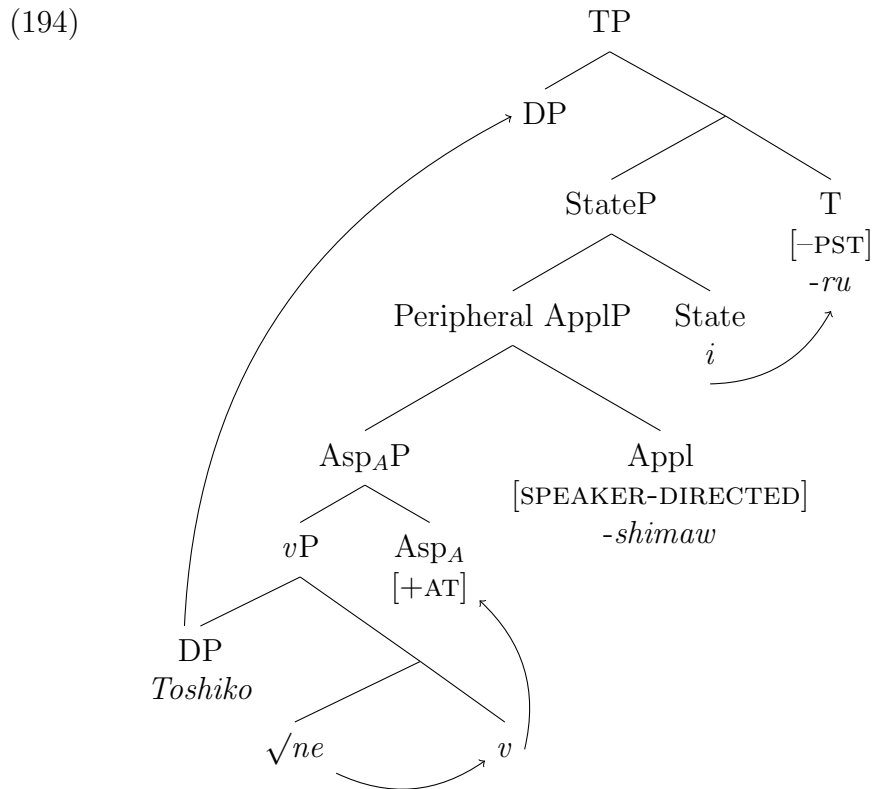


⁷⁰Recall from section 2.2.2.2 that Kim (2011) argues that peripheral Appl differs from Appl (Pylkkänen 2002, 2008) in that it introduces a subject rather than an object. Given that the speaker is not structurally represented in *-te shimau* constructions, how do we know that *shimaw* is introduced by peripheral Appl rather than Appl? Kim argues that peripheral Appl selects VoiceP as a complement, while Pylkkänen places Appl below the Voice projection. Since the nominative argument is agentive in *-te shimau* constructions, and that the speaker is affected by the action of the agent, I conclude that *shimaw* is merged above VoiceP, meaning that it is in peripheral Appl.

In (192), the root of the main verb is \sqrt{shin} ‘die,’ which takes Asp_A ([+AT]) as a modifier. Thus, the head of the peripheral Appl can select the *v*P as a complement, as the atomic feature is contained within the projection. Asp_A does not head its own syntactic projection, but its presence in the *v*P satisfies the Appl head.

Finally, when a *-te shimau* construction is put into the *-te iru* form, the structure is as follows:

- (193) Toshiko-ga ne-te shima-tte i-ru.
 Toshiko-NOM sleep-TE put.away-TE be-NONPST
 ‘Toshiko has fallen asleep (unfortunately).’



Because \sqrt{ne} ‘sleep’ is not an atomic root, the Asp_A head projects in order to satisfy Appl. The State head then selects peripheral ApplP, stativizing the atomic event and yielding the perfect interpretation obtained by instantaneous verbs in the *-te iru* form. The State head *i* moves to T to bear tense; the Appl head *shimaw* is therefore spelled out with *-te*, as is the root + *v* complex, which moves up to Asp_A .

3.4.3.4 Summary

I have proposed that the Asp_A head may be present at either the root level or the *v*P level in Japanese; in both positions, it is not associated with any phonological material. I have also proposed that *shimaw* heads a speaker-oriented peripheral applicative head that selects Asp_A . These two heads explain the behaviour of instantaneous verbs and the *-te shimau* construction.

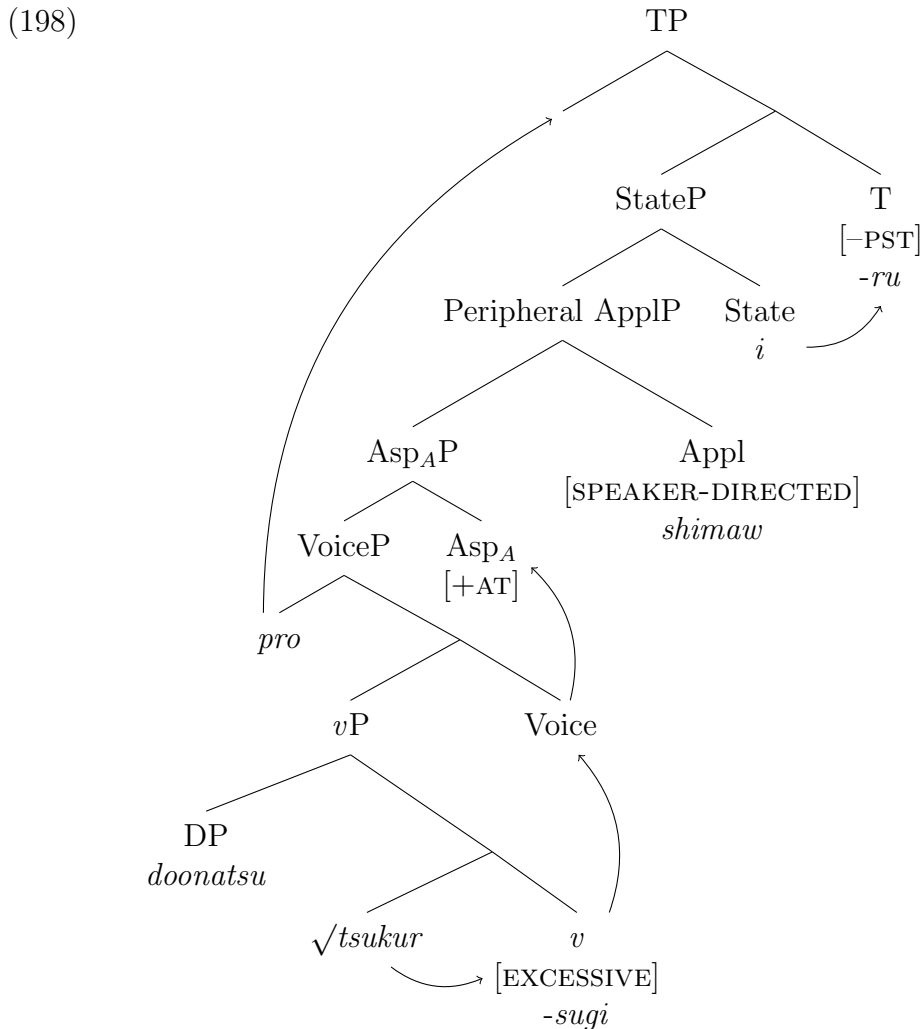
(195) $\emptyset \leftrightarrow \text{Asp}_A$

(196) *shimaw* \leftrightarrow Appl [SPEAKER-DIRECTED]

3.4.4 Interim summary

With the aspectual heads described above, we are able to account for much of the data described in section 3.2. We now have a featural characterization of three of Kindaichi's four verb classes: stative verbs are purely functional elements that spell out features in a State head, activity verbs are unmarked roots that combine with the verbalizing head *v*, and instantaneous verbs have the feature Asp_A as a root modifier. We can also explain the interactions of these classes with various auxiliary constructions. The structure for a sentence with three stacked auxiliaries is shown in (197) below:

(197) Doonatsu-o tsukuri-sugi-te shima-tte i-ru.
 donuts-ACC make-too.much-TE put.away-TE be-NONPST
 'I've made too many donuts, unfortunately.'



However, there is one verb class left to consider: the class of stative potentials. Stative potentials are unique among the Japanese verb classes in that they must appear in the *-te iru* construction (199a) and are ungrammatical in the simple tenses (199b):

- (199) a. Akiko-wa yomi-kaki-ga **sugure-te** i-ru.
 Akiko-TOP read-write-NOM be.excellent-TE be-NONPST
 ‘Akiko is excellent at reading and writing.’
- b. *Akiko-wa yomi-kaki-ga **sugure-ru**.
 Akiko-TOP read-write-NOM be.excellent-NONPST

Additionally, stative potentials are barred from the *-te shimau* construction:

- (200) *Yoku benkyoo shi-ta ga, **arifure-te** shima-tta.
 often study do-PST but be.mediocre-TE put.away-PST
 [Intended] ‘I studied frequently, but I was completely/ended up being mediocre.’

- (201) *Amari benkyoo shi-naka-tta ga, **sugure-te** shima-tta.
 seldom study do-NEG-PST but be.excellent-TE put.away-PST
 [Intended] ‘I seldom studied, but I was completely/ended up being excellent.’

Stative potentials thus display unique behaviour, indicating that their properties differ from those of the other verb classes. How can the behaviour of stative potentials be incorporated into the aspectual system I have proposed for Japanese?

3.4.5 Stative potentials

The class of stative potentials is made up of property-denoting predicates with ‘adjective-like meanings’ (Ezaki 2001: 5) such as *niru* ‘resemble,’ *sobieru* ‘stand tall,’ *shiru* ‘know,’ *sugureru* ‘be excellent,’ *zubanukeru* ‘be outstanding,’ and *arifureru* ‘be commonplace.’ Various analyses of stative potentials have been proposed: this class is frequently analyzed as a subtype of instantaneous verb (and thus equivalent to Vendler’s achievement class), and I have argued previously (Clarke 2005b) that stative potentials should be analyzed as bare roots. However, I show here that stative potentials are best analyzed as verbs that differ from the other verb classes in that they semantically denote states rather than events; it is this semantic property that makes it necessary for them to appear in the *-te iru* form as main verbs.

3.4.5.1 Stative potentials = instantaneous roots?

Although Kindaichi treats stative potentials as a distinct verb class, Ogihara (1998) and Shirai (2000), in their analyses of the *-te iru* form, both take stative potentials to be subtypes of instantaneous verbs and therefore treat their interpretation in the *-te iru* form as analogous to the reading obtained by instantaneous verbs. In other words, they claim that stative potentials literally denote inchoative events (e.g., *shiru* means ‘learn’ or ‘come to know’ rather than ‘know,’ *zubanukeru* means ‘become outstanding,’ etc.) and get a perfect reading in the *-te iru* form, just as instantaneous verbs do. In order to explain the inability of stative potentials to appear in the simple tenses (as shown in (199) above), Ogihara (1998) claims that they are syntactically deficient, while Shirai (2000) argues that they do not appear in the simple tenses because they denote instantaneous events that are not salient in discourse. However, as I have previously argued (Clarke 2005b), stative potentials are distinct from instantaneous verbs. The argument goes as follows:

A significant difference between stative potentials and instantaneous verbs is that the states described by stative potentials in the *-te iru* form are not necessarily the result of

a prior event. Instantaneous verbs receive a perfect interpretation in the *-te iru* form, expressing a state that holds at the reference time as a result of a prior event, as shown below with *taoreru* ‘faint’:

- (202) Taro-ga taore-te i-ru.
 Taro-NOM faint-TE be-NONPST
 ‘Taro has fainted (i.e., he’s on the ground as a result of having fainted).’

Although (202) does not itself *describe* a fainting event, it *entails* a prior fainting event that results in the state of having fainted. Asserting the having-fainted state while negating the fainting event results in ungrammaticality:

- (203) *Taro-ga taore-te i-ru ga, taore-na-katta.
 Taro-NOM faint-TE be-NONPST but faint-NEG-PST
 [Intended] ‘Taro is lying unconscious on the ground, but he didn’t faint.’

Shirai and Ogihara’s treatment of stative potentials as instantaneous verbs predicts that when they appear in the *-te iru* form, they should receive the same interpretation that instantaneous verbs do: that of a state resulting from an event. However, the interpretation of *sugureru* ‘be excellent’ in the *-te iru* form in (204) below indicates that this is not the case. Like an instantaneous verb, it does not describe an event that is ongoing at the moment of speech (i.e., the event of *becoming* excellent), but unlike an instantaneous verb, it does not describe a state that results from a prior event (i.e., the state of *being* excellent as the result of an event of *becoming* excellent). Rather, it describes a state that holds at the reference time without entailing a prior event:⁷¹

- (204) Kare-wa yoku benkyoo su-ru kara, chuushoogainen-ni
 he-TOP well study do-NONPST because abstract.concept-DAT
 sugure-te i-ru.
 be.excellent-TE be-NONPST
 ‘Because he studies well, he excels in abstract concepts.’
 NOT: ‘Because he studies well, he has become excellent in abstract concepts.’
 NOT: ‘Because he studies well, he is becoming excellent in abstract concepts.’

Shirai (2000) argues that this is because becoming excellent is not a salient discourse event; however, it is not difficult to imagine one becoming excellent as a result of diligent studying. The fact that (204) does not describe or entail an event in the *-te iru* form (i.e., it does not receive any of the interpretations that eventive verbs do), either completed or

⁷¹The difference between the two impossible meanings of this sentence is that the first is true only if the referent is in fact excellent, while the second is true only if the referent is not excellent.

ongoing at the reference time, even when given appropriate context, indicates that this interpretation is not simply ruled out by discourse factors.

A further problem with Shirai and Ogihara's claim that stative potentials denote instantaneous events is that unlike instantaneous verbs, stative potentials cannot describe past-time completed events. Shirai and Ogihara both claim that the stative interpretation normally obtained by stative potentials is derived from a core inchoative meaning (e.g., *shi-tte iru* 'know' is derived from *shiru* 'learn'). However, stative potentials cannot refer to inchoative events, either independently or in the *-te iru* form. In (205) below, the stative potential *sugureru* 'be excellent' cannot describe a completed inchoative event of becoming excellent, either in the plain past form (205a) or the past *-te iru* form (205b), but only the state of being excellent:

- (205) a. *Kare-wa yoku benkyoo shi-ta kara, chuushoogainen-ni
 he-TOP well study do-PST because abstract.concept-DAT
 sugure-ta.
 be.excellent-PST
 [Intended] 'Because he studied well, he became excellent in abstract concepts.'
- b. Kare-wa yoku
 he-TOP well
 benkyoo shi-ta kara, chuushoogainen-ni sugure-te i-ta.
 study do-PST because abstract.concept-DAT be.excellent-TE be-PST
 'Because he studied well, he was excellent in abstract concepts.'
 NOT: 'Because he studied well, he became excellent in abstract concepts.'

In fact, Ogihara himself points out that the inchoative events he claims stative potentials denote may never have taken place. In (206), the stative potential *shiru* 'know' is used to describe a state that exists expressly without an inchoative event causing it:

- (206) Ningen-wa umare-ta toki kara gengo-no honshitu-o shi-tte
 people-TOP be.born-PST time from language-GEN essence-ACC learn-TE
 i-ru.
 be-NONPST
 'A human being knows the essence of human language from birth.'

(Ogihara 1998, p. 104, his (36b))

The verb *shiru*, which Ogihara glosses here as 'learn,' is used in the *-te iru* form to refer to a state of knowing that arose without the inchoative event of learning ever taking place. In contrast, as we have seen above, regular instantaneous verbs with *-te iru* necessarily entail that the events they denote took place, and that the current state is the result of that event:

- (207) #Matto-ga yuka-ni ochi-te i-ru.
 mat-NOM floor-DAT drop-TE be-NONPST
 [Intended] ‘A mat is placed on the floor.’

(Ogihara 1998, p. 104, his (38a))

The infelicity of (207) under the intended interpretation is due to the lack of reference to the event of dropping that resulted in the mat being on the floor. An instantaneous verb like *ochiru* ‘drop’ in the *-te iru* form must describe a state that results from the event denoted by the verb. This contrasts with (206) above, in which the stative potential describes a state that explicitly is not the result of some prior event.

Further evidence that stative potentials are distinct from instantaneous verbs comes from their interaction with the auxiliary construction *-te shimau*. Ogihara (1998) claims that the only difference between instantaneous verbs and stative potentials is that stative potentials are syntactically restricted from appearing in the simple tenses. However, we have seen in section 3.2.3 above that stative potentials cannot appear with *-te shimau* (208)–(209) while instantaneous verbs can (210):

- (208) *Yoku benkyoo shi-ta ga, arifure-**te** **shima-tta**.
 often study do-PST but be.mediocre-TE put.away-PST
 [Intended] ‘I studied frequently, but I was completely/ended up being mediocre.’
- (209) *Amari benkyoo shi-naka-tta ga, sugure-**te** **shima-tta**.
 seldom study do-NEG-PST but be.excellent-TE put.away-PST
 [Intended] ‘I seldom studied, but I was completely/ended up being excellent.’
- (210) Kono kata-wa namae-o wasure-**te** **shima-tta**.
 this person-ACC name-ACC forget-TE put.away-PST
 ‘I have completely (and unfortunately) forgotten that person’s name.’

If the only difference between stative potentials and instantaneous verbs is their ability to appear in the simple tenses, as Ogihara (1998) and Shirai (2000) claim, this grammaticality contrast is unexpected. Thus, I show in Clarke (2005b) that the difference between stative potentials and instantaneous verbs goes beyond a simple tense restriction. They have significantly different syntactic and semantic properties, indicating that they should be treated as distinct classes.

3.4.5.2 Stative potentials = bare roots?

Stative potentials are distinct not only from instantaneous verbs, but from all Japanese verb classes, in that they are grammatical only in the *-te iru* form. I argued in Clarke (2005b) that this property can be explained if we treat them as uncategorized roots, in

the sense of Wiltschko (2005), rather than as verbs. However, I argue here against that analysis. I propose that stative potentials are indeed verbs based on their morphosyntactic behaviour, but they have unique semantic properties that make them unable to appear independently.

Wiltschko (2005) shows that some affixes in Halkomelem Salish are not sensitive to distinctions between syntactic categories. These affixes, e.g., the diminutive marker, can attach to words of any syntactic category, as shown in the table below:

Table 3.5: Halkomelem Salish diminutive marker

	Unmarked Root	Marked Diminutive
N	stó:lo ‘river’	stó le to ‘creek’
V	xá:m ‘crying’	x e xám ‘sobbing’
A	qel ‘bad’	q í qel ‘naughty’

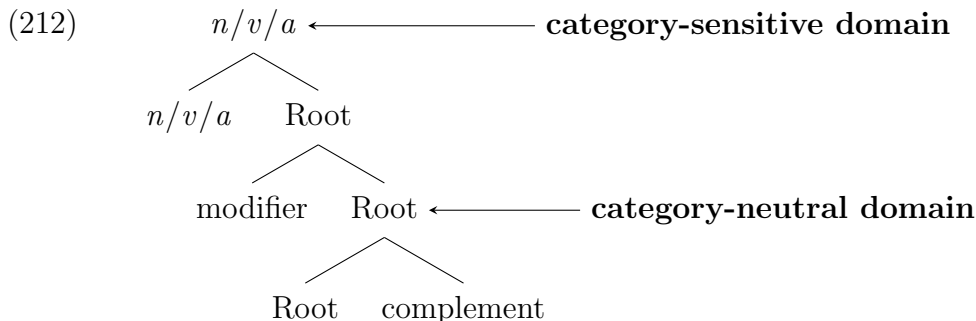
(Wiltschko 2005, p. 1, her (3))

These category-neutral affixes exist alongside affixes that do show sensitivity to syntactic categories, such as the first person singular possessive morpheme, which appears only with nouns:

- (211) a. s-qácza n-s-qácza
 NOM-FATHER 1S.POSS-NOM-FATHER
 ‘father’ ‘my father’
- b. λ’qxaλ *n-λ’qxaλ
 bring 1S.POSS-BRING
 ‘bring’

(van Eijk and Hess 1986, p. 3)

From this, Wiltschko (2005) concludes that affixes that are not sensitive to syntactic categories are modifiers that attach to bare roots. This proposal assumes that categorial information is introduced in the syntax via the categorizing heads *n*, *v*, and *a*, which merge with roots to form nouns, verbs, and adjectives, as described in section 2.2.2.2 above. Under this theory, the syntax is able to access roots before they merge with categorizing heads (Marantz 1997). Wiltschko (2005) proposes that in Halkomelem Salish, category-insensitive affixes (such as the diminutive morpheme) attach at the root level, while category-sensitive affixes (such as the first person singular possessive morpheme) attach higher, at the level of the categorizing head. Wiltschko’s proposed structure for the derivation of a Halkomelem word is as follows:



Assuming, then, that it is possible for roots to be active in the syntax without being lexically categorized, I argued (Clarke 2005b) that this is how Japanese stative potentials should be analyzed. Stative potentials were claimed to be distinct from other Japanese verbs, both syntactically and semantically. Syntactically, they are ungrammatical in the simple tenses, as shown in the previous section. Semantically, they cannot be associated with an event. Ezaki (2001) describes stative potentials as adjectival and non-aspectual, in that they do not convey any information about a discourse event. Furthermore, stative potentials always denote individual-level properties. Carlson (1977) differentiates between stage-level properties, which are temporary (e.g., *be sleepy*), and individual-level properties, which are persistent (e.g., *be tall*). Stative potentials always express persistent states in the *-te iru* form, as shown below:

Table 3.6: Individual-level properties denoted by stative potentials

Dictionary form	<i>-te iru</i>	English
<i>niru</i>	<i>ni-te iru</i>	resemble
<i>sugureru</i>	<i>sugure-te iru</i>	be excellent
<i>arifureru</i>	<i>arifure-te iru</i>	be commonplace
<i>sobieru</i>	<i>sobie-te iru</i>	tower high
<i>zabanukeru</i>	<i>zabanuke-te iru</i>	be outstanding

In light of these differences between stative potentials and the other verb classes, why are stative potentials generally classified as verbs? Morphologically, the “dictionary form” of a stative potential is that of a verb (that is, the stem plus the plain⁷² non-past inflection), as shown in Table 3.6 above, even though stative potentials never actually appear in this form in sentences as main verbs. As well, stative potentials appear in the *-te iru* form, which is a verbal construction. However, we have seen in section 3.4.5.1 above that they cannot appear in the *-te shimau* construction, and they are also barred

⁷²Japanese verbs can be inflected in several different ways depending on the formality of the discourse; the *plain* form is the unmarked inflection style.

from other verbal constructions, such as *-te-wa ikenai* ‘V-ing is not permitted’ (213b) and the imperative *-te* (214b), unless they are in the *-te iru* form (213c), (214c):

- (213) a. Hanashi-te-wa ik-e-na-i.
 talk-TE-TOP go-POT-NEG-NONPST
 ‘Talking is not permitted.’
- b. *Arifure-te-wa ik-e-na-i.
 be.commonplace-TE-TOP go-POT-NEG-NONPST
 [Intended] ‘Being commonplace is not permitted.’
- c. Arifure-te i-te-wa ik-e-na-i.
 be.commonplace-TE be-TE-TOP go-POT-NEG-NONPST
 ‘Being commonplace is not permitted.’
- (from Clarke 2005b, p. 50, her (46) and (47))

- (214) a. Tabe-te!
 eat-TE
 ‘Eat!’
- b. *Zubanuke-te!
 be.outstanding-TE
 [Intended] ‘Be outstanding!’
- c. Zubanuke-te i-te!
 be.outstanding-TE be-TE
 ‘Be outstanding (from now on)!’
- (Clarke 2005b, p. 51, her (48) and (49))

Although stative potentials appear in the *-te iru* form (and appear in the dictionary in the plain non-past verbal form), they are barred from constructions that other verbs may appear in, which I took in Clarke (2005b) as evidence that they are not verbs. As mentioned above, Ezaki (2001) describes stative potentials as adjectival in their meanings. However, they do not display adjectival behaviour either morphologically or syntactically. For example, prenominal attributive adjectives take the ending *-i* (215a) or *-na* (215b), while a verb appearing prenominally as part of a noun-modifying relative clause takes the verbal simple past tense ending (215c). Prenominal stative potentials take the verbal simple past tense ending, just as verbs do (216):

- (215) a. kirei-**na** josei
pretty-NA woman
'a pretty woman.'
- b. utsukushi-**i** josei
beautiful-I woman
'a beautiful woman'
- c. [tegami-o ka-**ita**] josei
letter-ACC write-PST woman
'a woman who wrote a letter'
- (216) [haha-ni ni-**ta** josei]
mother-DAT resemble-PST woman
'a woman who resembles/resembled mother'

Although stative potentials are like adjectives in that they describe properties rather than events, they do not display the morphological and syntactic properties of adjectives. If we assume (following Arad 2002, Marantz 1997, inter alia) that categorial information is syntactically encoded in categorizing heads (i.e., *v*, *a*, *n*), stative potentials' apparent lack of consistent categorial properties could be explained if they do not, in fact, join with a categorizing head prior to joining with *-te iru*. In this case, they would be uncategorized elements that only denote properties when conjoined with the verbal *-te iru* construction. Thus, I concluded (Clarke 2005b) that stative potentials should be treated as bare roots rather than verbs.

The proposal that stative potentials are bare roots rather than verbs is based on the fact that, although they exhibit verbal behaviour morphologically, they are more like adjectives in their meanings. However, this is essentially the opposite of the evidence that Wiltschko presents in support of her proposal that bare roots are syntactically accessible in Halkomelem Salish. Wiltschko (2009a) looks at lexical suffixes, which are obligatorily bound morphemes associated with "nominal" (i.e., entity-denoting) meanings. They differ from regular nouns in that they cannot appear independently:

(217)	a.	“nominal suffixes”		b.	“regular” nouns
		-as	- <i>face</i>		s'ó:thes <i>face</i>
		-tses	- <i>hand</i>		cháléx <i>hand</i>
		-awtx	- <i>building</i>		lálém <i>house</i>
		-ilep	- <i>ground</i>		téméxw <i>earth, land</i>
		-elcep	- <i>firewood</i>		siyólh <i>firewood</i>
		-als	- <i>fruit/round</i>		sth'í:m <i>berry, fruit</i>
		-(e)wi:l(s)	- <i>dishes</i>		ló:thel <i>dish</i>
					(Wiltschko 2009a, p. 200, her (1))

Lexical suffixes have been problematic in the Salishan literature due to their so-called “dual nature”: they have lexical meaning in that they denote individuals, but functional behaviour in that they are bound morphemes. There are numerous parallels between these morphemes and incorporated nouns, but many studies (e.g., Anderson 1992, *inter alia*) have argued that because lexical suffixes never appear as independent nouns, they cannot be incorporated nouns. Wiltschko (2009a) argues that lexical suffixes are incorporated *roots*, thus capturing both their similarity to incorporated nouns and their inability to appear as independent nouns.⁷³

Wiltschko (2009a) shows that the morphosyntactic behaviour of lexical suffixes is significantly different from that of nouns. Although lexical suffixes appear to be noun-like in meaning, unlike nouns, they do not take possessive morphology (218), plural marking (219),⁷⁴ or determiners (220):

(218)	a.	*th'éxw- te-xál-s -t-es	te	Strang	
		wash- foot -POSS-TRANS-3S	DET	Strang	
		[Intended]		‘Strang washed his/someone’s foot.’	
	b.	te	mál	te	mál-s
		DET	father	DET	father-3S.POSS
		‘the father’		‘his/her father’	
					(Wiltschko 2009a, p. 202, her (4) and (3a))

⁷³Wiltschko points out that, crucially for her analysis, “noun incorporation” is not a single phenomenon, but a cover term used to describe a number of syntactically distinct constructions. For analyses of various types of “noun incorporation,” see, e.g., Johns (2007), Baker et al. (2005), Rosen (1989), Mithun (1984), etc.

⁷⁴The Halkomelem plural has multiple allomorphs, which I do not discuss here; Wiltschko (2009a) shows that lexical suffixes are not compatible with any of these allomorphs.

- (219) a. -as *-a'as/-ales
 -face -face.PL
 'face' [Intended] 'faces'
 b. méle **mámele**
 child child.PL
 'child' 'children'

(Wiltschko 2009a, p. 203, her (8a) and (7a))

- (220) a. *th'éxw-**te-wíl**-t-es te ló:thel
 wash-DET-DISH-TRANS-3S DET dish
 [Intended] 'He washed the dishes.'
 b. th'éxw-t-es **te ló:thel**
 wash-TRANS-3S DET dish
 'He washed the dishes.'

(Wiltschko 2009a, p. 204, her (12b) and (11b))

Furthermore, these behaviours are also true of incorporated elements in other languages, such as Blackfoot (Mithun 1984). Thus, distributionally, lexical suffixes pattern with incorporated elements, not with Halkomelem nouns. However, even though lexical suffixes do not exhibit nominal behaviour, they display nominal meaning, prompting Wiltschko (2009a) to describe them as “defective nouns” (p. 205). How is this deficiency to be characterized?

Following the theory (Marantz 1997) that categorial information is encoded separately from the lexical properties of a morpheme, Wiltschko (2009a) proposes that lexical suffixes are roots, and thus lack a categorizing head. The phonological (π) and semantic (λ) properties particular to lexical suffixes (i.e., phonologically, they are bound morphemes, and semantically, they denote individuals), which have been thought problematic in the literature, are precisely what define them as a class. She formalizes this definition as in (221) below:

- (221) LexSuf =_{DEF} $\sqrt{\text{root}}$: $\langle \pi: _ _, : \lambda: \in \{\text{individuals}\} \rangle$

(Wiltschko 2009a, p. 207, her (19))

Given this proposal that lexical suffixes are roots with particular phonological and semantic properties, Wiltschko argues that the constructions in which lexical suffixes appear are indeed incorporation structures, differing from “noun incorporation” only in that the incorporated elements are roots rather than nominals.

Based on this analysis of Halkomelem lexical suffixes, distributional properties, not semantic properties, should be used as categorial diagnostic criteria. Therefore, the

claim that Japanese stative potentials should be analyzed as bare roots rather than verbs because they are semantically distinct from verbs (Clarke 2005b) is invalid. The morphosyntactic behaviour of stative potentials is distinctly verbal. The *-te iru* form, in which they obligatorily appear, is restricted to verbs. Furthermore, as shown above and repeated here as (222) and (223), the morphological and syntactic patterning of the stative potential *niru* ‘resemble’ when modifying a noun is the same as that of the activity verb *kaku* ‘write’:

- (222) a. [haha-ni ni-**ta** josei]
 mother-DAT resemble-PST woman
 ‘a woman who resembles/resembled mother’
 b. [tegami-o ka-**ita**] josei
 letter-ACC write-PST woman
 ‘a woman who wrote a letter’
- (223) a. **haha-ni ni-ta** sono josei
 mother-DAT resemble-PST that woman
 ‘that woman who resembles/resembled mother’
 b. *sono **haha-ni ni-ta** josei
 that mother-DAT resemble-PST woman
 c. **tegami-o ka-ita** sono josei
 letter-ACC write-PST that woman
 ‘that woman who wrote a letter’
 d. *sono **tegami-o ka-ita** josei
 that letter-ACC write-PST woman

Although stative potentials do not appear independently as main verbs, their morphosyntactic behaviour is otherwise purely verbal, and it is precisely this morphosyntactic behaviour that indicates that stative potentials are verbs.

The interaction of stative potentials with the *sugiru* construction also indicates that it is not the case that stative potentials are barred from appearing in the simple tenses because they are bare roots. I have argued in section 3.4.1.3 that *-sugi* is a possible spell-out of *v*. Recall that vocabulary items of any lexical category can appear with *sugiru*: verbs (224), *i*-adjectives (225a), *na*-adjectives (225b), and nouns (226).

- (224) Kinoo tabe-**sugi**-ta.
 yesterday eat-too.much-**ta**.
 ‘Yesterday I ate too much.’

- (225) a. Keeki-wa oishi-**sugi**-ru.
 cake-TOP delicious-too.much-NONPST
 ‘Cake is so delicious.’
- b. Kono onna-no hito-wa kirei-**sugi**-ru.
 this female-GEN person-TOP pretty-too.much-NONPST
 ‘This woman is so pretty.’
- (226) Anata-wa itsumo sensei-**sugi**-ru yo!
 you-TOP always teacher-too.much-NONPST EXCL
 ‘You’re always too much of a teacher!’
 (Context: A wife speaking to a husband who lectures her too much.)

Recall that although *sugiru* can appear with stative potentials, it can only do so in the *-te iru* construction, as in (227):

- (227) a. Kare-wa chichi-ni ni-**sugi**-te i-ru.
 he-TOP father-DAT resemble.too.much-TE be-NONPST
 ‘He looks too much like his father.’
- b. *Kare-wa chichi-ni ni-**sugi**-ru.
 he-TOP father-DAT resemble.too.much-NONPST

If stative potentials were unable to appear independently simply because they lack a categorizing *v* morpheme, we would expect (227b) to be grammatical, as *-sugi* would provide the necessary categorial information. However, even with an overt *v* morpheme, stative potentials still must be put into the *-te iru* form. Therefore, the inability of stative potentials to be independent main verbs cannot be due to the fact that they are bare roots.

The evidence presented above suggests that stative potentials do not function as uncategorized bare roots, and we must find another way to explain their inability to function independently as main verbs.

3.4.5.3 Stative potentials = semantic states

As we saw in Table 3.6, stative potentials are associated with unique semantics: they always denote individual-level properties. Using Wiltschko’s (2009a) definition of lexical suffixes in (221) above as a model, I propose that the behaviour of stative potentials is due to their lexical semantics rather than their syntactic properties. Specifically, I claim that stative potentials semantically denote states, making them incompatible with the

eventive semantics imposed by the *v* head. I propose the following definition for stative potentials:⁷⁵

$$(228) \quad \text{SP} =_{DEF} \sqrt{\text{root}}: \langle \lambda: \in \{\text{states}\} \rangle$$

Although stative potentials are syntactically categorized by a verbalizing head, they do not denote concepts from the domain of events, which are canonically associated with verbs. Instead, they uniformly semantically (λ) denote states, which are unlike events in that they do not *happen*; they *hold*. Following Hallman's (2009a) definition of states, stative potentials have no temporality, and therefore no event structure can be imposed on them.

I have proposed in section 3.4.1 that the semantic function of the categorizing head *v* is to introduce an event variable. In other words, it constructs an event from the root it selects in the syntax. If this root denotes a concept from the domain of events, as activity and instantaneous verbs do, its selection by *v* asserts the occurrence of that event. However, when a stative potential is selected by *v*, the resulting verb is infelicitous as an event because of the semantic properties of the root. The problem is not that stative potentials are *ungrammatical* as independent verbs; rather, they are simply uninterpretable. In order to be interpretable, the stative potential must be put into the *-te iru* form, which, as I have argued in section 3.4.2.1 above, imposes stativity on whatever it selects. The State head *i* therefore resolves the semantic conflict between the root and the verbalizing morpheme by imposing syntactic stativity on the predicate. This is also why stative potentials cannot appear in the *-te shimau* form: the Peripheral Appl head that introduces *shimau* obligatorily selects an atomic event. Because stative potentials denote states, they cannot be rendered atomic; as discussed in Chapter 2, atomicity is a property of events (specifically, events that exist of a single part). Therefore, they are infelicitous with *-te shimau* both alone (229), as the conflict between the stative semantics of the root and the eventiveness of the *v* is not resolved, and in the *-te iru* form (230), as the State head must be situated above the Peripheral Appl head:

(229) *Yoku benkyoo shi-ta ga, arifure-**te** **shima-tta.**
 often study do-PST but be.mediocre-TE put.away-PST
 [Intended] 'I studied frequently, but I was completely/ended up being mediocre.'

(230) *Yoku benkyoo shi-ta ga, arifure-**te** **i-te** **shima-tta.**
 often study do-PST but be.mediocre-TE be-TE put.away-PST
 [Intended] 'I studied frequently, but I was completely/ended up being mediocre.'

⁷⁵The specification for π is simply meant to indicate that stative potentials are not associated with any particular phonological (π) properties.

If stative potentials denote concepts from the domain of states, why, then, are they not states syntactically? I proposed in section 3.4.2 that Japanese stative verbs are functional rather than lexical; they form a very small class and lack significant lexical content (e.g., *iru/aru* ‘be’), and are therefore light verbs rather than root elements. Stative potentials, on the other hand, have the more substantial lexical content (e.g., *sugureru* ‘excel,’ *sobieru* ‘tower over’) associated with full verbs, indicating that they contain root elements. This, in turn, indicates that grammatical states and stative potentials are syntactically distinct. Furthermore, the fact that stative potentials appear in the *-te iru* form precludes them from structurally being states themselves: we have seen that stative verbs do not appear in the *-te iru* form, as shown in (231) and (232).

- (231) a. Toronto-ni i-ru.
 Toronto-DAT be-NONPST
 ‘I am in Toronto.’
 b. *Toronto-ni i-te i-ru.
 Toronto-DAT be-TE be-NONPST
- (232) a. Hon-ga tsukue-ni a-ru.
 book-NOM desk-DAT be₂-NONPST
 ‘There’s a book on the desk.’
 b. *Hon-ga tsukue-ni a-tte i-ru.
 book-NOM desk-DAT be₂-TE be-NONPST

The inability to appear in the *-te iru* form is the standard diagnostic for stative verbs: all verbs but stative verbs can appear in this form. The fact that stative potentials can (and, indeed, *must*) appear in this form indicates that they are not themselves syntactically stative verbs:

- (233) a. *Yama-ga sobie-ru.
 mountain-NOM tower-NONPST
 b. Yama-ga sobie-te i-ru.
 mountain-NOM tower-TE be-NONPST
 ‘A mountain stands tall.’

If stative potentials are not themselves part of the syntactic class of statives, could it be the case that they are selected by the State head directly, rather than first being selected by *v*? This would capture the stative semantics of stative potentials and avoid the conflict with the eventive *v* morpheme. However, if this were the case, we would not expect stative potentials to ever be able to appear outside of the *-te iru* form, and we

have seen that stative potentials in relative clauses take the simple past tense, as shown in (234) and (235):⁷⁶

- (234) [haha-ni ni-ta] josei
 mother-DAT resemble-PST woman
 ‘a woman who resembles/resembled mother’

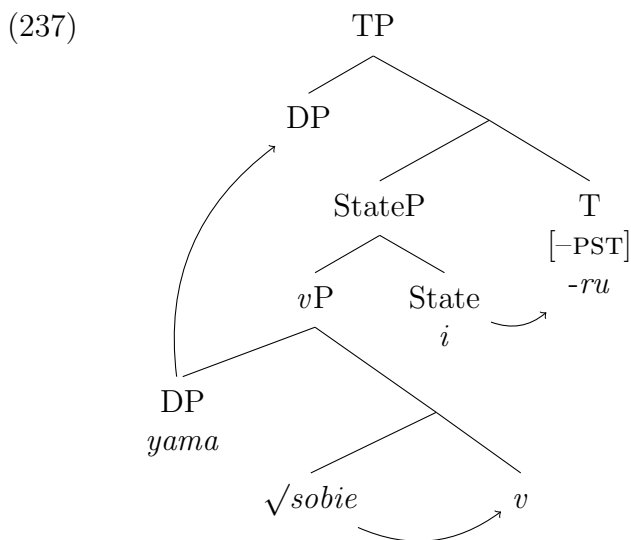
- (235) Taroo-wa [taka-ku sobie-ta yama]-o mi-te i-ru.
 Taroo-TOP tall-ADV tower-PST mountain-ACC look-TE be-NONPST
 ‘Taroo is looking at a mountain that stands tall.’

(Ogihara 1998, p. 102, his (34b))

Since I have argued in section 3.4.2.1 that the default spell-out of the State head is *i*, the fact that the stative potentials in the relative clauses appear outside of the *-te iru* form indicates that the syntactic State head is not present in these constructions. I therefore conclude that stative potential roots combine syntactically with *v*, which licenses the verbal tense morphology in the relative clauses in (234) and (235) above.

Based on the discussion above, I claim that the syntactic structure of a clause whose main verb is a stative potential is similar to that of an activity verb: the root is selected by *v*, and the *v*P is then selected by the State head, as shown in (236).

- (236) Yama-ga sobie-te i-ru.
 mountain-NOM tower-TE be-NONPST
 ‘A mountain stands tall.’



⁷⁶As noted in section 3.4.5.2, these forms are not syntactically adjectival; *niru* and *sobieru* both take the verbal past tense ending *-ta* in relative clauses rather than the adjectival endings *-katta* or *-datta*.

There is nothing in the syntax that requires the stative potential *v*P to be selected by State; it is the unique semantics of stative potentials (i.e., they denote states) that renders them infelicitous as main verbs in the simple tenses. The presence of the State head resolves the semantic conflict between the stativity of the stative potential root and the eventiveness of the *v* head by imposing syntactic stativity.

3.4.5.4 Relative clauses

I claimed above that the ability of stative potentials to appear in the simple past tense in relative clauses is evidence that stative potential roots combine syntactically with *v*. While this account explains the verbal morphology that stative potentials take in relative clauses, how can we account for the stative semantics? If stative potentials do not denote events, how are the stative semantics licensed in relative clauses without the stative marker *iru*?

Stative potentials are not the only class of verbs to receive a stative interpretation in relative clauses with the morphological ending *-ta*. It has been noted by Ezaki (2001), Jacobsen (2004), and Ogihara (2004) that instantaneous verbs with *-ta*⁷⁷ do not necessarily entail past events in relative clauses; Ogihara (2004) refers to these relative clauses as *adjectival relatives*. While the activity verbs *hataraku* ‘work’ and *oyogu* ‘swim’ in (238) entail events, the instantaneous verbs *tsukareru* ‘tire’ and *nureru* ‘become wet’ in (239) do not:

- | | | | | |
|-------|----|--|----|---|
| (238) | a. | hatairai-ta hito
work-PST person
‘people who worked’ | b. | oyoi-da gakusei
swim-PST student
‘students who swam’

(Jacobsen 2004, his (32a, b)) |
| (239) | a. | tsukare-ta kao
tire-TA face
‘a tired face’ | b. | nure-ta kooto
become.wet-TA court
‘a wet court’

(Jacobsen 2004, his (31a, b)) |

The fact that activity verbs entail events in relative clauses and instantaneous verbs do not is illustrated by (240) below: the activity verb *hataraku* ‘work’ can take the temporal adverb *kinoo* ‘yesterday’ in (240a), while the instantaneous verb *tsukareru* ‘tire’ cannot in (240b).

⁷⁷I will gloss instances of *-ta* that do not entail past events simply as TA.

- (240) a. kinoo hatarai-ta hito
 yesterday work-PST person
 ‘people who worked yesterday’
 b. *kinoo tsukare-ta kao
 yesterday tire-PST face (from Jacobsen 2004)

Ezaki (2001) explains adjectival relatives by claiming that there are two distinct *-ta* morphemes that can be used on verbs in relative clauses: deictic *-ta*, the regular past tense, which makes reference to a particular event, and non-deictic *-ta*, which does not. She argues that when stative potentials appear in relative clauses, they always take non-deictic *-ta*. The two types of *-ta* are illustrated with the instantaneous verb *kowareru* ‘break’ below. (241) entails a prior event of the car breaking and therefore uses the regular past tense, as indicated by its compatibility with the temporal adverb *senshuu* ‘last week,’ while (242) denotes a state of being broken without entailing any prior breaking event:

- | | | | |
|-------|--|-------|--|
| (241) | sen-shuu koware-ta kuruma
last-week break-PST car
‘a car that broke last week’ | (242) | koware-ta kuruma
break-TA car
‘a broken car’ |
|-------|--|-------|--|
- (Ezaki 2001, p. 108, her (5a) and (4))

Jacobsen (2004) refers to Ezaki’s non-deictic *-ta* as *tenseless*. He shows that tenseless *-ta* can appear in main clauses as well as relative clauses without making reference to past events, such as in the imperative (243):

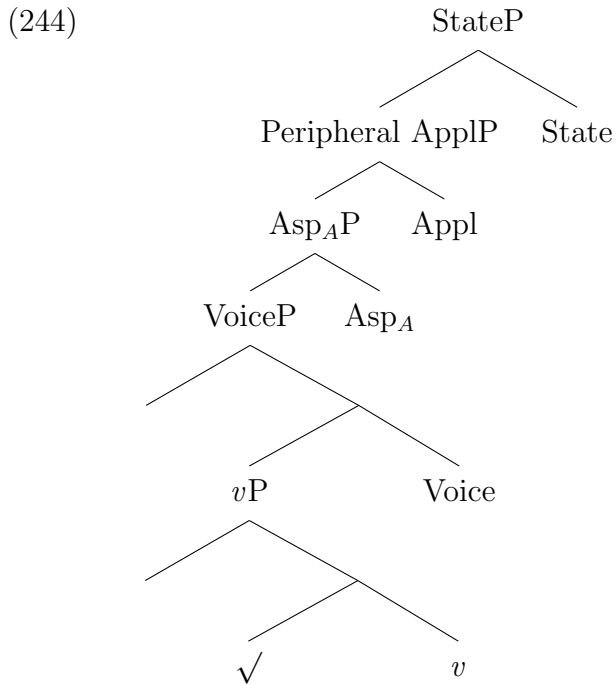
- (243) Moo hachi-ji da yo. Saa, oki-ta, oki-ta!
 already eight-o’clock COP EXCL INTJ get.up-TA get.up-TA
 ‘It’s already 8:00. Get up, get up!’
 (Jacobsen 2004, his (11))

It is clear, then, that non-deictic *-ta* encodes inflectional properties other than tense. I therefore conclude that the semantics of stative potentials in relative clauses in the absence of the *-te iru* form are licensed by non-deictic *-ta*. Further research, however, is still needed to determine the exact contribution of this morpheme.⁷⁸

⁷⁸One possibility, which I do not pursue further here, is that non-deictic *-ta* is a spell-out of State at the Infl level. This is in line with Ogihara’s (2004) proposal that adjectival relatives are states. I leave this idea to future research.

3.4.6 Summary

I have argued in the above sections that the aspectual system of Japanese is derived from the various functional heads in the *vP* domain, each of which may have a particular featural specification, as well as the properties of the different verb classes. The proposed maximal *vP* structure is repeated in (244), and the possible featural specifications of the relevant heads are given below:



- (245)
- | | |
|-----------------|------------------------|
| <i>v</i> | |
| <i>su</i> | ↔ <i>v</i> |
| ∅ | ↔ <i>v</i> / ✓ |
| <i>-sugi</i> | ↔ <i>v</i> [EXCESSIVE] |

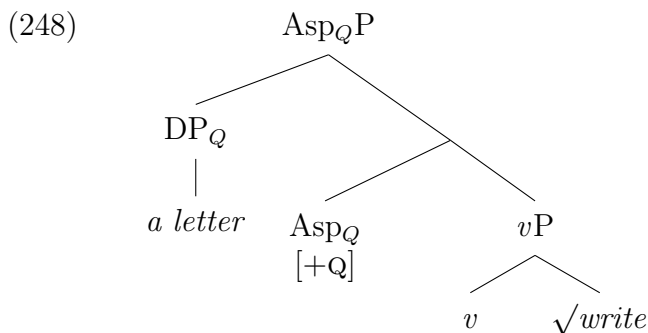
- (246)
- | | |
|---------------------|-------------------|
| <i>State</i> | |
| <i>i</i> | ↔ State |
| <i>ar</i> | ↔ State [F] |
| <i>-e</i> | ↔ State [ABILITY] |

- (247)
- | | |
|-------------------------------|--------------------------------|
| <i>Asp_A</i> | |
| ∅ | ↔ <i>Asp_A</i> [+AT] |

The Japanese aspectual phenomena result from the features of these functional heads interacting with the properties of the lexical verb classes: activity roots are unmarked, instantaneous roots have an *Asp_A* modifier, and stative potential roots denote states semantically. This small inventory of features yields the system described in section 3.2.

3.5 Telicity

Thus far, we have not discussed the class of accomplishments in Japanese. We saw in section 2.3.3 above that accomplishments and activities differ in that accomplishments are quantized predicates and activities are cumulative predicates (i.e., every subpart of an event is itself an instance of that event). We also saw that predicates are interpreted as cumulative by default, and that accomplishments are derived from the presence of Asp_Q , either as a root modifier or as a syntactic head within the *v*P. In English, when Asp_Q heads a projection, it takes a quantized DP in its specifier. The relevant structure is repeated in (248) for the quantized predicate *write a letter*:



In this chapter, I have not made a distinction between quantized predicates and cumulative predicates. Does this distinction exist in Japanese? I will argue that it does not. In other words, I claim that telicity is not linguistically represented in Japanese, and that, as a result, there is no class of accomplishments in Japanese. I begin this section with a brief consideration of the nominal system, as predicate quantization may in part rely on nominal quantization. In English, nominal quantization depends on the functional heads that project in the syntax (specifically, definiteness and number). Although the Japanese nominal system appears to be less articulated than that of English in that definiteness and number are not marked, Japanese nouns can take classifiers, indicating that nominal quantization is possible. However, I argue that this quantization is non-contrastive. I then turn to the question of whether predicates can be quantized in Japanese. I argue that because quantity is not a contrastive property of Japanese nominals, they cannot license the predicate quantity head Asp_Q in a specifier-head relation. As there are no independent feature bundles that can value Asp_Q in Japanese (as there are in Russian), and time-frame adverbials such as *ippun-de* ‘in a minute’ do not appear to be sensitive to any quantity properties of the predicate, I conclude that there is no Asp_Q in Japanese.

3.5.1 Nominal quantization

We have seen in section 2.3.2.3 above that most English nouns are not lexically specified as individuated (count) or non-individuated (mass), Cowper and Hall (2012) follow Wiltschko (2009b) in positing a distinction between features that operate as independent syntactic heads and features that modify without projecting. They propose that most English nouns have no modifying feature that specifies individuation and are therefore compatible with both mass and count interpretations (although they may canonically be associated with one or the other). The canonically mass noun *tea* and the canonically count noun *eel* can both be interpreted as count (249) or mass (250) given appropriate context:

- (249) a. *The teas* of Sri Lanka are particularly nice.
 b. I'd like *a tea*, please.
 c. I'd like *one tea*, please.
 d. I'd like *these two teas*, please.
 e. My hovercraft is full of *eels*.
 f. There is *an eel* in my hovercraft.
 g. There is *one eel* in my hovercraft.
 h. *These two eels* won't leave my hovercraft.
- (250) a. The cup was full of *tea*.
 b. There is *eel* all over my hovercraft.

(Cowper and Hall 2012, p. 30-31, their (4)–(5))

Cowper and Hall (2012) argue that *tea* and *eel* are both lexically unspecified for the mass/count distinction. The count interpretations in (249) come from the presence of the individuation head #: an unmarked # combined with an unmarked D is spelled out as *a(n)* (e.g., *a tea*, *an eel*), and a # specified as >1 (i.e., plural) is spelled out as *-s*. The mass interpretations in (250) arise because the nouns contrastively lack #Ps and are therefore non-individuated.

The Japanese nominal classification system differs from that of English in that there is no overt marking for either number or definiteness; nouns are not marked for either singular vs. plural or for definite vs. indefinite. In (251) below, the bare noun *keeki* 'cake' is compatible with a mass reading, a singular indefinite reading, a singular definite reading, a plural indefinite reading, and a plural definite reading:

- (251) Watashi-wa keeki-o tabe-ta.
 I-TOP cake-ACC eat-PST
 ‘I ate cake / some cake / a cake / the cake / cakes / the cakes.’

The multiple possible interpretations of the bare noun *keeki* ‘cake’ suggest that Japanese nominals are unspecified for individuation. Like the English mass nouns *tea* and *eel* in (250) above, the noun *keeki* ‘cake’ has no overt morphological marking for either definiteness or number. However, the lack of a # projection is contrastive in English, yielding a default mass interpretation, while the Japanese form is ambiguous: the bare nominal *keeki* ‘cake’ in (251) may be interpreted as mass or count, singular or plural, definite or indefinite.

Overt nominal quantization is possible in Japanese. Cowper and Hall (2012) argue that the individuation feature # has two possible dependent features: it may be elaborated by either number of quanta (plural) or type of quanta (classification). Japanese, like Mandarin, has a large inventory of classifiers: nouns are classified based on category (e.g., *satsu* for books, *mai* for thin flat objects). A nominal cannot be counted without a classifier, nor can a classifier appear without a numeral, as shown below:⁷⁹

- (252) John-wa hon san-satsu-o ka-tta.
 John-TOP book three-CL-ACC buy-PST
 ‘John bought three books.’

(Watanabe 2006, p. 244, his (3a))

- (253) a. *John-wa hon san-o ka-tta.
 John-TOP book three-ACC buy-PST
 b. *John-wa hon satsu-o ka-tta.
 John-TOP book CL-ACC buy-PST

(252) is overtly quantized by the classifier *satsu*, but this quantization is not contrastive. The absence of a classifier does not result in a non-quantity interpretation, since bare

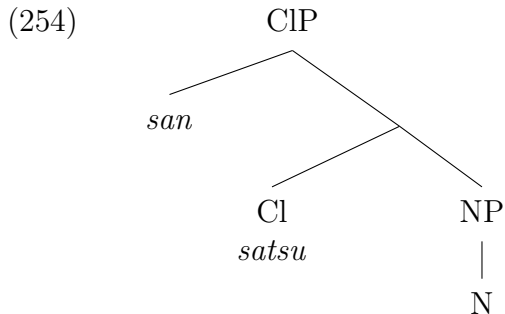
⁷⁹Watanabe (2006) points out that there are multiple configurations in which a noun can appear with a classifier; for example, (252) may be equivalently expressed as follows:

- (i) a. John-wa san-satsu-no hon-o ka-tta.
 John-TOP three-CL-GEN book-ACC buy-PST
 b. John-wa hon-o san-satsu ka-tta.
 John-TOP book-ACC three-CL buy-PST
 c. John-wa san-satsu hon-o ka-tta.
 John-TOP three-CL book-ACC buy-PST

(Watanabe 2006, p. 244, his (3b-d))

nouns are compatible with quantity interpretations (as in (251) above).

Based on this, I assign the following structure to the classified nominal *hon san-satsu* ‘three books’:



The fact that Japanese classifiers require numerals (i.e., CIP must have a numeral in its specifier, as in (254)) indicates that classification necessarily involves quantization. English and Japanese can be compared using Verkuyl’s (1993) notion of *specified quantity*. In English, a nominal can denote a specified quantity in a number of different ways: a DP with a numeral in the specifier of #P, a singular DP, irrespective of its definiteness, and any definite DP (i.e., a DP whose existence in the discourse is established and thus whose properties are known to all discourse participants) are all quantized. In Japanese, nominals can only be overtly quantized with a numeral, which must appear in the specifier of CIP, meaning that quantized nominals must be classified. However, this quantization is non-contrastive; a nominal that lacks a CIP is not interpreted as non-quantized, but is instead ambiguous.

3.5.2 Predicate quantization

We have seen above that nominal quantization is non-contrastive in Japanese; while nominals do receive a quantity interpretation when they appear with a CIP that takes a numeral in the specifier position, they are ambiguous when the CIP is not present. Thus, Japanese differs from English in that quantization is not a grammatical contrast but an adjunct property. This lack of contrastive quantization in Japanese indicates that Asp_Q , Borer’s (2005b) locus of telicity, will not have the same properties in Japanese as it does in English; specifically, I show that Japanese nominals do not licence Asp_Q in a specifier-head configuration the way that English quantity DPs do. Furthermore, Asp_Q is not licensed directly by a feature bundle in Japanese, the way it is in Russian. This entails that Asp_Q is not part of the Japanese *v*P architecture.

As discussed in section 2.3.3.1, Borer (2005b) argues that events are quantized when a verb stem is embedded within the aspectual quantity phrase Asp_Q^{max} , which is licensed

either indirectly by a specifier-head relation with a quantity DP or directly by the merger of a feature bundle in its head. In English, quantization is a contrastive property of DPs; a quantity DP in the specifier of the Asp_Q projection copies its value onto the Asp_Q head, resulting in a quantity predicate. Thus, in English, nominal quantization directly influences the aspectual interpretation of a predicate. As we have seen, this is a robust aspectual contrast. For example, the time-frame adverbial test (e.g., *in five minutes*) is well known as a diagnostic of telicity, and yields very different results for predicates with (255a) and without (255b) quantized direct objects:

- (255) a. Hannah ate an apple in five minutes.
 b. *Hannah ate apples in five minutes.

The verb *eat* is compatible with the time-frame adverbial *in five minutes* when the direct object is quantized (*an apple*) and incompatible with it when the direct object is not quantized (*apples*). However, in Japanese, predicates with direct objects without classifiers are compatible with time-frame adverbials (e.g., *ippun-de* ‘in a minute’) (256) just as predicates with classified direct objects are (257):⁸⁰

- (256) Bill-wa ip-pun-de pan/ringo-o tabe-ta.
 Bill-TOP one-minute-in bread/apple-ACC eat-PST
 ‘Bill ate bread/apple in one minute.’

(Yoshida 2008, p. 422, her (3a))

- (257) Bill-wa ip-pun-de ringo hito-tsu-o tabe-ta.
 Bill-TOP one-minute-in apple one-CL-ACC eat-PST
 ‘Bill ate an apple in one minute.’

I have argued in the previous section that quantity is non-contrastive in the Japanese nominal system; although nominals can be overtly quantified by a classifier, as in *ringo hito-tsu* ‘one apple’ (literally, ‘apple one-unit’) in (257), the absence of classification does not make a nominal non-quantized, as shown by the compatibility of the non-classified nouns *pan* ‘bread’ and *ringo* ‘apple’ with *ippun-de* ‘in a minute’ in (256). Japanese time-frame adverbials like *ippun-de* ‘in a minute’ require quantity predicates just as English ones do; however, non-classified Japanese nouns are ambiguous between a quantity interpretation and a non-quantity interpretation. This means that while a predicate with a non-classified direct object like *ringo-o tabe-ta* ‘ate apple’ is compatible with both a quantity interpretation or a non-quantity interpretation, only the quantity interpretation is available when a time-frame adverbial is present. Thus, I depart from Borer (2005b)

⁸⁰I follow Yoshida (2008) in glossing Japanese bare nouns as English singular bare nouns.

in that I make a distinction between contrastive quantity and non-contrastive quantity. Only a contrastively quantity nominal can value Asp_Q as quantity in a specifier-head relation, the way that English quantity DPs do, as shown in (248) above. Because nominal quantization is not contrastive, Japanese predicates cannot be quantized by means of a quantity direct object.

It is still in principle possible for Japanese predicates to have a contrast for quantity, even if there is no quantity contrast in the nominal system. Borer (2005a, b) argues that functional heads can be assigned range either indirectly, by specifier-head configuration, or directly, by the merger of functional features. Recall from Chapter 2 that Borer (2005b) discusses this specifically for the quantization of predicates, claiming that in Russian, Asp_Q is assigned range directly by the merger of quantificational prefixes. These prefixes cause the predicate to be interpreted as quantity even in the absence of a quantity internal argument, as repeated in (258):

- (258) a. Ivan guljál'.
Ivan walk.PST
'Ivan walked/was walking.'
- b. Ivan **na**-guljál'sja po górodu.
Ivan NA-WALK.PST.REFL around town
'Ivan walked a lot/enough/to his heart's content around the town.'
- c. Ivan **po**-guljál po górodu.
Ivan PO-WALK.PST around town.
'Ivan took a (short) walk around town.'
- (Borer 2005b, from Filip 2000)

However, there does not appear to be any equivalent morpheme in Japanese; there is no feature bundle that forces a predicate to be interpreted as quantity. Telicity, then, does not seem to be a grammatical category in Japanese.

The generation of telicity in Japanese appears to be adjunctive, just as nominal classification is adjunctive. A time-frame adverbial such as *ippun-de* 'in a minute' specifies that an event has an endpoint, but this specification is non-contrastive. The lack of such an adverbial does not entail that a particular event lacks a conceptual endpoint; the event itself may have a culmination, but the construction is linguistically ambiguous. Therefore, I claim that the Asp_Q head is not present in Japanese: telicity is not a contrastive property, but an adjunct one that may arise from the lexical semantics of time-frame adverbials. The consequence of this claim is that accomplishments are not a separate verb class in Japanese, and there is thus no distinction between different types of non-atomic predicates (i.e., those that describe events with an inherent endpoint versus those that describe events with no inherent culmination).

3.6 Summary

In this chapter, I have considered the aspectual system of Japanese through the lens of the framework established in Chapter 2. The main claims of this chapter are as follows: (1) the meanings of the *-te iru* auxiliary construction are best analyzed as stative; (2) states are morphosyntactically marked over events in Japanese; (3) the position of stativity in Japanese is within the *vP*; (4) the other aspectually relevant heads in the *vP* are *v*, which introduces a semantic event variable, and Asp_A , which encodes an event as atomic; (5) stative potentials semantically denote states, and are therefore semantically incompatible with the event variable introduced by *v*; and (6) telicity is not a contrastive property in Japanese, meaning that there is no class of accomplishments.

Chapter 4

Extensions and Conclusion

4.1 Summary

In the previous chapters, I have presented a morphosyntactically based analysis of aspect that relies on both theoretical principles and aspectual data. I have argued that both viewpoint and lexical aspect are derived from functional properties that are present at various levels of syntactic structure. These properties, quantity (Asp_Q) and atomicity (Asp_A), may be active either at the lexical level (i.e., within the root), at the vP level (i.e., within the predicate), or at the IP level (i.e., within the clause); the effects of these properties depend on the domain over which they operate, as shown by the differences in the aspectual contrasts made by English and Japanese (i.e., states vs. events, quantity vs. non-quantity, and atomicity vs. non-atomicity).

I have claimed that Japanese and English differ with respect to the relative markedness of states and events. While events are generally thought to be more marked than states (as Cowper 2005 argues for English), I have shown that states are marked in Japanese. While the contrast between states and events is made at the IP level in English (i.e., the suffix *-ing*, which spells out non-atomicity, can only be used in eventive clauses), stativity is encoded within the vP in Japanese via a State head. I have shown that Japanese verbs that contain root elements (i.e., non-light verbs) are made stative when they are selected by State, which is the topmost projection in the Japanese vP , and are otherwise interpreted as eventive by default (with the exception of stative potential verbs, which are semantically incompatible with an eventive interpretation). Stative verbs, on the other hand, are functional elements without root components, and are merged directly in the State head.

I have argued that the quantity head Asp_Q (Borer 2005b) is active at two distinct levels in English: the root and the vP . When a root is lexically specified as quantity

(e.g., *cool*), Asp_Q is a root modifier, and therefore does not project. This means that the absence of Asp_Q is non-contrastive at the root level: a root that lacks Asp_Q at the root level is not non-quantity, but unspecified for quantity. Asp_Q can also appear as an independent syntactic head that is licensed by a quantity DP in its specifier. Since the vP -level Asp_Q is a head that projects, its absence is contrastive: a vP that lacks an Asp_Q projection is interpreted as non-quantity by default. In contrast, Asp_Q is not active in Japanese, and therefore it does not have a contrast for telicity.

Finally, I have claimed that there are two possible instantiations of Asp_A : atomicity and non-atomicity. Asp_A is active in both English and Japanese, but at different structural levels. In both languages, [+AT] is a lexical feature of certain roots (i.e., Japanese instantaneous verbs such as *shinu* ‘die,’ English achievement verbs such as *arrive*), encoding the fact that they describe events that consist of a single part. Like Asp_Q in English, Asp_A is a root modifier, meaning that its absence on other roots is non-contrastive. In English, Asp_A is also active at the IP level; the progressive morpheme *-ing* spells out [-AT] at the clausal level, yielding imperfectivity. In Japanese, on the other hand, Asp_A projects at the vP level rather than the IP level. It encodes atomicity, condensing the event it selects to a single part.

Thus, the analysis presented here makes use of a small number of syntactic features and can account for the differences in the aspectual systems of English and Japanese while capturing similarities between the two languages.

4.2 Extension to other languages

The framework presented here gives us the beginnings of a typology of aspectual systems. The next obvious step is to consider other languages within this framework in order to test its predictive power and expand the typology. In this section, I make some preliminary observations about Inuktitut and Russian, comparing them to Japanese and English and presenting some initial hypotheses about their aspectual systems.

4.2.1 Inuktitut

Inuktitut is a polysynthetic language, and thus is characterized by long multimorphemic words, as in (259) below:⁸¹

⁸¹The data in this section come from several different dialects of Inuktitut. The literature cited in this section do not note any dialectal variation in terms of aspect. I therefore assume that there are no significant differences among the dialects. However, a closer investigation of the individual dialects is needed to confirm this assumption; I leave this for future research.

- (259) annulaksi-kkanni-jualu-gasu-lauqsima-guma-nngit-tsiaq-galuaq-tunga.
 imprison-again-a.lot-try-ever-want-NEG-very-already-PART.1S
 ‘I would never ever even want to try to end up in jail ever again even for a bit.’
 (North Baffin)
 (from Johns 2007, p. 564, her (44))

Inuktitut verbs are minimally made up of a root (*annulaksi* ‘imprison’ in (259)) and an inflectional ending expressing tense, mood, and person (*-tunga* in (259)), with any number of optional derivational affixes appearing between them. Some of these postbases affect the aspectual interpretation of a clause, such as the inceptive morpheme *-liq* (260) and the completive morpheme *-jariiq* (261):⁸²

- (260) Kata-li-ttuk.
 fall-LIQ-PART.3S
 ‘He’s about to fall.’ (Labrador Inuttitut)
 (Clarke 2009, p. 294, her (1))
- (261) Titiraq-riiq-qau-junga.
 letter-JARIIQ-REC.PAST-PART.1S
 ‘I finished a letter.’ (South Baffin)
 (Clarke 2009, p. 294, her (2))

In addition to overt aspectual morphemes, Macdonald and Spreng (2006) and Hayashi and Spreng (2005) have claimed that the antipassive construction, in which the agent takes absolutive case and the patient takes oblique case, also has an aspectual effect: it causes an event to be interpreted as imperfective, as shown by the contrast between (262a) and (262b).

- (262) a. Anguti quqir-**si**-juq nanu-mik.
 man-ABS shoot-AP-PART.3S polar.bear-OBL
 ‘The man is shooting a polar bear.’
- b. Anguti-up nanuq quqir-jaa.
 man-ERG polar.bear-ABS shoot-PART.3S/3S
 ‘The man shot the polar bear.’ (South Baffin)
 (Macdonald and Spreng 2006, their (4))

⁸²In accordance with the orthographic conventions of Labrador Inuttitut, I use the grapheme *K* to represent the voiceless uvular stop [q] in data from this dialect. *k* represents the voiceless velar stop [k].

I have claimed in previous work (Clarke 2009) that Inuktitut lacks an inflectional contrast for viewpoint aspect. Specifically, I argued that there is no evidence of either Interval or Moment, the possible dependent features of Event in Cowper's (2005) hierarchy. I also claimed that all aspectual information in Inuktitut is encoded within the *vP*. I briefly summarize my arguments below.

4.2.1.1 Clarke (2009)

Swift and Bohnemeyer (2004) claim that Inuktitut viewpoint aspect is entirely dependent on the telicity of the verb: a temporally zero-marked telic verb is interpreted as perfective, and a temporally zero-marked atelic verb is interpreted as imperfective. This claim is based on the data in (263) and (264):

- (263) Ani-juq.
 go.out-PART.3S
 'He/she went out.' (Tarramiut)
 (Swift and Bohnemeyer 2004, p. 267, their (4))

- (264) Pisu-ttuq.
 walk-PART.3S
 'He/she is walking.' (Tarramiut)
 (Swift and Bohnemeyer 2004, p. 267, their (5))

They argue that the verb stem in (263), *ani* 'go out,' is an achievement and therefore telic, and so has a perfective, past tense interpretation in the absence of aspectual markers. In contrast, the verb stem *pisuk* 'walk' in (264) is an atelic activity verb, and therefore receives an ongoing, present tense interpretation. This, they claim, shows that there is a correlation between telicity and perfectivity in Inuktitut; an unmarked clause is interpreted as perfective when the verb is telic and imperfective when the verb is atelic. In other words, they argue that viewpoint aspect is determined by lexical aspect in Inuktitut.

(263) and (264) above are the only Inuktitut data that Swift and Bohnemeyer (2004) discuss in their analysis. Their theory would predict that an aspectually unmarked clause with a stative verb would receive an ongoing interpretation, as statives are atelic, and that a clause with an accomplishment verb would receive a past-time interpretation, as accomplishments are telic. The prediction is borne out for statives, as shown in (265):

- (265) Kuviasu-juk.
 be.happy-PART.3S
 ‘He/she is happy.’
 NOT: ‘He/she was happy.’ (Labrador Inuttitut)
 (Clarke 2009, p. 301, her (8))

Accomplishment verbs, however, do not behave as their analysis predicts. In aspectually unmarked clauses, they receive an ongoing interpretation, just as atelic activity verbs do. This is shown in (266):

- (266) Aapu nigi-jara.
 apple.ABS eat-PART.1S/3S
 ‘I’m eating an apple.’
 NOT: ‘I ate an apple.’ (South Baffin)
 (Clarke 2009, p. 301, her (9))

If the past-time interpretation of (263) above is due to the fact that the stem *ani* ‘go out’ is telic, we would expect the accomplishment verb in (266) to receive a past-time interpretation as well. However, temporally unmarked accomplishment verbs receive the same present-time, ongoing interpretation as activity verbs. Therefore, it cannot be telicity that determines the aspectual interpretation of a particular predicate.

The data in (263)–(266) above show that states, activities, and accomplishments all receive an ongoing interpretation when unmarked, while achievements receive a past interpretation. According to Vendler’s (1957) aspectual categories, the property that these three classes share is *durativity* rather than telicity; achievements are the only punctual class. This is what determines the interpretation that a temporally unmarked predicate receives, as shown in Table 4.1 below:

Table 4.1: Interpretation patterns of verb classes in Inuktitut

	States	Activities	Accomplishments	Achievements
Telic	no	no	yes	yes
Durative	yes	yes	yes	no
Present/Past	present	present	present	past

(Clarke 2009, p. 302, her Table 2)

Furthermore, the distinction between (263) and (264) above is not exclusively aspectual; the more salient distinction is one of tense. In her examination of the different interpretations of the Inuktitut unmarked tense, Hayashi (2005) determines that all unmarked

eventualities are interpreted as present except for achievements, which are interpreted as ‘just-finished’ (i.e., completed in the very recent past). She attributes this contrast to Cowper’s (1998:10) Principle of Non-Simultaneity of Points, according to which exact simultaneity cannot be imposed on two temporal points by tense morphemes or other functional elements, but only by lexical items (e.g., *at the exact same time*, etc.). The fact that achievements are represented as instantaneous (i.e., as points in time) means that the (necessarily singleton) moment associated with the event cannot be made simultaneous with the moment of speech. Hayashi (2005) posits a null present tense morpheme in Inuktitut, and argues that this null morpheme, when associated with an achievement verb root, cannot force the moment of the event to be simultaneous with the moment of speech. Therefore, achievement verbs must be interpreted as occurring just prior to the moment of speech, not contemporaneously with it.

The above discussion indicates that, contra Swift and Bohnemeyer (2004), the different interpretations of temporally unmarked Inuktitut predicates are correlated with durativity, not with telicity. Furthermore, Hayashi’s (2005) analysis shows that these different interpretations are better analyzed as temporal rather than aspectual. Thus, I concluded in Clarke (2009) that lexical aspect does not influence viewpoint aspect in Inuktitut.

Further, I claimed in Clarke (2009) that aspectual distinctions in Inuktitut originate within the *v*P. The inceptive morpheme *-liq* and the habitual morpheme *-gak* are both incompatible with verb roots that do not describe events (such as *arnau* ‘be a woman’ and *Inuu* ‘be Inuit’), indicating that these morphemes are sensitive to aspectual properties.

- (267) a. Pisu-liq-tuq.
walk-LIQ-PART.3S
‘He/she is going for a walk.’
- b. *Arna-u-li-junga.
woman-be-LIQ-PART.1S
[Intended] ‘I’m starting to be a woman.’
- c. *Inu-u-li-juq.
Inuit-be-LIQ-PART.3S
[Intended] ‘He/she is starting to be Inuit.’ (Igloolik)

(Clarke 2009, p. 311, her (21))

- (268) a. Tilli-ga-juk.
steal-GAK-PART.3S
'He always steals, he keeps stealing.'
- b. *Anna-u-ga-juk.
woman-be-GAK-PART.3S
[Intended] 'She is always a woman.' (Labrador Inuttitut)
- (Clarke 2009, p. 311, her (22))

The intended inceptive interpretations of (267b) and (267c) are impossible with *-liq*, as is the intended habitual reading of (268b) with *-gak*. This, I argued, showed that these morphemes are restricted to eventive *v*P's; they cannot force an eventive interpretation of a canonically stative clause. In other words, these morphemes necessarily select an event, indicating that there must be aspectual distinctions (minimally stativity vs. eventiveness) within the Inuktitut *v*P.

Finally, I argued that the distinct interpretation of the antipassive construction, which Hayashi and Spreng (2005) claim to be imperfectivity, is actually related to lexical aspect rather than viewpoint aspect. Hayashi and Spreng (2005) note that achievement verbs are interpreted differently depending on whether they are ergative-marked or antipassive-marked, as in (269):

- (269) a. Anguti-up arnaq kunik-taa.
man-ERG woman.ABS kiss-PART.3S/3S
'The man kissed the woman.'
- b. Anguti kunik-si-vuq arna-mik.
man.ABS kiss-AP-PART.3S woman-OBL
'The man is kissing a woman.' (Mittimatalik)
- (Hayashi and Spreng 2005:8)

(269a) is a normal ergative clause, with an ergative-marked agent, an absolutive theme, and verbal agreement with both the subject and the object. In (269b), in which the antipassive morpheme *-si* appears on the verb, the agent is absolutive rather than ergative; the theme takes oblique case and does not participate in verbal agreement. While achievement verbs usually get a past-time interpretation in the (null) present tense, as in (269a), they are interpreted as ongoing at the moment of speech in the antipassive, as in (269b). Hayashi and Spreng (2005) conclude that this is because the antipassive morpheme encodes imperfective aspect. However, I argued in Clarke (2009) that the antipassive morpheme actually encodes *durativity* rather than imperfectivity. Achievement verbs differ from activities and accomplishments in that they are punctual rather than durative, and as Hayashi (2005) argues, this causes them to be interpreted

as ‘just finished’ in the present tense due to the Principle of Non-Simultaneity of Points (Cowper 1998:10). If the antipassive morpheme contributes a durative feature, the event that the achievement verb describes is no longer represented as a temporal point, which eliminates the need for the exceptional interpretation of the present tense. Therefore, the antipassive morpheme renders the event durative rather than punctual, which means that it receives the normal present tense interpretation.⁸³ Imperfectivity is not required to explain the interpretation of achievement verbs in the antipassive.

Thus, I proposed in Clarke (2009) that Inuktitut lacks marked viewpoint aspect; all clauses are interpreted neutrally with respect to perfectivity. I also claimed that the *vP* is the locus of aspectual contrast in Inuktitut.

4.2.1.2 Reinterpretation

The analysis I presented in Clarke (2009) assumes that viewpoint aspect comes from a marked feature of Event in Infl (either Interval or Moment). However, in this thesis, I have proposed an alternate view: I claim that viewpoint aspect is the result of either atomicity or non-atomicity taking scope over a clause. Can the analysis of Inuktitut I presented in Clarke (2009) be reinterpreted within the framework of this thesis?

I have proposed that achievement (or *instantaneous*) verbs are characterized by atomicity: unlike cumulative events, they consist of a single part. Thus, the distinction I made between punctual and durative events in Clarke (2009) can be reframed as a distinction between atomic and non-atomic events. Recall from Chapter 3 that in Japanese, activity verbs are interpreted as ongoing in the *-te iru* form and instantaneous verbs are interpreted as just finished in the *-te iru* form, as in (270). Strikingly, the present tense interpretations of Inuktitut activities and achievements mirror the Japanese perfectly: as we have seen above, activity verbs are ongoing in the present tense (271a), and achievements are just finished (271b):

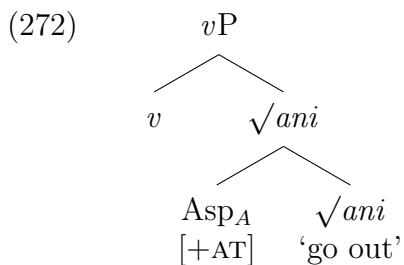
- (270) a. Kare-wa aru-ite i-ru.
 he-TOP walk-TE be-NONPST
 ‘He is walking.’
- b. Kare-wa dekake-te i-ru.
 he-TOP go.out-TE be-NONPST
 ‘He has gone out.’

⁸³I also point out in Clarke (2009) that the use of the imperfective in the translation of (269b) is due to the fact that ongoing present-time events are expressed in the present progressive in English. This does not reflect the Inuktitut aspectual system, but is simply a consequence of the properties of English as a metalanguage. For a discussion about the challenges presented by semantic fieldwork, see Matthewson (2004).

- (271) a. Pisu-ttuq.
walk-PART.3S
'He/she is walking.' (Tarramiut)
- b. Ani-juq.
go.out-PART.3S
'He/she went out.' (Tarramiut)

(Swift and Bohnemeyer 2004, p. 267, their (4) and (5))

These parallel interpretations suggest that Inuktitut achievements are like Japanese instantaneous verbs in that they are lexically specified as atomic. The instantaneous verb *ani* 'go out' would therefore differ from activity verbs like *pisuk* 'walk' in that its root is modified by Asp_A , as shown in (272):



However, the antipassive construction makes this analysis problematic. As shown in (269b) above, achievement verbs are interpreted as ongoing in the antipassive, rather than receiving the just-finished interpretation they receive in the ergative construction.⁸⁴ In Clarke (2009), I claim that the antipassive morpheme encodes durativity, which, within the framework of this analysis, is equivalent to non-atomicity (i.e., $Asp_A [-AT]$). However, if non-atomicity is a marked feature in the Inuktitut vP , we would not expect atomicity (i.e., $Asp_A [+AT]$) to be a marked feature within the verb root.

Spreng (2012) argues that the antipassive marker spells out imperfective viewpoint aspect, basing her claim on the fact that the overt antipassive morpheme only appears with punctual verbs (273); durative verbs have a null marker in the antipassive construction (274):

- (273) Piita nanur-mit quqir-*si*-juq.
Peter.ABS polar.bear-OBL shoot-AP-PART.3S
'Peter is shooting a polar bear.' (South Baffin)

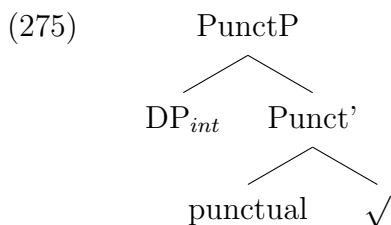
(Spreng 2012, p. 20, her (17a))

⁸⁴The antipassive also affects the case of the arguments in the sentence; I do not discuss these properties of the construction.

- (274) Arnaq miqsuq- \emptyset -tuq qarling-nit.
 woman sew-AP-PART.3S pant-OBL.DUAL
 ‘The woman is sewing a pair of pants.’ (Mittimatalik)
 (Spreng 2012, p. 23, her (24b))

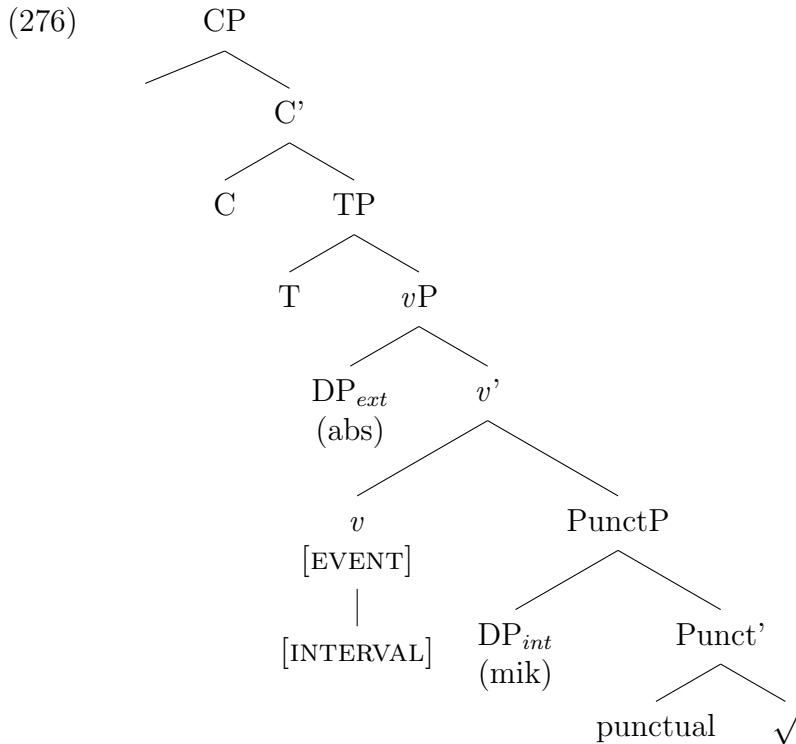
Spreng argues that different verb types have different default viewpoint aspectual interpretations: durative verbs like *miqsuq* ‘sew’ (274) are imperfective by default, and punctual verbs like *quqir* ‘shoot’ (273) are perfective by default. Her claim that the antipassive morpheme encodes imperfective aspect explains both the ongoing interpretation punctual verbs receive in the antipassive and the fact that durative verbs do not take the antipassive morpheme. Furthermore, she claims that viewpoint aspect is realized within the *v*P projection in Inuktitut; she argues that Inuktitut viewpoint aspect is dependent on the punctuality of the verb and the case and agreement configuration in a particular clause, both of which are encoded within the verb phrase. In other words, she claims that the locus of Inuktitut viewpoint aspect is not in Infl (as it is in English, according to Cowper (2005)) but in *v*.

Spreng (2012) claims that durative verbs and punctual verbs differ syntactically in that only the former merge with *v* in intransitive clauses; punctual roots merge with a punctual head, which hosts the internal argument DP in its specifier, and the resulting PunctP only merges with *v* in transitive clauses (i.e., when there is an external argument). This means that punctual verbs “...neither constitute verbs nor events” (Spreng 2012: 189) in intransitive clauses.⁸⁵ Spreng argues that in transitive clauses with punctual verbs, the aspectual interpretation depends on the properties of *v*, which also determine the case properties of the arguments: *v* may have an [INTERVAL] feature, which results in oblique case (*-mik*) on the internal argument. [INTERVAL] is spelled out as *-si*, which encodes imperfective aspect. She proposes the structure in (275) for an intransitive punctual verb and the structure in (276) for an antipassive-marked punctual verb:



(Spreng 2012, p. 142, her (213))

⁸⁵Spreng claims that this is due to the fact that “both achievements and stative verbs are punctual verbs” (182). I do not adopt this treatment of stative verbs as punctual, but do not discuss this further.



(Spreng 2012, p. 143, her (214))

I claim that Inuktitut poses a problem in that both atomicity and non-atomicity appear to be overtly marked: achievements are specified as atomic and the antipassive construction is specified as non-atomic. Spreng’s analysis provides a way to capture these facts (albeit from a different perspective); however, there are some potential theoretical problems with her account. For example, the structures given in (275) and (276) indicate that achievement verbs are derived syntactically. Spreng does not discuss any formal mechanism that determines which roots merge with a *v* head and which merge with a punctual head. Furthermore, the claim that punctual verbs are not verbs in intransitive clauses is difficult to justify, since they take the same types of verbal morphology that other verbs do. Finally, Spreng’s proposal that viewpoint aspect is situated in *v* rather than Infl needs to be examined closely. I have claimed here that viewpoint aspect and lexical aspect are encoded by the same range of features; the difference between them is the domain over which they operate. What exactly would it mean for Inuktitut to encode viewpoint aspect, which I have defined as *clausal* aspect, within the *vP*? Is it possible to reinterpret Spreng’s claims in a way that does not appeal to viewpoint aspect specifically? More work is needed in order to incorporate the insights of Spreng’s proposal into the framework presented in this thesis to generate a satisfactory account of Inuktitut aspect.

4.2.2 Russian

Russian (and, more generally, Slavic) aspect has been extensively studied. Russian has a very robust “perfective/imperfective” distinction: verb stems are lexically categorized as perfective or imperfective, and these categorizations can be altered with the attachment of aspectual affixes. Sherkina-Lieber (2005) takes a novel approach to Russian aspect, arguing that the so-called imperfective suffix actually realizes the feature *Durative*. She also claims that verbal prefixes impose boundaries on an eventuality, which alters the lexical aspect of the predicate. This idea is expanded in Armoškaitė and Sherkina-Lieber (2008); they propose that the Russian suffix *-nu* (and the analogous Lithuanian suffix *-elė*⁸⁶), which is usually described as a perfectivizer, is a uniactional marker that belongs to the category *Number* (i.e., it indicates that an action occurs exactly once). In this section, I discuss how the theoretical approach proposed by Armoškaitė and Sherkina-Lieber is compatible with the framework presented in this thesis.

The Russian suffix *-nu* derives a verb meaning ‘to V once/in a moment’:

- (277) a. *liz-a-t'*
 lick-TV-INF
 ‘to lick/be licking’
- b. *liz-nu-t'*
 lick-SUF-INF
 ‘to (have) lick(ed) once’

(Armoškaitė and Sherkina-Lieber 2008, p. 1, their (1))

Verbs with this suffix necessarily denote single events (278), and are therefore compatible with numeral adverbials (279a), unlike their bare counterparts, which often cannot (279b):

- (278) *Marko Polo neterpelivo top-nu-l.*
 Marco Polo impatiently stomp-SUF-PST
 ‘Marco Polo stomped once impatiently.’
 NOT: ‘Marco Polo stomped impatiently more than once.’

(Armoškaitė and Sherkina-Lieber 2008, p. 3, their (6))

⁸⁶For brevity, I focus on Russian in my discussion. See Armoškaitė and Sherkina-Lieber (2008) for the Lithuanian data.

- (279) a. Marko Polo neterpelivo top-**nu**-l tri raza.
 Marco Polo impatiently stomp-SUF-PST three times
 ‘Marco Polo did a stomp three times impatiently.’
- b. ?Marko Polo neterpelivo top-al tri raza.
 Marco Polo impatiently stomp-PST three times

(Armoškaitė and Sherkina-Lieber 2008, p. 3, their (10) and (8))

Armoškaitė and Sherkina-Lieber also show that *-nu* cannot be used with the prefix *po-* ‘for a while,’ indicating that the meaning of the suffix is incompatible with the meaning contributed by the prefix:

- (280) a. Marko Polo neterpelivo po-top-al.
 Marco Polo impatiently PREF-stomp-PST
 ‘Marco Polo stomped impatiently for some time.’
- b. *Marko Polo neterpelivo po-top-**nu**-l.
 Marco Polo impatiently PREF-stomp-SUF-PST

(Armoškaitė and Sherkina-Lieber 2008, p. 4, their (16) and (14))

They argue that this suffix therefore encodes number rather than aspect. They claim that *-nu* is a “uniactional” marker, the verbal equivalent of singular number on nominals. They also claim that the Russian suffix *-yva* (and the corresponding Lithuanian suffix *-inė*), traditionally treated as the imperfective suffix (Comrie 1976), is a “pluractional” marker, equivalent to nominal plurality.

Armoškaitė and Sherkina-Lieber claim that previous analyses of *-nu* as an aspectual marker are incorrect: their analysis of it as number precludes the possibility of it being aspect. However, within the framework of this thesis, I have argued that lexical aspect can be expressed through quantization in the *vP* domain. In this sense, *-nu* is indeed an aspectual marker in that it encodes event quantization (i.e., Asp_Q). This reinforces the parallel between the nominal and verbal domains for which I have argued in this thesis: quantization can be a property of both nominals and events, and has a different interpretation depending on the domain in which it operates. While Armoškaitė and Sherkina-Lieber argue for the treatment of *-nu* as a number marker *instead of* an aspect marker, I maintain that there is no need to make this distinction: in the verbal domain, quantity distinctions are realized as aspectual distinctions. Armoškaitė and Sherkina-Lieber’s work therefore provides an excellent departure point for a study of Russian within the aspectual framework presented in this thesis: what different values of the quantity head Asp_Q do Russian affixes encode, and how is aspect calculated as a whole from these values and other aspectual features (e.g., Asp_A) that may be present in the *vP*?

The deeply embedded notion that Russian verb stems are lexically specified as perfective or imperfective also needs to be examined. Sherkina-Lieber (2005) and Armoškaitė and Sherkina-Lieber (2008) maintain this terminology even while arguing that Russian lacks viewpoint aspect. What does it mean for a verb stem to be categorized as perfective or imperfective? What lexical features are encoded in Russian verb stems, and how do these features interact with the aspectual features of the *vP* and the clause? There is rich ground for investigation of these questions within the theoretical proposal I have presented in this thesis.

4.3 Further questions: Stativity

The analysis I have presented here raises a number of further questions about the linguistic representation of eventuality structure. In particular, the representation of states provides a number of avenues for future research. The properties of states are a current topic of interest (e.g., Copley and Harley 2012, Copley and Roy in prep), and the questions that this thesis raises about states could potentially help to develop this area of research. In this thesis, I have noted the similarity of states and imperfectives. Recall from section 2.4.2 that Hallman (2009a) treats stativity as durationlessness, and says that stative and imperfectives are alike in that they both evaluated of moments. This is a purely semantic analysis, and I have not proposed any syntactic mechanism to capture the similarity between stative clauses and imperfective clauses. In section 3.2, we saw that the normal interpretation of Japanese activity verbs in the *-te iru* construction, which I have argued encodes stativity, mirrors the English imperfective; in other words, a Japanese clause with an activity verb in the *-te iru* form (e.g., *Tomohiro-wa yonde iru*) is rendered in English with a progressive (e.g., *Tomohiro is reading*). Should this semantic similarity correspond to a structural similarity, or are these simply two unrelated structures that happen to share a semantic property?

We saw in Chapter 1 that in English, predicates that are canonically interpreted as states, such as *be sick*, can receive an eventive interpretation if they appear with aspectual morphology, as in (4), repeated here in (281):

- (281) a. Hannah is sick.
 ≠ *Hannah is throwing up*
 b. Hannah is being sick.
 = *Hannah is throwing up*
 ≠ *Hannah is sick (i.e., she has a cold, the flu, etc.)*

The fact that a predicate that is normally interpreted as stative (as in (281a)) can appear in a form that is restricted to events (as in (281b)) suggests that in English, unlike Japanese, states are unmarked. This suggests that English predicates only become eventive with the addition of an eventive feature; in other words, English predicates are stative by default. This is what Cowper (2003, 2005) claims: she proposes that an Event feature, which does not have an overt phonological realization, appears in all clauses that denote events. Her proposal that Interval is a dependent feature of Event explains why the addition of *-ing* forces the predicate *be sick* to be interpreted as an event. However, as mentioned in section 2.4.2, Hallman's (2009a) account of English progressives contradicts this proposal: if progressives are stative, it is unexpected that the feature that encodes the progressive would require eventiveness. However, it remains intuitively true that (281b) denotes an event (i.e., a dynamic situation) in a way that (281a) does not. What, then, is the essential character of eventiveness? How can the intuitive difference between (281a) and (281b) be explained while still maintaining Hallman's definitions of stativity and eventiveness, which rely solely on *evaluation*?

These questions are broad in scope, indicating that the proposal I have presented in this thesis leaves a great deal unanswered. The consideration of these and other related questions will permit the refinement of my analysis, which will lead to a more coherent picture of the manifestation of aspect.

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