Auxiliary Selection and Telicity

Mphil thesis

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Chapter 1: Introduction

1.1. Auxiliary Selection

In this chapter I will introduce the main topics of this thesis, and give a theoretical background to these issues. As we will see, the main question is a very straight-forward, down to earth problem that can easily be understood, even by people who are not introduced to the ins and outs of modern linguistics. However, it will take us on a journey along major theoretical issues in the field including questions about case, aspect, prepositions and the organization of grammar, among others.

In this section, I will talk about the phenomenon of auxiliary selection. I will also give an introduction to leading ideas about the architecture of the grammar, the difference between *hebben* and *zijn* (the Dutch perfect auxiliaries) and a syntactic framework called First Phase Syntax.

In Dutch, as in many other languages, whenever a participial clause is used, an auxiliary verb will appear in the sentence. As is the case in some languages, Dutch presents the speaker with a choice: there are two auxiliaries that can be used. I will refer to them as HAVE and BE, for *hebben* and *zijn*. The main question of this thesis is what determines the choice of auxiliary in Dutch. Actually, the word *choice* is a bit misleading. It does matter which one is chosen, and in many cases, the wrong 'choice' will lead to ungrammaticality. Here are some examples to illustrate:

(1) a.   Jan is gevallen
            Jan BE-3sg fallen

       b.   Jan heeft gelopen
            Jan HAVE-3sg walked

       c.   Jan heeft een boek gelezen
            Jan HAVE-3sg a book read

       d.   *Jan is een boek gelezen
            Jan BE-3sg a book read

In other cases, which will be discussed extensively in this thesis, the meaning of the sentence will change in a predictional way if the auxiliary verb is changed. These cases will turn out to be very important for the analysis presented here. Let's take a look at what this change of meaning really is. A sentence like (1a) is what has been termed *telic* (Verkuyl 1972, Krifka 1989). Being telic basically means that the . We will see a more formal definition of telicity later, but for now a description will do. Going back to sentence (1a), we say that it is telic because the verb phrase is bounded. One can only fall until the ground is reached. Other clear examples of telicity are found in (2):

(2) a.   The old man died
     b.   John arrived

The pattern should be obvious: one cannot die some more after having died already. Just the same, John cannot arrive again after having arrived. He would have to leave first before he can arrive again. So in the event that the verb denotes there is an inherent endpoint. This endpoint is missing in other cases, as in (2), or the examples below:

(3) a.   Mary ran
     b.   The boys laughed

After an event of Mary running, nothing particular has to happen before the same event can happen again. This also goes for laughing boys; the sentence does not necessarily refer to an event that ended, for all you know they can still be laughing. Now what is striking, it seems that at least for intransitive verbs this property is the decisive factor in auxiliary selection. Look at the following examples:

(4) a.   De oude man is gestorven
          The old man BE-3sg died
     b.   Jan is gearriveerd
          Jan BE-3sg arrived

c.   Marie heeft gerend

         Mary HAVE-3sg run

  d.   De jongens hebben gelachen

         The boys HAVE-3pl laughed

The telic sentences all take BE as their auxiliary, while the atelic examples take HAVE. A hypothesis that would answer the question of this thesis is thus that auxiliary selection is determined by telicity. Telic sentences take BE, while atelic sentences take HAVE. I will try to defend this hypothesis although it has been much criticized. In the second chapter we will take a look at different types of sentences that have lead researchers to reject this particular kind of analysis, and I will try to show that their arguments are not strong enough. We will see different kinds of idioms that pose a possible counterexample (Everaert 1996), as well as a set of verbs that are arguably atelic but still take BE (Reinhart 2000). I will try to show that these cases are not counterexamples against the telicity-hypothesis. In the third chapter I will go deeper into a class of verbs that are traditionally labeled degree achievements, and they are part of Reinhart's set of atelic BE-verbs. It will turn out that they are not completely straight-forward in their choice of auxiliary, and moreover also not completely straightforward with respect to telicity. I will use this in the fourth and last chapter of this thesis to outline a possible implementation in a constructionalist framework (Ramchand 2006). In the next two sections of the current chapter I will motivate the choice for a framework like this, and discuss a theory on the exact relation between HAVE and BE (Kayne 1993).

1.2. The architecture of grammar

In my analysis, I will assume a particular view of the way grammar is organized. In current-day generative linguistics, two major views can be recognized, the lexicalist view and the constructionalist view. It should be noted that it is not a matter of a binary choice, and it is possible to move around on a scale from radical lexicalism to moderate lexicalism to a certain degree of constructionalism. In this thesis, I will take position on the constructionalist side, albeit moderately.

Let's see what exactly distinguishes those two views. In generative linguistics it is generally assumed that the language faculty is built up from more or less independent modules (Fodor 1973). There is a computational system, or syntax, that combines elements into sentences. These elements are taken from a lexicon, and after being processed, are sent to a phonological module. The two views concerning us have different assumptions about the division of labor between the lexicon and the syntax. The lexicalist view (Reinhart 2000, Levin and Rappaport 1996) assumes that lexical items are equipped with information about their meaning, phonology and the way they should be used in syntax. So for example, the lexical entry for the verb *break* looks similar to (2):

(5) *break*   (verb

to divide into parts violently

/breIk/

AGENT, PATIENT

…)

or: (verb

to become broken

/breIk/

PATIENT

…)

So in the lexicalist view, the verb tells the syntax what to do with it. The verb is clearly ambiguous between a transitive variant and an intransitive one. To take away the need for two lexical entries, one can adopt an operation on the transitive entry to derive the intransitive one, as for example Reinhart's reduction of the external theta role:

(6) In a verb which has a [+c]-role, this role can be deleted: $V(\theta_{1[+c]}, \theta_2) \rightarrow V(\theta_2)$.

The [+c]-role is a cause, not really an agent. Agents have a [+m] (mental state) feature as well. Since the wind can break something as well, this feature is not specified in the entry of *break*, and therefore *break* can participate in the expletive reduction operation:

(7)   *break* ([+c], [-c,-m]) → *break* [-c, -m]

By means of a set of linking rules, the arguments are merged in the correct place:

(8)   a.   John breaks the stick
      b.   The stick broke

Thus, by means of a lexical entry and an operation the transitive and intransitive variants are derived. However, Reinhart's system gets more complicated than this. More operations are needed, and moreover, the same operations can apply in the lexicon and in the syntax. This, I think, is a major drawback of the lexicalist view. The same information is represented in different places at the same time. What makes it worse, is that this is not only true for a couple of operations, but in fact, for all syntactic information that is contained in lexical items. To see why, we have to think about what happens after an item is taken from the lexicon. It will be inserted in a syntactic tree, on a node that bears the same categorical feature as the lexical item. A constructionalist like Borer (Borer 2005) claims that this is too much, and argues that the lexical item should be reduced as much as possible, ideally to a sound/meaning pair. So any information about categories, argument structure and other syntactic stuff is thrown out of the lexicon:

(9)   *break*   (to become broken
                     /breIk/)

Actually, the lexical meaning that I gave in this example is not accurate, because it is the meaning of a verb, and in the most radical constructionalist view this should be some kind of concept that results in the correct meaning of the verb *break* if the item gets merged under a verbal node. However, the freedom this creates for arguments to appear or remain absent is clearly not reflected in real language, and therefore I will take a more moderate position, and assume that there is some kind of categorical information contained in the lexical item. I will follow Ramchand (2005) in the way she builds the VP: it is divided into maximally three subevents, the

INIT (causing) subevent, the PROC (process) subevent and the RES (result state) subevent. The lexical item specifies which subevents are present, so the specification [PROCi, RESi] is added to (5). A transitive variant can be derived through the addition of the INIT-subevent. However, this is not necessarily represented in the lexicon in this case. INIT can in principle be added to any lexical item that doesn't contain it by default. So in this way, Kratzer (1994) is followed in arguing that the external argument is not a part of the verb like the internal argument is. I will talk about this approach more in chapter 4.

1.3. *Hebben* and *zijn*

One more thing that needs to be discussed in this introductory chapter concerns the relation between BE and HAVE. One of the major insights in theories of auxiliaries is that there this relationship is very direct, specifically that HAVE is actually a form of BE, differing in the presence of an incorporated (case) element. The idea goes back to Vergnaud (1974), but the proposal I will discuss here is Kayne (1993), where an empty prepositional D/P-head incorporates into BE in some cases, determined by certain properties of the participle clause.

Specifically, the auxiliary HAVE and the main verb *have* are treated parallel. Kayne bases his analysis on the work of Szabolcsi (1981), claiming that the Hungarian and English possessive constructions are essentially similar even though the Hungarian one uses *be* as a copula and the English one *have*. Apart from this, there is another difference, namely the fact that the possessor in Hungarian shows up in dative, while the English one is in nominative. Kayne proposes that English has an empty prepositional D^0 whose specifier is used by the possessor to move through. This also happens in Hungarian, as proposed by Szabolcsi. In Hungarian, this is the place where the possessor gets dative. However in English dative case is not assigned and the DP moves further up to the specifier of the copula, which demands the incorporation of the D/P^0 into BE to prevent an improper movement to take place. This movement is improper since the specifier of D/P is an A-bar position, while the specifier of BE is an A-position.

(10) $DP_{poss/i}$ BE $[_{DP} [e_i] D/P_e^0 [[e_i] [AGR^0 QP/NP]]]$

The visible result of the incorporation operation is that *be* changes into *have*. The same analysis applies to auxiliaries BE and HAVE. When the auxiliary is HAVE, the empty D/P^0 has incorporated into BE. This incorporation is determined by properties of the participle clause, for example, whether there is an AgrO or AgrS. I will follow Kayne in his idea that HAVE is derived from BE through incorporation of an element. However, the nature of this element and the reason that it appears in the first place and incorporates in BE will be different.

A different approach presented by Reinhart (2000) hypothesizes that HAVE is also an oblique form of BE, the difference being that in this case not BE but HAVE is the default auxiliary.

1.4. First Phase Syntax

The decomposition of event and argument structure that Ramchand proposes in her work (2002, 2006) will prove very useful for the problem we are dealing with. Her *First Phase Syntax* is a constructionalist system in which the projection of arguments is based on event structure. She assumes a decomposition of an event into three subevents: a causing subevent, a process subevent and a result state subevent. These subevents are represented in distinct verbal heads: INIT (initiator), PROC (process) and RES (result state). These three together make up a verb phrase, giving rise to different types of verb phrases by the option of leaving one or two subevents out, or by coïndexing two or three subevents. The underlying intuition is that an event can be seen as a path, with or without an initial state or a result state. This means that the only projection that is obligatory present in any dynamic verb is the PROC-head. A verb phrase thus looks as follows (taken from Ramchand 2006):
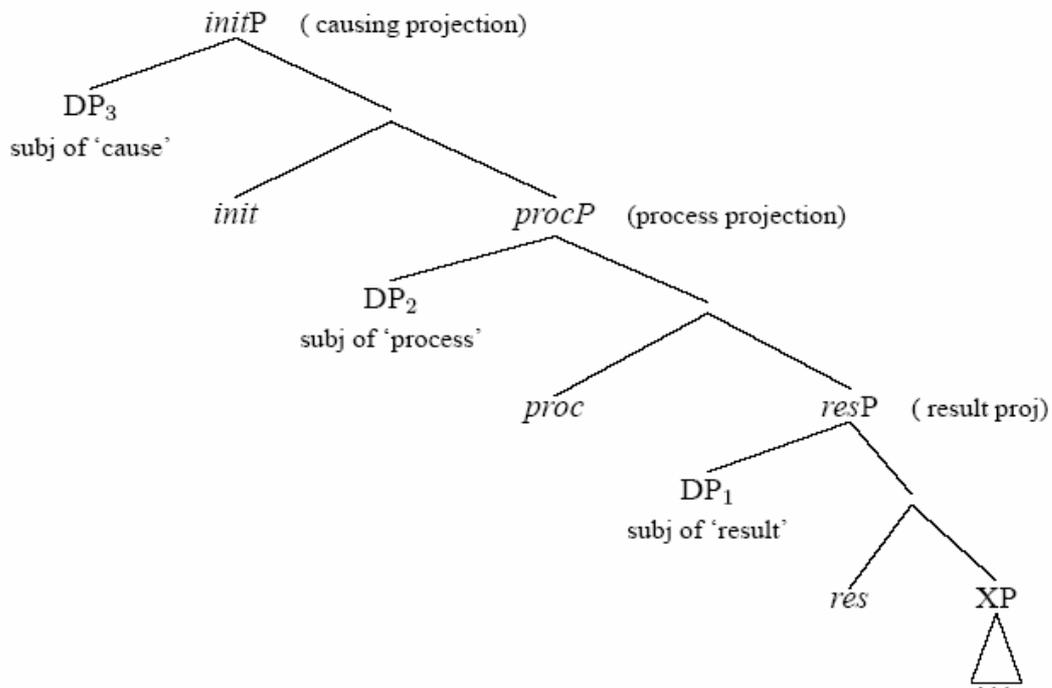
The InitP could be seen as corresponding to a more traditional *v*P, however no projection directly corresponds to the old-fashioned VP.

With this decomposed event structure, different verb classes can be derived. For instance, an unaccusative verb would correspond to an argument structure with all arguments coïndexed, and lacking an InitP, exemplified by (11):

(11) *break* [PROC$_i$, RES$_i$]

In general, verbs like this can be causativized by adding an InitP, giving rise to the transitive alternate of this class of verbs. Other verbs that are classified as unaccusative do have an InitP, like *arrive*: [INIT$_i$, PROC$_i$, RES$_i$]. This is the reason why these verbs do not have a causative alternate.

Despite the fact that this system is aspectually driven, telicity doesn't follow from one of these heads. Specifically, the RES-head does not contain a [telic]-feature, telicity may also arise via material in the complement of PROC, like a directional PP or a resultative AP:

(12) a.　　[InitP John walked [ProcP <John> [Proc <walked> to Amsterdam]]]

　　　b.　　[InitP John wiped [ProcP the table [Proc <wiped> clean]]]

Ramchand distinguishes between three classes of PPs: besides the usual distinction between Place PPs and Path PPs, she notes that Path PPs can be split up in bounded paths and unbounded paths. For example, a bounded path is *to the house*, where the endpoint is the house, while *towards the house* is an unbounded path. A bounded Path PP in the complement of Proc will result in a telic event, as in (2a). On the other hand, an unbounded PP will lead to atelicity, e.g. *John walked towards Amsterdam*. With resultatives, there is a similar thing going on. Here, the scale structure of the AP is important. If an adjective is gradable and has a closed scale, it gives rise to a bounded path, and hence a telic interpretation, as in (2b).

Ramchand also briefly discusses degree achievements (2006). The important properties she notes are the fact that they are ambiguous with respect to telicity, often deadjectival and alternate in transitivity. She attributes the first property to contextual effects, taking the atelic interpretation as the basic one. She claims that DAs can be analyzed just as motion verbs, where a directional PP in the RHEME complement of PROC induces a telic interpretation. For DAs this would mean that the complement of PROC is filled by the implicit scale denoted by the adjective from which the DA is derived. If this scale is bounded the interpretation will be telic. So in this analysis, the RES-head is not the locus of telicity, since telicity can also be brought about by elements in the rheme-complement of PROC.

Let's take a closer look at the possible classes of verbs that arise. Ramchand classifies verbs into categories according to which categorical features it has. There are four logical combinations of the three features, provided that PROC is always present, namely [INIT, PROC], [INIT, PROC, RES], [PROC, RES] and [PROC]. The first two can be further divided into transitive and intransitive cases, and even ditransitive, in the second class. [PROC, RES] and [PROC] are intransitive only. Ramchand claims that semelfactive verbs like *jump* are ambiguous between [PROC], giving the activity-reading, and [PROC, RES], giving the telic reading. Below I will follow Tungseth in arguing that this is not the case. With respect to degree achievements, Ramchand follows Hay et. al. (1999) that they are basically atelic, and can be interpreted telically if

the scale that it is associated with contains an endpoint. This results in the following verb classes (taken from Ramchand 2006):

    [INIT, PROC]

I.	Transitive	INITIATOR, UNDERGOER	*drive*, *push*
	Transitive	INITIATOR, PATH	*eat*, *read*
II.	Intransitive	INITIATOR$_i$, UNDERGOER$_i$	*run*, *dance*

    [INIT, PROC, RES]

III.	Transitive	INITIATOR, UNDERGOER$_i$, RESULTEE$_i$	*throw*, *defuse*
	Transitive	INITIATOR$_i$, UNDERGOER$_i$, RESULT-RHEME	*enter*
IV.	Intransitive	INITIATOR$_i$, UNDERGOER$_i$, RESULTEE$_i$ *arrive*	
V.	Ditransitive	INITIATOR, UNDERGOER PATHPP	*give*

    PROC

VI.	Intransitive	UNDERGOER	*melt*, *dry*

    PROC, RES

VII.	Intransitive	UNDERGOER$_i$, RESULTEE$_i$	*break*

The next section will try to show that, along the lines of Tungseth (2006), semelfactive verbs and degree achievements can in fact be analysed in a parallel way. This way, I will be able to give an explanation for the data from chapter 2 and try to sketch how this could interact with auxiliary selection.

1.5. Overview of this Thesis

The next chapter of this thesis will be devoted to arguments that people have come up with against the involvement of aspectual properties in auxiliary selection. I will show that while these arguments do point out something important, there is something that can be said for each of them and the conclusion that is drawn from them is too drastic. From this discussion, we will see that a specific group of verbs pose a problem for an aspectual theory, namely degree achievements. This verb class will be the focus of a big part of the third chapter, where I will take a closer look into the properties of these verbs, and some related verb classes. From the data I will distil a one way

implication that I will try to defend throughout this thesis, concerning the relation between auxiliary selection and telicity. I will claim that a telic context requires the auxiliary to be BE rather than HAVE, while atelic contexts go with both options. However, one set of verbs, a subset of semelfactives, turns out to be apparent counterexamples to this implication. Another subset of semelfactives does behave as the implication predicts. I will try to argue that this may be due to a transitivity effect caused by different properties of the cognate object of the two different groups. Once it is plausible that this is the case, I will pursue an analysis in chapter four. There, I will show that an analysis based on internal properties of the participle cannot be correct, since there is no correlation between the presence or absence of certain layers of verbal structure like PROC or RES and telicity, or between these layers and the choice of auxiliary. This argument will be based around the structure of stative participles as proposed by Kratzer (2000) and Taraldsen and Medová (2006). The last sections of this thesis will be dedicated to outlinging a possible approach to the data at hand, which I will base on ideas from Tungseth (2006), Kayne (1993) and Ramchand's framework as outlined above. The data that are presented in this thesis give support to a one way implication about the correlation between auxiliary selection and telicity: if the auxiliary is HAVE, an atelic meaning is present. This will lead to the suggestion that for the verbs at hand which show ambiguity with respect to telicity, atelic meanings are derived from telic ones through the application of an operation called S-summing, which concatenates telic events in such a way that they become atelic. This operation is performed by an aspectual head that causes the auxiliary to spell out HAVE rather than BE. Aside from that, there must be another way to derive atelic meanings, higher in the structure, since BE can have an atelic interpretation as well.

Chapter 2: A Connection with Telicity?

2.1. Introduction

A controversial idea within linguistic theory is that there is a connection with the property of telicity and auxiliary selection. This has been proposed by for example Kratzer (2004), while Everaert (1996) and Reinhart (2000) argue against it. I will discuss the arguments against an aspectual approach first, suggesting that they could be overcome. Then I will discuss proposals by Kratzer and Kiparsky that create a link between case and aspect. We will see that in Finnish, it matters whether an object has accusative or partitive case. According to Kratzer, accusative case is the same as a feature [telic], while Kiparsky proposes that partitive case has the function of marking the unboundedness of the VP.

Let's have a look at what exactly is meant by a connection between auxiliary selection and telicity. In the table below I present two sets of verbs. The first set consists of verbs that are undoubtedly unaccusative, which I show by using some diagnostics for unaccusativity, namely auxiliary selection, Burzio (1986) and the prenominal participle test, Levin & Rappaport (1995). Auxiliary selection is taken to be a diagnostic for unaccusativity in Dutch and Italian, among others, though if it was clear why this is so then this thesis would probably be obsolete. Verbs that take BE as auxiliary are unaccusative, while verbs that take HAVE are unergative. Furthermore, verbs that can form a prenominal participle are unaccusative, while verbs that can't are unergative. A simplified explanation for this is that this has to do with the status of the argument of the verb: the prenominal passive wants a patient, an internal argument, while unergative verbs only have an external argument to offer. In the second set there are those verbs that are clearly unergative, which I also show with the diagnostics.

Unaccusative	*auxiliary test*	*prenominal participle test*
vallen	hij is gevallen	de gevallen jongen
to fall	He BE-3sg fallen	the fallen boy
sterven	hij is gestorven	de gestorven man
to die	he BE-3sg died	the died man
breken	de fles is gebroken	de gebroken fles

to break	the bottle BE-3sg broken	the broken bottle
arriveren	Jan is gearriveerd	de gearriveerde jongen
to arrive	Jan BE-3sg arrived	the arrived boy
gaan	hij is gegaan	*de gegane jongen
to go	he BE-3sg gone	the gone boy
smelten	het ijs is gesmolten	het gesmolten ijs
to melt	the ice BE-3sg melted	the melted ice
openen	de deur is geopend	de geopende deur
to open	the door BE-3sg opened	the opened door
ontsnappen	de dief is ontsnapt	de ontsnapte dief
to escape	the thief BE-3sg escaped	the escaped thief
zinken	de boot is gezonken	de gezonken boot
to sink	the boat BE-3sg sunk	the sunk boat
koken	het water is gekookt	het gekookte water
to boil	the water BE-3sg boiled	the boiled water

Table 1: Unaccusative verbs

Unergative verb	*auxiliary test*	*prenominal participle test*
lopen	de jongen heeft gelopen	*de gelopen jongen
to walk	the boy HAVE-3sg walked	the walked boy
dansen	de jongen heeft gedanst	*de gedanste jongen
to dance	the boy HAVE-3sg danced	the danced boy
lachen	de jongen heeft gelachen	*de gelachen jongen
to laugh	the boy HAVE-3sg laughed	the laughed boy
gloeien	de lamp heeft gegloeid	*de gegloeide lamp
to glow	the lamp HAVE-3sg glowed	the glowed lamp
niezen	de jongen heeft geniest	*de genieste jongen
to sneeze	the boy HAVE-3sg sneezed	the sneezed boy
schreeuwen	de jongen heeft geschreeuwd	*de geschreeuwde jongen
to yell	the boy HAVE-3sg yelled	the yelled boy
praten	Jan heeft gepraat	*de geprate jongen

to talk	Jan HAVE-3sg talked	the talked boy
telefoneren	het meisje heeft getelefoneerd	*het getelefoneerde meisje
to phone	the girl HAVE-3sg phoned	the phoned girl
werken	de jongen heeft gewerkt	*de gewerkte jongen
to work	the boy HAVE-3sg worked	the worked boy
blaffen	de hond heeft geblaft	*de geblafte hond
to bark	the dog HAVE-3sg barked	the barked dog

Table 2: Unergative verbs

We see that for the unaccusatives, it is clear that they take BE as an auxiliary and allow the verb to appear in a prenominal participle construction. For the unergatives it is the other way around, they take HAVE as the auxiliary and do not allow a prenominal participle. I will use two more diagnostics on those verbs later in this chapter, which will turn out to give less clear results.

Let's turn to telicity. What exactly is it? Different definitions of telicity can be found in the literature, all expressing the same intuition but there is an important thing to note: telicity should be a property of the description of the event, not of the event itself. The intuition that gives rise to this confusion is that it is the event that has to reach a certain intrinsic endpoint. However, any event will probably reach an endpoint sooner or later. Thus, it is not the event that we want to talk about, but rather the description: is the endpoint included in the verb phrase or not? In better words, is the verb phrase bounded or not? Consider a verb like *to die*. A clear natural endpoint is reached as soon as a person has died. Once the event has taken place, it cannot continue, the event is over forever. However, if we talk about it this way it looks as though we take the event to be telic, rather than the description. To put it differently, there is no subevent of *to die* that also counts as an event of *to die*. In contrast, for a clearly atelic verb like *glow*, if a lamp glows for a certain period of time, then that lamp has also glowed for any subinterval of that period.

A more formal definition is given by Krifka (1998), who says that telicity is 'the property of an event predicate X that applies to events e such that all parts of e that fall under X are initial and final parts of e.' In a formal definition this looks as follows:

(1)   **Telicity**: $\forall X \subseteq U_E[\ TEL_E(X) \leftrightarrow \forall e,e' \in U_E\ [\ X(e) \wedge X(e') \wedge e' \leq_E e \rightarrow INI_E\ (e',\ e) \wedge FIN_E\ (e',\ e)]]$

This means that in order for any predicate X to be telic, any two events e and e′, for which X is true and e′ is a subpart of e, share their starting and ending points. So no event e′ can be a proper part of e and still share the same predicate. In the set of verbs above, the unaccusative verbs force a telic interpretation. Subevents of breaking are all initial and final parts of the breaking event. No subevent of breaking is an event of breaking itself. The same goes for an event of Jan arriving somewhere. He would first have to leave before he can arrive again. It is a certain change that first will have to be undone before it can happen again. Later on we will see that this property is relevant in relation to degree achievements. For the unergative verbs, a different kind of interpretation arises. All the actions that the verbs refer to can stop at some point, and continue from the point where it stopped at any given time. Furthermore, if John walked for five minutes, what happened during the first minute was John walking, just as in the second minute and the third and so on. So for these cases subevents of an event for which the predicate X is true, X is also true.

The claim that there is a direct relation between unaccusativity or auxiliary selection and telicity is not commonly accepted. I will discuss two sets of arguments against this hypothesis, and try to show that they don't have to form a real problem. I start with an argument based on idioms from Everaert (1996), and then discuss Reinhart (2000), about a set of verbs that seem to be unaccusative and atelic. On a closer look it turns out that they show ambiguous behavior with respect to both unaccusativity and telicity, which might be even easier to explain with a theory of auxiliary selection based on telicity.

2.2. Everaert: The case of auxiliary selection in idioms

In Everaert (1996), a number of arguments against an aspect-based analysis of auxiliary selection are presented. The first one involves the following pairs of sentences:

(2) a.   De kleur is haar niet bevallen
           the color BE-3sg her-DAT not please
    b.   De kleur heeft haar niet aangestaan
           the color HAVE-3sg her-DAT not please

(3) a. Het is in Amsterdam gebeurd

        it BE-3sg in Amsterdam happened

    b. Het heeft in Amsterdam plaats gevonden

        it HAVE-3sg in Amsterdam place found

(4) a. De brug is bezweken onder de druk van de auto's

        the bridge BE-3sg collapsed under the pressure of the cars

    b. De brug heeft het begeven onder de druk van de auto's

        the bridge HAVE-3sg it collapsed under the pressure of the cars

In all these pairs the same event is described. Despite that, a different auxiliary is used. The verbs don't have exactly the same meaning but the difference cannot be stated in terms of a telic/atelic distinction. However, if we take a look at the third pair of sentences, we see that the second sentence has an object, *het*, and should thus be seen as a transitive. Therefore, the selection of HAVE doesn't come as a surprise. The same goes for the third pair. The BE-example of this pair is intransitive, while the other one is transitive and consequently takes HAVE. For the first sentence-pair this reasoning doesn't apply, since there is no sign of an object in the HAVE-sentence. Still one might argue that while the two sentences refer to the same event, and this event will probably end at some point, the two different verbs that are used might still be different with respect to telicity. As we saw above, telicity is not about the event that is described but about the description that is used in order to do that. In view of this, it might be the case that two sentences that describe the same event differ with respect to telicity.

2.2.1. Idioms

In a certain set of Dutch idioms with basically the same meaning, we find differences in auxiliary selection. For Everaert, this is another argument against a relation between auxiliaries and telicity. The idioms all have the meaning of 'to die', so in principle they are all telic.

(5) a. Zij *is* de pijp uitgegaan

        she BE-3sg the pipe out-gone

b.   Zij *is* het hoekje omgegaan

       she BE-3sg the corner round-gone

c.   Zij *is* aan haar einde gekomen

       she BE-3sg on her end come

(6) a.   Hij *heeft* de geest gegeven

       he HAVE-3sg the ghost given

b.   Zij *heeft* de kraaienmars geblazen

       she HAVE-3sg the crow-march blown

c.   Hij *heeft* het leven gelaten

       he HAVE-3sg the life let

Everaert claims that 'these examples indicate that auxiliary selection in idioms is determined by the verb contained in that idiom. Whatever the meaning of the idiom might be, the verb retains the selection features of its non-idiomatic use.' I think that this is true. Those examples with BE are derived from unaccusative verbs, and have PP-complements. Since they retained their selection features they use BE. The idioms with HAVE on the other hand are all derived from transitive verbs, and are still transitive: they have a DP-complement. It is therefore not a surprise that HAVE is used, since HAVE is used with almost all transitive verbs. So it seems that the verbs in idioms are used in the same way as they are in non-idiomatic uses of the same verb, which are exemplified below:

(7) a.   Ze is uitgegaan

       she BE-3sg out-gone

b.   De boot is omgegaan

       the boat BE-3sg round-gone

c.   Ze is gekomen

       she BE-3sg come

(8) a. Hij heeft het haar gegeven

he HAVE-3sg it her-DAT given

b. Hij heeft een wals geblazen

he HAVE-3sg a waltz blown

c. Hij heeft een boer gelaten

he HAVE-3sg a burp let

One might object that the idioms under discussion here are exactly those that are not classified as idiomatic combining expressions, but as idiomatic phrases. Nunberg et al. (1994) argue that in idioms like this the idiomatic interpretation does not follow from the composition of the meaning of its parts, and hence should not be treated as compositional in the way I am doing. They recognize to types of idioms, namely idiomatically combining expressions and idiomatic phrases. An example of the first type is *spill the beans*, meaning 'to disclose a secret', and it is crucial about it that the meaning of the idiom can be built up compositionally from the meaning of the parts, just like the literal meaning. So in this case *the beans* represent some kind of secret and *spill* adds the meaning that this information somehow got in the wrong hands. Nunberg et al. argue that idiomatic phrases are different in that the meaning of the idiom cannot be distributed over its parts. However although the meanings of *kick*, *the* and *bucket* do not transparently contribute to the meaning of the idiom *kick the bucket*, it has been suggested in the literature (e.g. Gibbs 1995) that in processing, 'people normally attempt to do some compositional analysis when understanding all types of idiomatic phrases'. This suggestion is based on reading-time studies that showed that people take significantly more time to process idioms like *kick the bucket* than idioms that are easier to analyze, like *spill the beans*, where the meaning of the parts do contribute to the meaning of the whole idiom. This could indicate that *kick the bucket* is also analyzed as a transitive first, and then gets an idiomatic meaning. The first analysis however makes the sentence transitive enough for auxiliary selection not to take place anymore. Furthermore, although it is true that idioms like *kick the bucket* are less analyzable than *spill the beans*, at some point it must have started out as a compositional phrase although the etymology of that phrase may have been forgotten.

2.2.2. Polysemy

Consider the following examples:

(9) a.   Hij is (*de hele dag) in het zwembad gedoken

           he BE-3sg (*the whole day) in the swimming pool dived

      b.   Hij is (de hele dag) in het onderwerp gedoken

           he BE-3sg the whole day in the subject dived

(10) a.   Ik ben (*de hele dag) op dezelfde rots gestoten

           I BE-1sg (*the whole day) on the same rock bumped

      b.   Ik ben (de hele dag) op een probleem gestoten

           I BE-1sg the whole day on a problem bumped

The intuitions are Everaert's. The (a)-examples are the basic meanings of the verbs, and they are telic. Everaert's claim is that the (b) examples are atelic, and that despite this they still choose BE. To me, these examples are all telic. You cannot say the (b)-examples unless you leave out the *de hele dag* part, or, but that's less favored, interpret the sentences as iterative. There's no clear difference with the (a)-examples with respect to that. Since this counterargument depends on intuitions of Dutch sentences, I have checked them with ten native speakers of Standard Dutch, from the area around Utrecht and Apeldoorn (centre part of the Netherlands), so these intuitions are not just my own. The answers that informants gave in response to these sentences and the sentences that will follow are shown in the tables below. As becomes clear from the table, when presented with the sentences including the durative adverbial phrase, informants find the (b)-sentences only slightly better than the (a)-sentences, if at all. For most informants the iterative reading is the only reading they can have. I think this result indicates that an atelic reading for the (b)-sentences is out or highly dispreferred, which means that the choice of auxiliary BE is not surprising anymore, from the perspective of an aspectual approach. The table shows the number of informants that allow an atelic interpretation, an iterative one, then the number of people that were willing to accept the iterative reading when presented with it and finally the number of people who where unwilling to do so and ruled out the sentence completely.

	atelic	iterative	*/iterative	*
Hij is de hele dag in het zwembad gedoken	0	4	3	3
Hij is de hele dag in het onderwerp gedoken	1	1	3	5
Ik ben de hele dag op dezelfde rots gestoten	0	3	3	4
Ik ben de hele dag op een probleem gestoten	0	3	1	6

Table 3

2.2.3. Intrinsic reflexive verbs

Monadic reflexive verbs behave unexpectedly under an aspectual theory:

(11) a.   Er hat sich geirrt

        He HAVE-3sg SE mistaken

    b.   Er hat sich geschämt

        he HAVE-3sg SE ashamed

Monadic reflexive verbs can be either telic or atelic, but always choose HAVE. However, this can be something related to reflexivity. For example, Alencar and Kelling (2005) argue that reflexive sentences behave like they are transitive, which would explain the choice of HAVE. However, as they note as well, Italian always has BE with reflexives, which leads them to say that transitivity cannot be predicted by the choice of auxiliary. This matter is too complicated to discuss thoroughly in this thesis, so I leave it at this tentative suggestion.

2.3. Reinhart

2.3.1. Unaccusative states?

In Reinhart (2000), another argument not to link unaccusativity to aspectual properties of the verb is brought up: she claims that in the class of unaccusatives you can find both states and events. This is exemplified by the following set of verbs:

Events: *freeze*, *melt*, *blush*, *wither*, *wrinkle*, *open*, *break*, *drown*, *die*, *arrive*, *fall*

States: *grow*, *develop*, *increase*, *blur*, *worsen*, *move*, *drift*, *slide*, *spin*, *swing*

Now, for the eventive verbs it is clear that they are unaccusative, but for the stative ones it is not so clear. Reinhart notes that these verbs are tested for unaccusativity in Dutch. On the basis of my own intuitions and the intuition of ten others (mostly the same informants as above), I would like to argue that a subset of these verbs actually consists of unergatives. The judgments of informants are presented in appendix A. I will run a couple of unaccusativity diagnostics, namely the auxiliary selection test (Burzio (1986)), the prenominal participle test (Levin & Rappaport (1995)), the impersonal passive test (Perlmutter 1978) and the resultative test (L&R (1995)). The first two were also used in the introduction of this chapter. Impersonal passives can be formed of unergative verbs, not of unaccusatives. This has to do with the expletive that is used. Expletives like *there* or *er* need an associate that somehow licenses it. This associate must be the external argument, which means that if there is no external argument the expletive is not licensed. Finally, adding a resultative adjunct should be allowed if there is an internal argument, since it is this argument that the result modifies. I have used the following translations for the verbs:

grow	groeien	*drift*	drijven
develop	ontwikkelen	*slide*	glijden
increase	toenemen	*spin*	spinnen
blur	vervagen		cirkelen
worsen	verslechteren	*swing*	zwaaien
move	bewegen		

Table 4: Dutch translations of English DAs

For the verb *spin* I used two translations, they both have aspects of the meaning of English *spin*, but in some situations *cirkelen* is better and for other situations *spinnen* is used.

The test results are shown in the table below:

Prenominal participle	Result	Auxiliary selection	Result
de gegroeide jongen	unacc	de jongen is gegroeid	unacc
the grown boy		the boy BE grown	
de ontwikkelde jongen	unacc	de jongen is ontwikkeld	unacc
the developed boy		the boy BE developed	
de toegenomen tegenzin	unacc	de tegenzin is toegenomen	unacc
the increased aversion		the BE increased	
de vervaagde grens	unacc	de grens is/?heeft vervaagd	unacc
the blurred border		the border BE blurred	
de verslechterde toestand	unacc	de toestand is/?heeft	unacc
the worsened situation		verslechterd	
		the situation BE worsened	
de bewogen tafel	unacc	de tafel is/heeft bewogen	unacc
the moved table		the table BE/HAVE moved	

Table 5:Unaccusativity diagnostics

Resultative construction	Result	Impersonal passive	Result
*de jongen groeide groot	unerg	?er werd hard gegroeid	unacc
'the boy grew big'		'there was grown huge'	
*de jongen ontwikkelde slim	unerg	?er werd flink ontwikkeld	unacc
'the boy developed smart'		'there was developed	
		much'	
*de tegenzin nam hoog toe	unerg	*er werd erg toegenomen	unacc
'the aversion increased high'		'there was increased	
		much'	
*de grens vervaagde weg	unerg	*er werd erg vervaagd	unacc
'the border blurred gone'		'there was blurred much'	
*de situatie verslechterde	unerg	?*er werd flink	unacc
vervelend		verslechterd	

'the situation worsened nasty'		'there was worsened a lot'	
?*de tafel bewoog kapot	unerg	er werd snel bewogen	unerg
'the table moved broken'		'there was moved fast'	

Table 6:Unaccusativity diagnostics (2)

These verbs seem to pass the tests for unaccusativity. The first two tests are without a doubt straightforward. The impersonal passive test, with the exception of *bewegen*/ *move*, gives the same results. The only problematic test is the one with resultative constructions. In principle, unaccusatives should be able to appear in a resultative construction as for example in:

(12) The bottle broke into pieces

However, most of these verbs don't allow this. The sentence *de jongen groeide groot* sounds really bad, although it could be uttered by a young child. That same child would on the other hand never say any of the other sentences, they are just plainly ungrammatical. It is unclear what exactly is going on with the resultative test, it is clear that it is sensitive to other factors than the other three tests, as discussed in for example Wechsler (2005). For now, I will assume that this set of verbs is unaccusative, but they will be the topic of discussion in chapter three.

Turning to the second group of verbs, the results are less clear:

Prenominal participle	Result	Auxiliary selection	Result
*?de gedreven boot	unerg	de boot heeft/is gedreven	unerg
the drifted boat		the boat HAVE/BE drifted	
*?de gegleden jongen	unerg	de jongen heeft/is gegleden	unerg
the slided boy		the boy HAVE/be slided	
de gespinde auto	unacc	de auto heeft/is gespind	unerg
the spinned car		the car HAVE/BE spinned	
*?de gecirkelde boot	unerg	de boot heeft/is gecirkeld	unerg
the spinned boat		the boat HAVE/BE spinned	
?de gezwaaide schommel	?unerg	de schommel heeft/is gezwaaid	unerg

the swung swing		the swing HAVE/BE swung

Table 7: Unaccusativity diagnostics (3)

Resultative construction	Result	Impersonal passive	Result
*de boot dreef lek	unerg	?er werd flink gedreven	?unerg
'the boat drifted a leak'		'there was drifted a lot'	
*de jongen gleed bont en blauw	unerg	er werd hard gegleden	unerg
'the boy slided		'there was slided fast'	
*de auto spinde total loss	unerg	er werd flink gespind	unerg
'the car spinned total loss'		'there was spinned much'	
*de boot cirkelde lek	unerg	er werd hard gecirkeld	unerg
'the boat spinned leak'		'there was spinned fast'	
de schommel zwaaide kapot	unacc	er werd heen en weer gezwaaid	unerg
'the swing swinged broken'		'there was swung back and forth'	

Table 8: Unaccusativity diagnostics (4)

These verbs all seem to be ambiguous in the tests. The NPs with a prenominal participle are all out except under a strictly telic interpretation. Further, in the auxiliary selection test they choose HAVE in case of an atelic interpretation and BE in case of a telic interpretation. The resultative constructions are all unacceptable, except for the one with *zwaaien*/*swing*. Finally, the impersonal passives are all pretty acceptable.

These facts seem to point into the direction of an aspectual approach. Note that these verbs are all verbs of manner of motion. In fact, the idea that these verbs are unergative or at least show ambiguous behavior to diagnostics is not new but is already noted in Perlmutter (1978).

For the other verbs that did pass the tests, some things can be said as well. It is known that verbs like *grow* and *increase* can be classified as degree achievements, and that those degree achievements show variable behavior with respect to telicity. This is the topic of the next subsection, as well as the next chapter.

2.3.2. Degree Achievements

According to Hay et al. (1999), degree achievements display aspectual inconsistency, so they are ambiguous between telic and atelic. Let's see if this is true for the remaining verbs. I will use four tests, which are claimed to show telicity, namely entailment by the progressive form, modification with durative adverbs and modification with *almost*. These tests are taken from Hay et al. (1999). The last test is taken from Tungseth (2006) and concerns the modifier *weer* (*again*).

2.3.2.1. Entailment by progressive form

Atelic predicates are entailed by their progressive forms.

(13) a. Kim is aan het groeien   ?→ Kim is gegroeid
        Kim is growing   → Kim has grown

     b. Jan is *(zich) aan het ontwikkelen   → Jan is ontwikkeld
        Jan is developing   → Jan has developed

     c. De prijs is aan het toenemen   → De prijs is toegenomen
        the price is increasing   → the price has increased

     d. De grens is aan het vervagen   → De grens is vervaagd
        the border is blurring   → the border has blurred

     e. De situatie is aan het verslechteren → De situatie is verslechterd
        the situation is worsening   → the situation has worsened

     f. De auto is aan het bewegen   ?→ De auto is bewogen
        the car is moving   → the car has moved

In this test, most of the predicates are clearly entailed by their progressive form, so they seem to be atelic, as expected for states. For *grow* and *move* it is difficult, the entailment is not so clear. It would however be a lot more clear if the auxiliary was HAVE instead of BE. So the sentence *Kim is aan het groeien* does entail clearly that *Kim heeft gegroeid*, rather than *Kim is gegroeid*. The same goes for *bewegen* and to a lesser extent *toenemen*.

2.3.2.2. For/In-adverbials

Telic sentences can be modified with a PP headed by the P *in*, while atelic sentences can be modified with a *for*-PP. Here are the results for our verbs:

(14) a.   Hun populariteit groeide drie jaar lang / in een maand

        their popularity grew for three years / in a month

     b   Het plan ontwikkelde *(zich) drie jaar lang / in drie jaar

        the plan developed for three years / in three months

     c.   De olieprijs steeg drie jaar lang / ?in drie jaar

        the oil-price increased for three years / in three months

     d.   De grenzen vervaagden drie jaar lang / in drie jaar

        the borders blurred for three years / in a month

     e.   De situatie verslechterde drie jaar lang / in een maand

        the situation worsened for three years / in a month

     f.   De auto bewoog drie dagen lang / ?in een minuut

        the car moved for three days / ?in a minute

So there is ambiguous behaviour with all verbs, they allow both kinds of PPs, although in some cases the *in*-PP is marginally acceptable, so it is harder to get a telic interpretation for those than the others.

2.3.2.3. *Almost* modification

Modification with the adverb *almost* is the last test. It is claimed that telic sentences modified with *almost* are ambiguous between an interpretation in which the event almost occurred and an interpretation in which the event is occurring and almost complete. On the other hand, atelic sentences can only have the first interpretation.

(15) a.   John almost ran to the park   ambiguous

     b.   John almost ran in the park   unambiguous

For our group of verbs the results are as follows:

(16) a.   De populariteit van de band groeide bijna   unambiguous

the popularity of the band almost grew

b.   Het plan ontwikkelde *(zich) bijna   ambiguous

the plan almost developed

c.   De prijs steeg bijna   unambiguous

the price almost increased

d.   De grens vervaagde bijna   ambiguous

the border almost blurred

e.   De situatie verslechterde bijna   ambiguous

the situation almost worsened

f.   De auto bewoog bijna   unambiguous

the car almost moved

The result shows that some of the verbs can have a telic interpretation, while for others this interpretation seems to be absent. Its presence is clearest in (16d-e), the predicates that are used apparently allow the interpretation where the situation almost worsened completely and the border almost blurred completely. For all informants it is clear that they allow this interpretation for *grow*, *increase* and *move*.

2.3.2.4. *Again* modification

The last test is taken from Tungseth (2006) and concerns modification with the adverb *weer*, meaning *again*. Tungseth argues that two different readings are possible with this adverb, a repetitive one and a restitutive one. The repetitive one is present in (17a), while both readings are present in (17b):

(17) a.   John walked again

b.   John walked home again

The repetitive reading is easy to get: the event under discussion gets repeated. In the restitutive reading the adverb modifies the result state, in this case *home*, so the reading is that John returned home after having been away, without the need to ever have walked home before. According to Beck & Johnson (2004), in the first reading *again* is adjoined to the highest projection of the verb, and in the other case to the result state. The degree achievement verbs sometimes allow both interpretations, meaning that they can either have a result state or lack one, so they can be both telic or atelic:

(18) a.   De economie groeide weer   ambiguous
            the economy grew again

       b.   De jongen ontwikkelde zich weer   rep. only
            the boy developed SE again

       c.   De voedselprijzen stegen weer   rep. only
            the foodprices rised again

       d.   De herinnering aan de vakantie vervaagde weer   ambiguous
            the memory of the holiday blurred again

       e.   De situatie verslechterde weer   ambiguous
            the situation worsened again

       f.   De auto bewoog weer   rep. only
            the car moved again

2.3.2.5. *Completely*-modification

Hay et al. (1999) show that the adjective from which a degree achievement is derived determines whether the verb shows telic or atelic behavior. If the adjective is bounded, then the verb will be telic. If not, the verb is atelic. Not all of our degree achievements are deadjectival, but we can still run a test that determines whether the scale is bounded: if the sentence is grammatical with the modifier *completely* then the scale is bounded and it is expected to be telic:

(19) a.   De boom is helemaal gegroeid
            the tree BE-3sg completely grown

b.   Het programma is helemaal ontwikkeld

the program BE-3sg completely developed

c.   *De armoede is helemaal toegenomen

poverty BE-3sg completely increased

d.   De grens is helemaal vervaagd

the boarder BE-3sg completely blurred

e.   De situatie is helemaal verslechterd

the situation BE-3sg completely worsened

f.   De auto is helemaal bewogen

the car completely moved

As becomes clear from this test, the deadjectival verbs (*vervagen* and *verslechteren*) clearly have an upper bound on their scale. The results of this test indicate that most of our verbs are telic, however it should be stressed that they also allow an atelic interpretation. The test with *completely* will be discussed more extensively in the next chapter.

2.3.2.6. Results

To have a clear overview of the results of these tests, look at the following table:

	entailment	in/for PP	almost	again	completely
grow	ambiguous	ambiguous	atelic	ambiguous	ambiguous
develop	atelic	ambiguous	ambiguous	atelic	ambiguous
increase	atelic	ambiguous	atelic	atelic	atelic
blur	atelic	ambiguous	ambiguous	ambiguous	ambiguous
worsen	atelic	ambiguous	ambiguous	ambiguous	ambiguous
move	ambiguous	ambiguous	atelic	atelic	ambiguous

Table 9

2.4. An aspectual theory?

So the tests show us that we can split the set of verbs in two groups. There is a set of verbs traditionally classified as unaccusative, which at least for Dutch seems to fail unaccusativity

diagnostics. The other set of verbs are usually labeled degree achievements and are problematic with respect to aspectual classification. From the presented data I will draw the following conclusions:

(20) a.　　Opponents of an aspectual analysis of auxiliary selection are right in that aspect is not the crucial determining factor.

　　　b.　　Still aspect seems to be of some influence, and should be taken into account.

This might raise the hypothesis that the set of unaccusative verbs is not the same for all languages. In fact, I would like to argue that the determining factors for unaccusativity may be different across languages, and that at least for Dutch, aspectual factors are involved. From this perspective, it is interesting to note that some linguists (Cocchi (1996), Mahajan (1998)) have tried to connect auxiliary selection to split ergativity, which is also a phenomenon that is related to different linguistic features across languages, for example to person features in Dyirbal (Dixon (1994) and arguably Abruzzese Italian (Cocchi (1996)), or to perfectivity in Hindi (Mahajan (1998)).

　　I would like to argue that the fact that the set of degree achievements show variable behavior with respect to telicity indicates that they are not suitable to use in an argument against an aspectual theory of unaccusativity, simply because they don't show that unaccusatives can be states or events, since it is clear that it is hard to classify them as either of them. However, things will be better, since although the data seems pretty inconsistent with an aspectual theory as well, I will try to show in the next and the fourth chapter that it might be possible to bring all the bits and pieces together into a coherent story about auxiliary selection that takes telicity to be involved, though there are other factors that play a role.

2.5. Conclusion

In this chapter, we have seen that a theory of auxiliary selection based on telicity runs into some apparent problems. I showed that the situation is not hopeless: it is possible to explain these issues in such a way that they don't have to pose a threat. Therefore, we don't have to fully reject aspect as a factor in a theory of auxiliary selection. Still the data don't support a theory in which

aspect is the only crucial factor. Especially the group of verbs called degree achievements is problematic in their aspectual behavior and their choice of auxiliary. We have seen that they behave ambiguously with respect to telicity in some tests, while strictly atelic in others. Furthermore, though degree achievements with HAVE are attested, they are less common than with BE, and less generally accepted. If aspect was the crucial factor, we would expect that degree achievements with HAVE are atelic while telic if they take BE. This correlation is not found and this leaves us puzzled: how can aspect play a role in some cases while it is irrelevant in others? I will try to make sense of this outcome in the following chapters.

Chapter 3: Degree Achievements

3.1. Introduction

As we have seen in the previous chapter, there is a class of verbs called degree achievements that pose a challenge for a theory of auxiliary selection based on the notion of telicity. However, I have been able to show that the problems may be overcome. As became clear there, this class of verbs behaves ambiguously with respect to the known tests that are used to show telicity, and this is not directly reflected in their choice of auxiliary. More specifically, auxiliary selection seems to be restricted to BE in a lot of cases.

In this chapter I will go a step further then in the previous chapter, where I only dealt with negative arguments, and try to show that degree achievements might actually be used to construct an argument in favor of an aspectual theory, despite the inconsistent and often puzzling data. First, I will discuss relevant literature on degree achievements, like Hay et al. (1999), who argue for the use of scalar structures. Then, in section 3.3 I will discuss examples of degree achievements that do allow HAVE as auxiliary, and a number of relevant sets of verbs, which show aspectually ambiguous behaviour just like degree achievements, like semelfactives and verbs of directed motion. These verbs are particularly interesting since here the variable aspect strictly correlates with the choice of auxiliary, unlike degree achievements. From the discussion of these verbs I will distil a one way implication on the relation between auxiliary selection and telicity.

In the last section of this chapter I will look into a paper that is relevant for us here by Rotstein and Winter (2004). They deeply discuss the semantics of adjectives, and specifically the distinction between total and partial adjectives. This distinction is then linked to data concerning modification with certain adverbs, and I will go deeper into the test with *completely*, which is one of those adverbs. This will show some correlations with respect to aspect and auxiliary selection. Section 3.5 will summarize all the results from this chapter.

3.2. Hay, Kennedy and Levin

Hay et al. (1999) approach degree achievements from the perspective of scalar structures, to be able to deal with the ambiguous behavior with respect to telicity. They argue that degree achievements (DAs) can be analyzed in the same way as verbs with incremental themes, which show the same ambiguity in telicity:

(1) a. Pat is eating a plum $-/\rightarrow$ Pat has eaten a plum

     b. Pat is eating rice $\rightarrow$ Pat has eaten rice

With these verbs, it depends on the theme whether or not the verb phrase is telic. If the theme is quantized, the result is telic, if it is not quantized, the result is atelic. An expression is quantized if there is no subpart of its denotation that would count as an instance of that expression. Basically for nouns this equals the distinction between mass and count nouns. A formal definition from Krifka (1998) is given in (2):

(2) $\forall X \subseteq U_P [QUA_P(X) \leftrightarrow \forall x,y[X(x) \wedge X(y) \rightarrow \neg y <_p x]]$

What it says is that a predicate X is quantized if and only if for any *x* and *y* that fall under the predicate X, *x* and *y* do not have a proper part relation. Scalar structures are used to explain this variable behavior, in a way that I will make clear in this section.

For the analysis, it is important to note a semantic property that DAs all have in common: they denote a change in some property of one of their arguments. Looking at a DA that is deadjectival, like the Dutch *verslechteren* (*worsen*), Hay et al. take the base adjective to denote a scale representing the degree of the property ϕ denoted by this adjective, and the morphology that is added (*-en* in English and *ver- -(er)en* in Dutch) to be a function INCREASE that returns an event in which the argument increased in ϕ-ness by an amount *d*. The function is given in (3):

(3) [[INCREASE(ϕ)(x)(d)(e)]] = 1 iff $\phi(x)$(SPO)(e)) + d = $\phi(x)$(EPO(e))

In this function, d is the difference in ϕ-ness between the starting point of the event (SPO) and the end point of the event (EPO). This is what Hay et al. call the difference value. This difference value is crucial for the analysis. As the authors point out, if the difference value denotes a bounded amount of change, it is possible to identify a certain endpoint of the change, and the interpretation of the DA will be telic. On the other hand, if the amount of change is not bounded, this endpoint cannot be identified, and the result will be atelic.

The difference value can be specified in several ways. First of all, we have sentences where d is stated explicitly, as is the case in (4):

(4)　　They widened the road 5 meters

The modifying NP *5 meters* is bounded and therefore the interpretation of the degree achievement is telic in this case, as becomes clear in the telicity test:

(5)　　They are widening the road 5 meters $\nRightarrow$　　they have widened the road 5 meters

The use of degree modifiers can also give rise to a bounded difference value (4). This is shown with a test in (6):

(6)　a.　　They widened the road completely
　　　b.　　They are widening the road completely $\nRightarrow$　They have widened the road completely
　　　c.　　They are widening the road significantly $\nRightarrow$ They have widened the road significantly

It is noted that the modifier *significantly* behaves in a comparable way (6), only without making reference to an endpoint on the scale. Rather, it implies that a minimum amount of change must have taken place before the event counts as an event of widening the road with a telic interpretation. The need for identifying a lower bound on the amount of change that must take

place resembles the distinction between mass and count nouns, where count nouns identify minimal instances while mass nouns don't (Chierchia 1998).

In the examples above the difference value was always clearly bounded by overt material. It can however also be the case that its boundedness must be inferred. Here, the scalar structure of the base adjective plays an important role. With respect to scales, adjectives come in two classes: closed-range adjectives and open-range adjectives. As the name already suggests, closed-range adjectives are associated with scales that have a maximal value, and are closed. So the adjective *full* falls in this class, since when an object is full, it is not possible to put more stuff in it. On the scale of fullness, a full object sits at the maximal end of this scale. It is immediately clear that adjectives like *long* or *wide* are associated to scales that don't have this kind of maximal value, since an object can always be longer than another long object, and a street can always be wider than some other wide street. The two classes can be distinguished by the use of the modifier *completely*, closed range adjectives allowing it and open range adjectives not. The predictable conclusion from this is that closed range adjectives typically are the basis for telic degree achievements, while open range adjectives create atelic degree achievements. An example of each case is given below:

(7) a. They filled the gas tank (completely)
     b. They lengthened the track (?completely)

Another way of reaching an atelic interpretation is through binding d with an existential quantifier. The authors also discuss cases where d is dependent on the context. I will not discuss these, since they are not really relevant.

In the next section, I will discuss some sets of verbs that show aspectually ambiguous behaviour, combined with but not always strictly correlating with variable selection of auxiliaries. Besides degree achievements, they include verbs of directed motion, verbs with incremental themes and semelfactives, among others.

3.3. Aspectually Ambiguous Behaviour

So far, we have seen that arguments against a theory based on aspect can be contradicted. However, to adopt an aspectual theory would require more than that, it would require positive arguments as well. So let's see if such a theory is able to shed more light on the problem at hand. We have seen that a certain problematic group of verbs are ambiguous with respect to telicity. In the following subsections, a number of verb classes will be discussed that are ambiguous with respect to aspect and I will show how this correlates with auxiliary selection.

3.3.1. Degree Achievements

Interestingly, the results of the auxiliary test as we have seen them above are actually not so straightforward. When presented with the choice for HAVE or BE, as in *Jan heeft/is gegroeid*, BE is the most prevailing option, however people do accept HAVE in some cases. For some other degree achievements there is a limited level of flexibility in auxiliary choice as well, though not as easy as with *grow*. It would be promising if there is some sort of correlation between those two things for these verbs. At least some of the verbs under discussion allow both HAVE and BE, with either a telic or atelic interpretation when BE is used and an atelic one when HAVE is used. I have checked this with informants, all native speakers of Standard Dutch, and used Google to find more relevant examples. Let's see the following sentences:

(7) a. Op die plek is een boom gegroeid

on that place BE-3sg a tree grown

b. Op die plek heeft een boom gegroeid

on that place HAVE-3sg a tree grown

Both sentences are fully acceptable. The difference in interpretation between these two sentences is that in the first case, there has been an event of tree-growing, starting with nothing and ending up with a full-grown tree. In the second sentence, on that particular place there is no longer a tree, but we know that it has been growing there. However, nothing is said about the starting point of the tree's growing, and neither does this sentence make any claim about the completion of the growing. So it is not a telic event, but rather a situation in which a tree was growing. The only

thing is that you really need the place-PP, otherwise the sentence is out. The same kind of distinction can be made for the following pair of sentences:

(8) a. ?Het percentage van mensen met een mobiel heeft ooit toegenomen
       the percentage of people with a cell-phone HAVE-3sg ever increased

   b. Het percentage van mensen met een mobiel is ooit toegenomen
       the percentage of people with a cell phone BE-3sg ever increased

Sentence (8a) is not accepted by every informant (ten informants including myself) I consulted, although most gave it a question mark. It indicates a period, which in this case is explicitly stated as *ooit*, in which the percentage was increasing. This also works for verbs of directed motion, just as with the verbs of manner of motion that we saw earlier. Note that degree achievements have a lot in common with this set of verbs:

(9) a. Het vliegtuig is gestegen
       the plane BE-3sg ascended

   b. Het vliegtuig heeft gestegen
       the plane HAVE-3sg ascended

The interesting thing is the difference in options of modification: (9a) can be modified by a directional or a locative PP, and (9b) only by a locative PP. Following Zwarts (2005) I will assume that certain directional PPs give rise to telicity, while locative PPs give rise to atelicity.

For the verbs *bewegen*, *verslechteren* and *ontwikkelen* it is really difficult to construct examples, because they need the reflexive *zich*. So in principle, the next sentences are perfectly fine:

(10) a. De auto heeft zich bewogen
        the car HAVE-3sg SE moved

    b. De jongen heeft zich ontwikkeld
        the boy HAVE-3sg SE developed

c.   De situatie heeft zich verslechterd
      the situation HAVE-3sg SE worsened

However, the fact that *zich* is required is problematic. I will put these examples aside because the presence of *zich* might cause some transitivity effect that makes them irrelevant for this story, since we know that transitives in Dutch always require HAVE, irrespective of whether the sentence is telic or atelic. The conclusion that can be drawn from the examples is that when the auxiliary is BE, the interpretation can be telic or atelic, while the interpretation with HAVE is more strongly atelic.

I will list a number of examples that I found with Google, where the relevant verbs are used with HAVE, and have an atelic interpretation:

(11) Sinds een jaar of vijftien bloeit het echter weer op in gebieden waar het nooit eerder
     heeft gegroeid, zo blijkt uit onderzoek.
     'Since about fifteen years it is flowering again in areas where it never HAVE-3sg grown
     before, research shows.'
     (http://www.zeegras.nl/index.cfm?page=herintroductie.pers)

(12) de breedte van de ring geeft aan hoe snel de boom heeft gegroeid.
     'The width of the ring indicates how fast the tree HAVE-3sg grown.'
     (www.hetweer.org/hetwonderlijkeweer/klimaats3.htm)

(13) Bovendien is het aannemelijk dat de plant op zeer slechte gronden heeft gegroeid.
     'Furthermore it is probable that the plant HAVE-3sg grown in bad earth.'
     (http://nl.wikipedia.org/wiki/Kool_(plant))

(14) Ook de functionaliteit heeft toegenomen.
     'The functionality HAVE-3sg increased too.'
     (http://www.snvt.hum.uva.nl/staf/Fuchs/WebLog/pivot/entry.php?id=105)

(15) Vanuit mijn raam heb ik de afgelopen twee jaar kunnen waarnemen hoe de armoede
     heeft toegenomen.
     'For the last two years I could observe from my window how poverty HAVE-3sg

increased.'

(16) Laaiend positief, hoewel de gevoelens van onveiligheid zijn vergroot en het aantal

overvallen en mishandelingen heeft toegenomen.

'Very positive, although the feelings of unsafety BE-3pl grown and the amount of

robberies and assaults HAVE-3pl increased.'

A search query for these verbs used with BE and an atelic interpretation gives a lot more results, and we will see later that this has an explanation. It is just important that the sentences above can be found and get the intended interpretation.

The pattern that arises from the data is that if the auxiliary is BE, the interpretation can be either telic or atelic. However, if the auxiliary HAVE is accepted, it causes a purely atelic interpretation. I will state this observation as a one way implication:

(17) **One way implication**: A sentence with an intransitive main verb and the auxiliary
HAVE bears an atelic interpretation.

This implication deserves an explanation, which will be put forward in the final chapter of this thesis. Now I will try to show that the implication doesn't just apply to degree achievements, but for different classes of verbs that allow both auxiliaries.

3.3.2. Verbs of Directed Motion

The suggestion that Hay et al. made is that DAs can be treated on a par with other verbs with variable aspectual behavior. Let's look at a couple of them. First, there's a set of verbs of directed motion, like r*ise*, *fall*, *ascend* and *descend*.

(18) a. The plane ascended/descended in five minutes

b. The plane ascended/descended for five minutes

(19)   a.   Het vliegtuig steeg/daalde in vijf minuten

       b.   Het vliegtuig steeg/daalde minutenlang

The interpretation of the (a)-sentences is telic. The difference value is the distance to the ground at the time the plane started descending, or the altitude that planes usually fly on. Since d is specified, the predicate is quantized: there cannot be an x such that the predicate (which includes d) is true of x which has a proper part y for which the predicate is also true. In the (b)-examples this can be the case, the pilot might just have decided to continue the flight at a different altitude, leaving the difference value to be bound by an existential quantifier. Then the predicate is just the verb with an unspecified d which leaves space for proper parts of ascending-events that are also ascending-events.

Hay et al. claim that the availability of a difference value makes the verb telic, but it may be cancelled in case it is not specified. If it is, cancellation is not possible:

(20) *The plane descended 1000 meters for 5 minutes

The choice of auxiliary does seem to be connected to the aspectual properties of the VP:

(21)   a.   Het vliegtuig is in 5 minuten/5 minuten lang gedaald

       b.   Het vliegtuig heeft in *5 minuten/5 minuten lang gedaald

The BE-sentence allows both in and for-adverbials, and is thus ambiguous even with the auxiliary. However, this is not the case for the HAVE-sentence. This one is only compatible with a for-adverbial, the in-adverbial is highly dispreffered or even plain ungrammatical.

The Dutch translations of *rise* and *fall* are also quite telling. The verb *rijzen*, which is the most literal translation of *rise*, is not very common, and only used in the context of baking something:

(22) De bakker laat het deeg rijzen

      The baker lets the dough rise

This verb also shows the auxiliary behaviour that we saw above:

(23) a.   Het deeg is in een uur/een uur lang gerezen

b.   Het deeg heeft *in een uur/een uur lang gerezen

The dough AUX in an hour/for an hour risen

Again, the sentence with HAVE is incompatible with the telic adverbial. The verb *fall* is a bit more difficult to find with HAVE, but this can receive an extralinguistic explanation: the concept of falling is much more transparent with an endpoint than without one since in our world things that fall are bound to hit the ground at some point, while things that go up don't have to find anything on their path ever. One could construct something like the sentence below in (24b):

(24) a.   De steen is in een minuut/een minuut lang   gevallen

the stone IS in a minute/for a minute   fallen

b.   De steen   heeft   wel   een minuut gevallen,   en hij heeft de grond

The stone   HAVE-3sg   prt   for a minute fallen,   and he HAVE-3sg the ground

still   not   reached

nog steeds niet   bereikt

Again, we see that the BE-sentence is grammatical with both a telic and an atelic interpretation. The interpretation of the first part of the HAVE-sentence is atelic, and is incompatible with a telic one. We see that these data is compatible with the one way implication presented in the previous subsection.

3.3.3. Semelfactives

As a last example of verbs of aspectually ambiguous behaviour let's take a look at semelfactives. I will discuss these verbs more deeply in the next chapter, but let me just illustrate their relevance. A verb like *springen* (*jump*) can be used in a case of a single jump, or in relation to an activity that consists of multiple occurrences. In the first case, the sentence is telic, in the second case it is atelic:

(25) a.   Jan is in de rivier gesprongen

Jan BE-3sg in the river jumped

b.   Jan heeft in de rivier gesprongen

Jan HAVE-3sg in the river jumped

(26) a.   De windrichting is gedraaid

the direction of the wind BE-3sg turned

b.   De molen heeft gedraaid

the mill HAVE-3sg turned

(27) a.   De bal is gestuiterd

the ball BE-3sg bounced

b.   De bal heeft een tijdje gestuiterd

the ball HAVE-3sg for a while bounced

We can conclude that the data discussed here support the one way implication presented above, that the auxiliary HAVE in intransitive sentences always comes with an atelic meaning. In fact it is even stronger here: the BE-sentence has a strictly telic meaning as well.

However, there is also a group of semelfactives that don't behave as nice as these. In fact, if nothing is said about them, they would contradict the implication in (17). Example of them are given below:

(28) a.   De jongen heeft geniesd

the boy has sneezed

b.   Hij heeft op de deur geklopt

he has on the door knocked

c.   Jan heeft op de grond gespuugd

Jan has on the ground spit

In (29) a list of both classes of verbs is shown:

(29) a.   *jump*-type: springen, stuiteren, zwaaien, draaien

b.   *sneeze*-type: niezen, kloppen, hoesten, spugen, knikken

The auxiliary of the verbs in (29b) is HAVE, however the interpretations can be both telic and atelic, the standard telicity-tests demonstrate this:

(30) a.   De jongen heeft een minuut lang/*in een minuut geniesd
          the boy HAVE-3sg for a minute/in a minute sneezed

b.   De jongen heeft bijna geniesd
     the boy HAVE-3sg almost sneezed

c.   De jongen is aan het niezen -/-> de jongen heeft geniesd
     the boy is sneezing -/-> the boy HAVE-3sg sneezed

In (30a), *in a minute* is grammatical, which would indicate an atelic meaning. (30b) is not ambiguous between an almost occured and an almost complete interpretation (see 2.3.2.3). It only has the first interpretation. This also indicates an atelic meaning. The entailment test in (30c) shows that there is also a telic interpretation, since the entailment is not there.

This means we are faced with a problem: against the prediction, we are left with a class of verbs that are apparently intransitive, take HAVE as auxiliary and can have a telic interpretation. To solve this issue, we must find a way to distinguish between the *jump*-type verbs and the *sneeze*-type verbs. This may be done in terms of cognate objects. If it could be shown that there is a difference in this respect, we might be able to blame the diverging behaviour of *sneeze*-type verbs to the status of their cognate object. In other words, a transitivity effect might be at hand here. That cognate objects are present can be seen from the following:

(31) a.   He jumped a big jump
b.   He sneezed a loud sneeze
c.   He nodded a clear nod

Let's take a look at what differences may arise between the two groups. A first observation is that with the *sneeze*-group, some kind of undergoer may be present that is different from the initiator. Someone that jumps, jumps himself, meaning that the initiator himself undergoes the jump. This is not necessarily the case with the *sneeze*-group: if someone sneezes, of course he undergoes the sneeze himself, but intuitively there is more involved in the event than just the person himself.

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The same goes for *knock*: if someone knocks, he usually knocks his hand onto something, or a hammer, or some other object. This difference also underlies the intuition that if we passivize the relevant verbs, there is an interpretational difference:

(32) a.   Hij is gesprongen

         he BE-3sg jumped

   b.   Hij is gedraaid

         he BE-3sg turned

   c.   Hij is geniesd

         he BE-3sg sneezed

   d.   Hij is geklopt

         he BE-3sg knocked

Here we force the auxiliary to be BE, and while this leads to odd sentences with the sneeze-type verbs we can still observe an interpretational difference. The first two examples are interpreted as if *he* is the initiator of the event, whereas *he* in (32c-d) can only be someone who undergoes a sneezing or knocking event.

While the set of verbs that were brought up in this subsection clearly form a problem for the implication in (17), I will take the present discussion to enable me to make the tentative suggestion that the situation is not hopeless and something can be said about those verbs and the status of their cognate object. These cognate objects might be the cause for the verb to select HAVE in all cases, rather than just in the atelic cases.

3.3.4. Incremental Themes

Take a look at the next sentence, involving a verb of consumption:

(33) John ate an apple in/for five minutes

The modificational options show that the verb is ambiguous between telic and atelic. The object in this sentence is an incremental theme, which means that there is a homomorphism (a structure-preserving mapping of two structures) between the physical extent of the object and the temporal

progress of the event: when the event-time continues, the apple becomes smaller. Hay et al. note that this homomorphism gives rise to a certain type of telicity, whereas the telicity of verbs of change of state and verbs of motion is attained in a different way, through either a homomorphism between a gradable property or a path on the one side and the event denoted by the verb on the other. This means that it is hard to get to a unified analysis of telicity. With verbs of consumption, it is the object itself that matters, while in other types of verbs it is a property of that object that matters. The suggestion that Hay et al. come up with is that in fact, this is not true, even for consumption verbs there is a property of the object, namely a spatial property like its area or volume, that determines telicity. This means that the incremental theme is actually just a difference value, and most importantly, not a real argument. I will get back to this suggestion, but first let's look at some more verbs:

(34) a.   John heeft gelopen   (*completely)
           John HAVE-3sg walked

      b.   John is naar het station gelopen   (completely)
           John BE-3sg to the station walked

      c.   John heeft tien kilometer gelopen   (*completely)
           John HAVE-3sg ten kilometres walked

(35) a.   John heeft gezwommen
           John HAVE-3sg swum

      b.   John is naar de overkant gezwommen
           John BE-3sg to the other side swum

      c.   John heeft tien kilometer gezwommen
           John HAVE-3sg ten kilometres swum

These data look like they pose a problem for the analysis in terms of telicity. The (a)-examples show the verbs in their unmodified way, denoting an atelic meaning, and the auxiliary is HAVE, as to be expected. The (b)-examples are modified by a directional PP and therefore are telic, causing the auxiliary to be BE. However, the (c)-examples should also be telic, according to Hay et al. There is a bounded difference value, which means that an endpoint to the action can be

identified, namely that point at which John walked or swam ten kilometers. Still the auxiliary is HAVE. A possible solution to this problem is given in Morzycki (2004), where it is suggested that these spatial DP adverbials are actually arguments of the verb. After all, these things can passivize:

(36) Tien kilometer/de race/*naar het station werd(en) gelopen door Jan

   Ten kilometers/the race/to the station was walked by Jan

This solves the issue, since the sentences with the measure phrase are now transitive, and thus do not have the option of choosing anything else than HAVE. It is interesting to note that degree achievements behave differently in this respect: (30a) is out, meaning that the measure phrase has a different status than the one in (29), but (30b) shows that this correlates with the fact that the auxiliary changes back to BE.[1]

(37) a.   *Vijf centimeter werd gegroeid door Jan

         five centimeters was grown by Jan

   b.   Jan is/*heeft vijf centimeter gegroeid

         Jan BE/*HAVE five centimeters grown

Now we can return to the problem of incremental themes. We saw that unifying three types of telicity may be achieved by stating that neither of the following objects are actually objects:

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[1] Note also that the measure phrase *five centimeters* in (19) doesn't behave just like the measure phrases that Morzycki discusses in his papers with respect to the following observations:
   – Measure DP adverbials always have narrower scope than negation,generalized quantifiers, main clause and verbs.
   – Measure DP adverbials are limited to a low positions in the tree.
   – Measure DP adverbials impose the requirement that the eventuality is durative, aspectually homogeneous. Like *for x time* PPs.
Morzycki analyzes measure DP adverbials as if they were argument-like because of these facts. The measure phrase in (19) only patterns with them in the scopal facts. However, Dutch tends to behave rather differently than English with respect to the scopal and distributional facts. I will leave this aside.

(38) a.   John ate an apple

    b.   John ran a thousand miles

    c.   They widened the road

Against Hay et al., it seems to me to be a better option to unify the three types of telicity by letting the incremental theme be a real object, just as the other expressions that introduce a difference value. For the motion verbs, which are unergative, this has already been suggested by Kayne (1993).

3.4. Rotstein and Winter: Completely DA

In this section, we will take a close look at the test with the adverb *completely*. Rotstein and Winter discuss it extensively in their (2004)-paper. They propose a way of dealing with modification of adjectives with modifiers like *completely* by using scale structures for the adjectives. We have seen the use of scale structures before; in the first section of this chapter, but Rotstein and Winter elaborate a lot more on the details of these scales. Within those scale structures a distinction is made between total and partial adjectives. Pairs of adjectives such as *safe-dangerous* or *clean-dirty* consist of a total and a partial adjective. The total adjective describes the absence of a certain property (danger or dirt in these cases), while the partial adjective indicates the presence of this property. On a scale this would mean that a total adjective is located at the bottom end of that scale, while the partial adjective can be placed at a place on the scale that would count as dangerous or dirty by the given context. The distinction has also been labelled universal vs. existential (Rossedeutcher & Kamp 1994).

Rotstein and Winter argue that the modifier *completely* is sensitive to the distinction between those adjectives. Even more, they aim at giving an explanation for the following contrast:

(39) a.   completely straight/safe/dry/healthy

    b.   *completely crooked/dangerous/wet/sick

The same contrast is found with another modifier, *almost*. We can also distinguish between complementary and non-complementary adjectives. An example of a complementary adjective-pair is *complete-incomplete*. If one of these properties is absent, the other one is present.

The modifier *completely* can be said to indicate a bounded adjective. Other adjective-pairs are shown to have no total adjective with this test, these are labelled relative adjectives. These adjectives are non-complementary; something can be neither narrow nor wide.

(40) a.   *completely narrow

     b.   *completely wide

Let's have a look at the scale structure that Rotstein and Winter give:
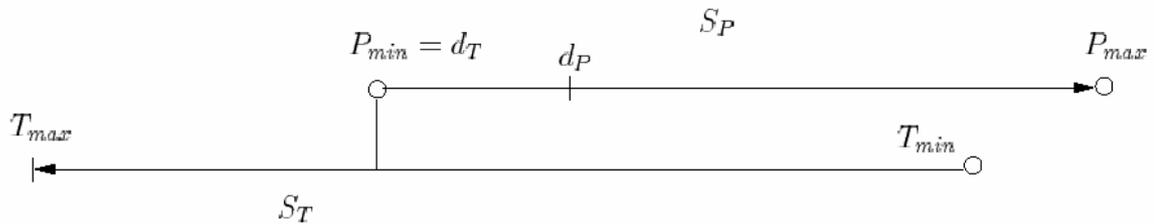
Figure 1

There is a separate scale for both total (S_T) and partial (S_P) adjectives. Both scales have a standard value d_T and d_P, where d_T is situated at the minimal value for P, P_{min}, and d_P is free to be anywhere between P_{min} and P_{max}.

The modifier *almost* is associated with an interval adjacent to but lower than the standard value. If an adjective pair is complementary, then d_T equals d_P. A quick glance at figure (2) is enough to see that if d_T equals d_P, there is no space on S_P that is smaller than d_P, which means that there is no space for *almost* to denote on S_P.
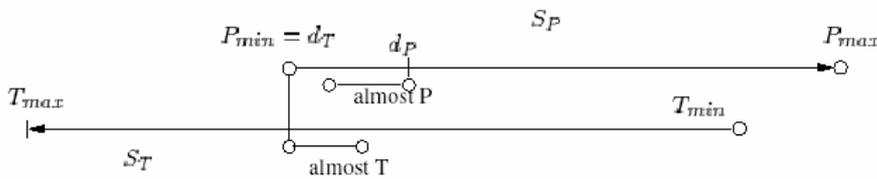
Figure 2

Still there is space for it to denote on the total scale. This explains the following contrast:

(41) The work is almost complete/*incomplete

The total adjective *complete* can be modified with *almost* since there is space on S_T for an interval adjacent to but smaller than d_T, while the partial adjective *incomplete* is not available for such modification.

The denotation of an adjective is as follows:

(42) $[[A]] = \{x \in S_A : R_A(d_A, x)\}$

In words, the denotation of an adjective is a point or interval x on the scale of this adjective, such that there is an ordering relation between the standard value of the adjective and x, which is equal to or higher than d_A. Analogous to this denotation, the denotation of partial and total adjectives are as follows:

(43) a. $[[P]]$ $= \{x \in S_P : R_P(d_P, x)\}$

$= \{x \in (P_{min}, P_{max}) : d_P \leq x\}$

b. $[[T]]$ $= \{x \in S_T : R_T(d_T, x)\}$

$= \{x \in [T_{max}, T_{min}) : d_T \geq x\}$

$= [T_{max}, d_T]$

Rotstein and Winter then define a standard value of completeness, d^C_A, as follows:

(44) $d^C_A \in S_A$, where $R_A(d_A, d^C_A)$ holds

This means that d^C_A is on S_A, at some determined point higher than the standard value of A. The denotation of *completely A* can now be defined as:

(45) $[[completely\ A]] = \{x \in S_A : R_A(d^C_A, x)\}$

The denotation of *completely A* is the set of x's on scale S_A such that x is ordered higher than d^C_A.

After all these semantics, let's have a look at how the verbs under consideration behave:

(46) a.　　*De vaas is helemaal gevallen　　　　　　unaccusatives
　　　　　　the vase BE-3sg completely fallen

　　　b.　　*De man is helemaal gestorven
　　　　　　the man BE-3sg completely died

　　　c.　　De tak is helemaal gebroken
　　　　　　the branch BE-3sg completely broken

　　　d　　*De jongen is helemaal gearriveerd
　　　　　　the boy BE-3sg completely arrived

　　　e.　　*De man is helemaal gegaan
　　　　　　the man BE-3sg completely gone

　　　f.　　Het ijs is helemaal gesmolten
　　　　　　the ice BE-3sg completely melted

　　　g.　　De deur is helemaal geopend
　　　　　　the door BE-3sg completely opened

　　　h.　　*De dief is helemaal ontsnapt
　　　　　　the thief BE-3sg completely escaped

　　　i.　　de boot is helemaal gezonken
　　　　　　the boat BE-3sg completely sunk

　　　j.　　De aardappels zijn helemaal gekookt
　　　　　　the potatoes BE-3pl completely cooked

(47) a.　　*De jongen heeft helemaal gelopen　　　　unergatives
　　　　　　the boy HAVE-3sg completely walked

　　　b.　　*Het meisje heeft helemaal gedanst
　　　　　　the girl HAVE-3sg completely danced

　　　c.　　*De man heeft helemaal gelachen
　　　　　　the man HAVE-3sg completely laughed

　　　d.　　*De lamp heeft helemaal gegloeid

the lamp HAVE-3sg completely glowed

    e.   *De jongen heeft helemaal geniest

the boy HAVE-3sg completely sneezed

    f.   *De man heeft helemaal geschreeuwd

the man HAVE-3sg completely completely yelled

    g.   *De jongen heeft helemaal gepraat

the boy HAVE-3sg completely talked

    h.   *De man heeft helemaal getelefoneerd

the man HAVE-3sg completely phoned

    i.   *De jongen heeft helemaal gewerkt

the boy HAVE-3sg completely worked

    j.   *De hond heeft helemaal geblaft

the dog HAVE-3sg completely barked

(48) a.   De boom is helemaal gegroeid   DAs

the tree BE-3sg completely grown

    b.   Het programma is helemaal ontwikkeld

the program BE-3sg completely developed

    c.   *De welvaart is helemaal toegenomen

the prosperity BE-3sg completely increased

    d.   De grens is helemaal vervaagd

the border BE-3sg completely blurred

    e.   De situatie is helemaal verslechterd

the situation BE-3sg completely worsened

First of all, the results of the unaccusative verbs need to be a little more elaborate. It turns out that some of them are ungrammatical in some situations, while it is possible to come up with a situation where they are fine:

(49) a.　　??De jongen is helemaal gevallen

　　　　　The boy BE-3sg completely fallen

　　b.　　De toren is helemaal gevallen

　　　　　The tower BE-3sg completely fallen

(50) a.　　??De jongen is helemaal gearriveerd

　　　　　The boy BE-3sg completely arrived

　　b.　　Het bestand is helemaal gearriveerd

　　　　　The file BE-3sg completely arrived

(51) a.　　??De dief is helemaal ontsnapt

　　　　　The thief BE-3sg completely escaped

　　b.　　Het gas is helemaal ontsnapt

　　　　　The gas BE-3sg completely escaped

The pattern we see is that reaching a certain endpoint is not enough to allow modifying the sentence with *completely*. There has to be a process that reaches an endpoint, and not just a punctual change of state. This is why the sentences with *break* and *arrive* are grammatical with *completely* when a process is pragmatically accessible. The nature of the subject allows an interpretation like this. A falling boy is nothing like a falling tower, a falling tower takes a while before it is down on the ground. It can even just lose the top, leaving the rest unharmed. In data communication, a file can be sent and arrive only half. So it is not so clear what it means if an unaccusative fails the test. It might be the case that for the two ungrammatical cases that are left a context can be found in which they would be good. On the other hand, unergative verbs never seem to lead to a grammatical result in the *completely*-test. Neither is it possible to construct examples like the ones in (32-34). So it looks like the conclusion we can draw from these data is that there is at least a one way implication that can be stated as follows:

(52) **One way implication**: If a sentence is modified with *completely*, the verb phrase is telic, and the auxiliary BE must be used.

That they are telic can be shown by the standard telicity-tests:

(53) a.   Het ijs is helemaal gesmolten in drie uur/*drie uur lang   (=39f)

      b.   De deur is helemaal geopend in drie seconden/drie seconden lang (=39g)

It becomes clear from the results that most DAs are fine with *completely*. So, the DAs under discussion have a telic interpretation in these sentences. A separate conclusion we can draw from the data is that if the auxiliary HAVE is used, the sentence will fail the *completely*-test. Earlier we saw examples of DAs used with HAVE, of which I repeated one below in (47). The examples in (41) cannot be used with HAVE; that is really ungrammatical. The modifier *completely* prevents this.

(47) Op die plek heeft een boom (*helemaal) gegroeid

       on that place HAVE-3sg a tree (*completely) grown

Trying to modify a sentence like (47) with *completely* leads to ungrammaticality. So it seems that this strengthens the idea that there is at least a one way implication involving telicity and selection of HAVE, as I have stated in this chapter.

3.5. Conclusion

Let me sumarrize our findings of this chapter. First I discussed Hay, Kennedy and Levin's analysis of degree achievements, and discussed a number of verb-classes that show aspectually ambiguous behaviour, including degree achievements. It was shown that certain degree achievements are more acceptable with HAVE if the sentence is modified with a locative PP or we are dealing with a natural process. They give support for the idea that HAVE implies an atelic meaning, though BE goes with both telic and atelic ones. We also saw that the class of semelfactives contains a subclass that behaves rather nicely according to the one way implication that I proposed, and another subclass that apparently doesn't. This class is a problem because it consists of verbs that take only HAVE but can be telic or atelic. However, it could be the case that the implication can be saved because something can be said about their

    In section 3.4 I discussed a paper by Rotstein and Winter on the semantics of adjectives, which was relevant for the test with the adverbial modifier *completely*. In a nutshell, this showed

us more about the way degree achievements pattern with telic and atelic verbs, and about the scale structure that is associated with the verb.

Chapter 4: Analysis

4.1. Introduction

In the second chapter of this thesis we have seen that it may be too early to reject the idea of a relationship between auxiliary selection and telicity in Dutch, whether or not this relation should be direct or less direct, based on the suggestion that arguments against this relationship might be contradicted, and the case of degree achievements, which shows that the clear dichotomy between unaccusatives and unergatives is too rigid, and more is needed to account for the facts. A deeper look into degree achievements was given in chapter three.

In this chapter I will present some ideas that will possibly be able to give a structured explanation of the data at hand concerning verbs that show variable behaviour with respect to aspectual properties. The analysis laid out here will be based on the framework of Ramchand (2006), as introduced in chapter one. I will try to combine and accommodate ideas from Caha (2006), Tungseth (2006) and Taraldsen and Medová (2006). In Caha (2006) a system of Case peeling is proposed, based on ideas by Starke, that treats different cases as subsets. An element starts out with oblique case, probably dative, and loses layers of case when moving up in the structure, ending up with only a structural case like accusative or nominative left. Tungseth discusses semelfactives and degree achievements in her 2006 dissertation, arguing that they can be treated on a par on the basis of some aspectual facts. The notion of S-summing will be important here, and it will be used to derive atelic meanings of telic ones. She argues for an aspectual head that performs this S-summing operation to derive atelic meanings from the more basic telic ones. So an atelic verb phrase is nothing more than a telic one expanded with an aspectual phrase. I will try to argue that this expansion of the verb phrase can trigger the auxiliary HAVE to spell out in stead of BE. I will state this in terms of differing lexical entries of HAVE and BE, where HAVE contains the same structure of BE except that it is expanded with the aspectual head that performs the S-summing operation. The fact that degree achievements do not generally accept auxiliary HAVE is then explained by the notion of subsets. The aspectual S-summing head can only be present if it obeys the subset principle. Due to the absence of a little v this will not be the case. I will demonstrate how the choice of auxiliary of different verb classes is derived.

However, first I will argue for this particular way of analyzing by showing that a different potential analysis wouldn't work. This potential analysis makes use of the internal structure of the participle; the layers that are present in the VP could in principle determine the aspectual properties of the verb phrase, and also the choice for a specific auxiliary. However, I will show that in fact the internal structure of the verb is not crucial for either of these properties. It has already been shown by Ramchand (2006) (among others) that aspectual properties of the verb phrase are not solely determined by the internal structure of the verb. On top of that, I will show that there is no correlation between the internal structure of the participle and auxiliary selection. This means that in the end, different properties than the internal verb structure must play a role in auxiliary selection. The discussion involves Taraldsen and Medová (2006), who propose an analysis of different kinds of state participles. The distinction between two kinds of stative participles is reflected in the way their syntax is built up. I will show that this distinction does not correlate with auxiliary selection or with telicity.

4.2. Taraldsen & Medová: Still DA

As I explained in the introduction, in the next section I will go into the internal structure of the participles, in an attempt to show that it is not this structure that matters for auxiliary selection. Building on observations by Kratzer (2000) and Taraldsen and Medová (2006), I will show that there is no correlation between the presence of certain layers of verbal structure and auxiliary selection.

Kratzer (2000) shows that a distinction can be made between two kinds of stative participles, which she labels target state participles and resultant state participles. The difference between these two classes is that target state participles denote a state that can hold for a certain time and then cease to hold, while a resultant state participle denotes a state that once it holds, it can never cease to hold. This is examplified with the following data:

(1)   a.   The book is still hidden

     b.   The ice is still frozen

     c.   *The theorem is still proven

     d.   *The guests are still greeted

In the first two sentences, it is possible to modify the verb phrase with *still*, which Kratzer takes to show that we are dealing with target state participle. In fact, this is intuitively true: if a state can be modified by *still*, it must be able to cease to hold. Another distinguishing property is the possibility of a directional PP, which can be shown with a Czech example, taken from Taraldsen and Medová:

(2) a. Kabat byl   povesen   na vesak/*na vesaku   Ivonou

  b. Kabat byl   povesenej   na vesak/na vesaku   *Ivonou

  c. Kabat je   jeste porad povesenej   *na vesak/na vesaku   *Ivonou

      Coat BE   still   hanged on   hanger-DIR/on hanger-LOC   by Ivona

The first sentence is a periphrastic passive, as can be seen by the possibility of adding a *by*-PP, and the use of the short form participle *povesen*. It also becomes clear that this passive cannot have a locative PP, the PP must be directional. In (2b), the passive is adjectival, since the long form of the participle, *povesenej*, is used. Suddenly, the locative PP is allowed as well as the directional one. However, creating a target state participle by modifying this sentence with *jeste porad*, meaning *still*, results in ungrammaticality of the directional PP and only allows a locative one. Taraldsen and Medová conclude from this that target state participles cannot be modified with a directional PP. The table below sums these facts up:

	Target state participle	Resultant state participle
Difference in meaning	State can cease to hold	State holds forever
Still-**modification**	yes	no
Directional PPs in Czech	no	yes

The analysis that Kratzer proposes for them involves the introduction of a stativizer, which has these semantics:

(3) λRλs ∃e R(s)(e)

So it takes a predicate with a state and an event argument, and closes the event argument, leaving just a state. This might explain why directional PPs don't combine with T-participles, since the semantics of a directional PP demand an event argument. This is proposed by Zwarts (2005), who introduces a trace function for directional PPs that 'returns the path followed by the theme of e':

(4) $[[V\ PP]] = \{e \in [[V]]: \tau(e)\ in\ [[PP]]\}$

So it would seem that directional PPs are incompatible with T-participles for this reason. However, Taraldsen and Medova propose a different analysis. They claim that the use of this stativizer is not needed, and moreover, unwanted, since the morphology that it comes with is also used on R-participles, not only in Czech but in a wide variety of languages. This fact is not accounted for under this assumption. There is no reason for the R and T-participles to have the same morphology in so many languages if a different semantics underlies them. Taraldsen and Medova therefore reject the stativizer altogether, assuming a version of Ramchand's First Phase Syntax, which was introduced in the first chapter. As a reminder, she takes a verbal phrase to be split up in a layer for an initiator, one for a process and one for a result state. T&M's suggestion is that T-participles cannot combine with a directional PP since the participle lacks a PROC-P, which is necessary for the PP, since it needs an event, rather than just a state. R-participles on the other hand do have a PROC layer, allowing the PP to combine. So the first phase structure of the adjectival passives is as follows:

(5)   a.   *participle* [$_{DIR}$ [$_{ProcP}$ *subject* PROC [$_{LOC}$ [$_{ResP}$ <*participle*> RES]]]]
      b.   *participle* [$_{LOC}$ [$_{ResP}$ *subject* RES]]

The surface order of the sentence is derived by movement of the subject through the INIT layer and further up, across the verb and the auxiliary.

Turning then to the question of why all other participles require a directional PP rather than a locative one, a problem arises. Under the proposed account nothing prevents the locative PP from combining with the ResP and getting embedded under ProcP, forming an R-participle. The solution to this problem is that once a ProcP is merged, any locative PP that is present in the

structure is forced to grow into a directional one. This is somewhat simplified, because there are some problems with the compositional semantics of this construction, but it is not crucial to discuss that here, since nothing hinges on it.

Let's see how our degree achievement verbs behave with respect to the *still*-modification test (8), and compare these results to the sets of clear unaccusatives (6) and unergatives (7):

(6)   a.   De vaas is nog steeds gevallen

the vase is still fallen

b.   *De man is nog steeds gestorven

the man is still died

c.   De vaas is nog steeds gebroken

the vase is still broken

d.   *De jongen is nog steeds gearriveerd

the boy is still arrived

e.   *De man is nog steeds gegaan

the man is still gone

f.   Het ijs is nog steeds gesmolten

the ice is still melted

g.   De deur is nog steeds geopend

the door is still opened

h.   De dief is nog steeds ontsnapt

the thief is still escaped

i.   De boot is nog steeds gezonken

the boat is still sunk

j.   ?De aardappels zijn nog steeds gekookt

the potatoes are still cooked

(7)   a.   *De jongen heeft nog steeds gelopen

the boy has still walked

b.   *Het meisje heeft nog steeds gedanst

the girl has still danced

c.   *De man heeft nog steeds gelachen

the man has still laughed

d.   *De lamp heeft nog steeds gegloeid

the lamp has still glowed

e.   *De jongen heeft nog steeds geniesd

the boy has still sneezed

f.   *De man heeft nog steeds geschreeuwd

the man has still yelled

g.   *De jongen heeft nog steeds gepraat

the boy has still talked

h.   *De man heeft nog steeds getelefoneerd

the man has still phoned

i.   *De jongen heeft nog steeds gewerkt

the boy has still worked

j.   *De hond heeft nog steeds geblaft

the dog has still barked

(8) a.   *De boom is nog steeds gegroeid

the tree is still grown

b.   *Het programma is nog steeds ontwikkeld

the program is still developed

c.   ?De welvaart is nog steeds toegenomen

the prosperity is still increased

d.   ?De grens is nog steeds vervaagd

the border is still blurred

e.   ?De situatie is nog steeds verslechterd

the situation is still worsened

Remember that if the sentence is ok with *still*, the structure of the participle contains no PROC layer, but it does contain a RES layer. If the sentence is ungrammatical with *still* the structure contains both these layers. The examples show that unergatives clearly don't take T-participles. They are without a doubt all ungrammatical. This is expected because state passives never take HAVE. The unaccusatives don't show a clear in or out judgment, rather they vary from ungrammatical to question-marked to completely fine. It depends on the semantics of the verb whether or not the situation can be reversed or not. What this would mean in terms of Taraldsen and Medova's account is that unergatives are not able to do without a PROC-layer, something that a T-participle lacks, under their assumptions. However, as Kratzer (2000) notes, the *still*-test is only reliable in one direction: if a verb passes it, it must be the case that we're dealing with a T-participle. If not, we cannot directly conclude that it is an R-participle. This is illustrated in (9):

(9) a.   *The feast is still over

    b.   *The homework is still done

    c.   #Melchiades is still dead

    d.   #The potatoes are still cooked

The first two sentences are clearly ungrammatical and really fail the *still*-test. There is no way that the feast, once it is over, will be not over again. The same goes for the homework of (9b), which will always be done once it is done. The other examples are different however. Although it is hard to conceive of Melchiades turning back alive, it is still possible to imagine. There may also be potatoes of some kind that ignore any chemical laws and turn raw after they are cooked. The thing is that time doesn't have to be turned back in order to have the potatoes raw again. For the homework to be undone this has to be the case, the event of doing homework simply happened and cannot be undone. For the unergatives in (7) it is pretty clear that no reversing the situation is possible. It is simply true that walking, dancing and other events happened and there is no way to undo that without going back in time. I will conclude that they really don't pass the *still*-test.

For the unaccusatives, the situation is a little more diffuse, although they are generally grammatical with *still*. The sentence of (9c) also shows up in our group of unaccusatives, as well

as (9d). I will take these examples to be ok with *still*, and suggest that unaccusatives are generally ok with the modifier *still*.

The degree achievements don't show a uniform result either. Some are more or less grammatical, while there are a couple that are really ungrammatical. On the basis of this, we cannot conclude that degree achievements have a unified internal verb structure.

4.3. Unifying DAs and semelfactives

Jablonska (2006) discusses degree achievements as well. She also notes the ambiguous behavior of those verbs with respect to aspect, and explains this in the following way. Her assumption is that degree achievements are in principle telic, that is the property along which these verbs operate, for example *length*, must undergo a certain minimal change, for instance 1 millimeter, before we can speak of an instance of growth. However, unlike other changes, these changes do not cause a transition from one state into another, like for example with *break*, where you transit from a one-piece-state into a multiple-piece-state, rather the change undergone here allows the same event to apply again. So after growing a centimeter you can grow another centimeter immediately again without having to shrink first. The endpoint of the first growing-event is the starting point of the second growing-event. This is not possible with verbs like *breãk*

Jablonska argues that therefore degree achievements allow S-summing, meaning that two instances sharing a starting/endpoint together create a bigger event of the same kind. This is why degree achievements also allow atelic interpretations. This is exactly what is the case in the degree achievements that we are discussing, they denote a process with an endpoint but without a change of state in the sense of $\neg\varphi \rightarrow \varphi$. This property is also pointed out in Tungseth (2006), where a unified analysis for degree achievements and semelfactives is given. In her (2006)-dissertation, Tungseth argues for a unified analysis of degree achievements and semelfactives. In Norwegian, degree achievements show the same aspectual ambiguity as they do in Dutch. However, when the preposition *til* (*to*) is added, the sentence is disambiguated and can only be telic:

(10) Konkurransen   om studentene   hardnet

      competition.the   for students.the hardened

      'The competition for the students hardened.'

(11) Konkurransen   om studentene   hardnet   til

      competition.the   for students.the hardened   to

      'The competition for the students hardened.'

The difference in meaning is confirmed by the standard telicity-tests. Against Ramchand, Tungseth proposes to have a unified analysis of degree achievements and semelfactive verbs. The main argument for this is that both types of verbs allow the endpoint they specify to be the starting point of a new event of the same type. The proposal is that both types of verbs are basically telic, and can become atelic by an operation in an aspectual head. Semelfactive verbs, like *jump* or *kiss*, come with a PROC-head and an underspecified RES-head. This means that an endpoint of the event is given, but no result state. Without this result state, it is possible to take the endpoint of an event as the starting point of another event of the same type. This is called S-summing. S-summing is basically a concatenation-operation that puts two events together leaving one bigger event of the same type. We will see that this results in the atelic interpretation of degree achievements and semelfactives. Two events are S-summable if the following is true:

(12) $\exists e \exists e'\, [X(e) \wedge X(e') \wedge \neg e \sqsubseteq e' \wedge \forall e \forall e'\, [X(e) \wedge X(e') \wedge R(e,e') \rightarrow X^S(e \sqcup e')]]$

That means that there two events of which the same predicate is true, they have the same participants and their running times overlap. If there is a result state specified, intrinsically as in unaccusatives like *break* or by means of a bounded PP or resultative AP, there cannot be two events of the same type that minimally overlap in this way, because a transition has taken place from $\neg \varphi \rightarrow \varphi$, which needs a transition back first before it can apply again. So, with semelfactive verbs, the atelic activity-reading arises because of this specific option to concatenate two events of the same type into a bigger event of this type. Let's look at the verb *springen*, as predicted it allows two readings, an atelic one and a telic one. Note that the choice of auxiliary strictly correlates with the change in interpretation:

(13) a. Jan is in het water gesprongen   (telic)

Jan BE-3sg in the water jumped

b. Jan heeft in het water gesprongen   (atelic)

Jan HAVE-3sg in the water jumped

The sentence with BE can only mean that Jan jumped into the water from a place outside it. This meaning is not present in the HAVE-variant, which can only mean that there has been some kind of activity with multiple jumps.

Tungseth argues that the ambiguity of degree achievements arises in the same way. The verb's basic entry is [PROC, RES], instead of just PROC (as Ramchand argues), with an underspecified RES. This means that degree achievements are basically telic. The endpoint is there, but a result state is lacking. This means that the endpoint of for example a growing-event can be the starting point of another event of growing. It is therefore an option to S-sum subsequent events, and obtain an atelic interpretation. In Norwegian this atelic interpretation disappears if *til* is added because this preposition specifies a result state. If this is the case, then S-summing can no longer apply and no atelic interpretation arises. Tungseth notes that in principle all activity verbs are iterations of minimal events and thus involve S-summing, but that for most of them, like for example *walk* or *run*, this minimal event is not accessible.

The analysis that Tungseth proposes involves the appearance of an aspectual head above the first phase, in which the S-summing takes place. To illustrate this, consider these two examples:

(14) a. Himmelen mørknet

sky.the darkened

b. Himmelen mørknet til

sky.the darkened to

If it is the case that degree achievements do not specify a result state, and *til* does, the structures for (14a-b) are as follows:
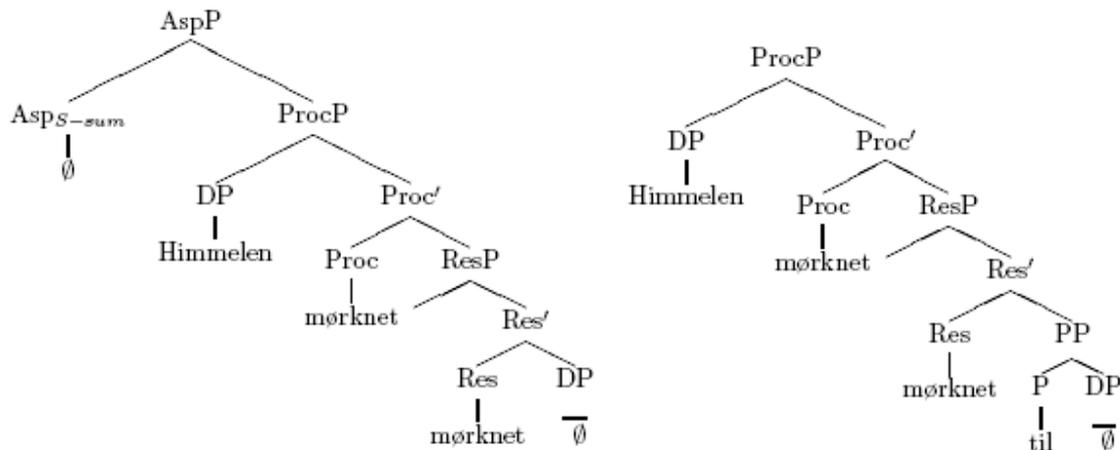
If *til* is not present, an aspectual head can appear above ProcP and apply S-summing resulting in an atelic interpretation. Since the sentence can also be telic without *til* it doesn't apply obligatorily. If *til* is added, this element will specify the result state of the sentence which excludes S-summing. I will now use this analysis in arguing for a way of connecting telicity and auxiliary selection in Dutch.

4.4. Incorporation

As we have already seen in the introduction of this thesis, a common assumption is that the auxiliary HAVE is in some way derived from auxiliary BE. I gave a sketch of a specific proposal that argues for this, Kayne (1993). To recall, the main idea is that there is a D/P-head that incorporates into the AUX-head, to enable movement of the subject which would otherwise be improper. Kayne's structure is given in (15):

(15) ... BE [$_{DP}$ Spec D/P^0 ... [$_{VP}$ DP$_{SU}$ [V DP$_{OB}$]]]

At this stage, the subject DP will have to move up. It will land in the specifier of the larger DP, which is A-bar movement, while the specifier of BE is an A-position. Movement to that position is thus not allowed, and to avoid this problem the D/P^0 will incorporate into BE. The complex head BE+D/P^0 has a specifier which is an A-position, enabling the movement of the subject here. The complex of BE+D/P^0 spells out as HAVE.

So what we have here is the hypothesis that a prepositional-like head incorporates in the auxiliary BE to prevent an improper movement operation. Adopting the first part of this proposal, Mahajan (1996) hypothesizes that the reason why ergative languages tend to lack auxiliary HAVE is that the incorporation of the P-head doesn't take place because it is never adjacent to BE. This is due to the basic word order of those languages. Therefore, in those languages it will show up on the subject as ergative case. According to Mahajan, not only ergative case shows up because of a P that didn't incorporate, also dative cases can be the result of this, for example in possesive constructions, which can be spelled out as *I have a sister* in one language or as *to me is a sister* in others. This is a very interesting area which is worth a thesis in itself, however I will only point out here that it is striking that split ergativity can also be conditioned by aspectual features, as well as other types of features (Dixon (1994)).

What I would like to argue for in the next section is that when an atelic meaning is derived through S-summing, HAVE is triggered. In a way, the D/P^0 in Kayne's proposal is actually the head of the aspectual projection that performs S-summing as described above. In Kayne's terms, this projection incorporates into BE, which will be realized as HAVE:

(16) …BE [$_{AspP}$ Spec Asp$_{S\text{-sum}}$ … [$_{vP}$ DP$_{SU}$ [V DP$_{OB}$]]]

…DP$_{SU/i}$ BE+Asp$_{S\text{-sum}}$ [$_{AspP}$ t$_i$ Asp$_{S\text{-sum}}$ …[$_{vP}$ t$_i$ [V DP$_{OB}$]]]

Of course this has to be stated in the current framework, which has quite different assumptions than Kayne. What we have is a verbal structure that is divided into three layers, INIT, PROC and RES, where INIT introduces the causing subevent and not the external argument .This is introduced in little *v*.

4.5. S-summing and Incorporation

As we saw with Tungseth's analysis, an aspectual phrase AspP is used to take care of the S-summing, rendering an atelic interpretation. This is only possible under the conditions discussed there, basically if it is possible to concatenate two events, where the endpoint of the first one is the starting point of the next.

I will argue for a specific implementation of the incorporation story of an element into BE to render HAVE in terms of their lexical entries. The lexical entry of HAVE differs with respect to BE in that it contains extra structure, specifically AspP which is responsible for S-summing. The auxiliary HAVE has a lexical entry consisting of a phonological form /hæv/, a conceptual meaning which is probably empty, and a structure or ordered set of features that it is the spellout of. The question is ofcourse what exactly this structure is, and what the order of the contained elements is. This second question is specifically important with respect to the relation of BE and HAVE. As we saw above, I will assume with Kayne (1993) that HAVE is a form of BE with an extra element. However, the implementation of this idea will be different. The first thing that has to be decided, and this relates to the question about the ordering of the structure, is if HAVE is a form of BE with an extra element, thus with more structure, where is this structure located. It can be either internal to BE or external to BE. So basically, abstracting away from what BE contains, these are the two options:

(17) Internal to BE: [BE [$_{AspP}$ Asp]]

(18) External to BE: [$_{AspP}$ Asp [BE]]

I argue that it is conceptually better to have the extra structure external to BE, so that the featureset of BE is a subset of the featureset of HAVE. We already saw that with respect to the relevant verbs, the extra structure contained in HAVE is AspP.

We also have to look at what features the two verbs share. First of all there is obviously an aspectual feature *perfect*, which I take to be represented in a head Asp$_{perf}$. This feature is clearly necessary to ensure the perfective interpretation that is associated with the auxiliaries HAVE and BE. The voice-head, which introduces the external argument, is also shared by HAVE and BE. Following Pylkkänen (1999), I will assume that the external argument is not introduced in the same head as the causing subevent, which I take to be introduced in INIT. Pylkkänen (1999) makes a typological distinction between languages in which the presence of INIT implies the presence of voice and languages in which INIT can do without voice. English and Dutch are of the former type, which is supported by the fact that these languages do not have caused unergatives. However, little *v* is not obligatorily present in either of the auxiliaries. We can have both HAVE and BE without little *v*:

(19) a.   De lamp heeft gebrand

    the lamp HAVE-3sg glowed

  b.   De vaas is gebroken

    the vase BE-3sg broken

It is clear that little *v* is not the crucial factor in HAVE-selection, though it is important.

  Different verb classes give rise to different structures, and thus different ways of spelling those out. Here is an overview of what different classes are relevant:

Unaccusative:

arrive: INIT, PROC, RES Aux:BE

break: PROC, RES   Aux: BE

Unergative:

walk: INIT, PROC   Aux: HAVE

glow: PROC   Aux: HAVE

Semelfactive:

jump$_{\text{telic}}$: INIT, PROC, RES Aux: BE

jump$_{\text{atelic}}$: INIT, PROC, RES Aux: HAVE

Degree Achievement:

grow$_{\text{telic}}$: PROC, RES   Aux: BE

grow$_{\text{atelic}}$: PROC, RES   Aux: HAVE (**marginally grammatical**)

grow$_{\text{atelic}}$: PROC, RES   Aux: BE

Directed motion:

ascend$_{\text{telic}}$: PROC, RES   Aux: BE

ascend$_{\text{atelic}}$: PROC, RES   Aux: HAVE

As discussed, I will assume that if there is an INIT, there will also be a little *v*. Let's assume that BE spells out little *v* (if present) and Asp$_{\text{perf}}$, and little *v* dominates Asp$_{\text{perf}}$:

(20) [$_{vP}$ [Asp$_{perf}$]]]

Let's start with unaccusatives like *break*. The intransitive *break* is telic and doesn't contain an INIT, so its structure will be:

(21) [$_{AspP}$ [PROC [RES]]]

The perfective AspP will be spelled out as BE. A different unaccusative that does contain an INIT is *arrive*. Still the auxiliary is BE, with basically the same structure as with *break*. The crucial thing to note is that it is never possible to S-sum events of this type, since they cannot be adjacent and still have the same participant: for something to break again after it has already broken, it must first somehow be put back into one piece.For the unergatives *walk* and *glow* HAVE arises by the same means as it arises in transitive verbs, in a way similar to Kayne's. Another way to go is to argue that here too minimal events get S-summed by Asp$_{s\text{-}sum}$ which causes the auxiliary to spell out HAVE. If however a directional PP is added to a sentence, for example *Jan is naar school gelopen* (*John has walked to school*), then S-summing is not possible since multiple events of walking to school cannot be adjacent.

The semelfactive verbs take HAVE under an atelic interpretation. I will assume that the aspectual S-summing head (Asp$_{s\text{-}sum}$) is responsible for this. I will assume that it is on top of the BE-structure, which gives:

(22) [$_{Asps\text{-}sumP}$ [$_{vP}$ [$_{AspperfP}$ [$_{INITP}$ [gesprongen [$_{PROCP}$ [<gesprongen> [$_{RESP}$ [<gesprongen> [$_{DP}$]]]]]]]]]]]]

In case the RESP doesn't specify a result state, the S-summing operation is not blocked and can be performed by merging Asp$_{s\text{-}sum}$P. The set of features that constitutes the top of the structure, namely Asp$_{s\text{-}sum}$, little *v*, the perfective head and INIT spell out HAVE. The same set without the S-summing head spells out BE.

For the degree achievements it is a little bit different. The verb spells out PROC and RES, no INIT. This means that there is also no *v*, as predicted by Pylkkänen (1999). Now for this set of

verbs, we have to assume that the operation of S-summing is (marginally) blocked and therefore spelling out HAVE with degree achievements is only marginally acceptable. Instead, to become atelic we will have to resort to some other kind of operation, higher up in the structure. How can we say that S-summing is blocked in these cases? There could be a problem when the S-summing operator tries to find the minimal events that it is going to sum. In case of a semelfactive verb like *jump*, this is easy since a single jump can easily be identified. However, this is not the case for *grow*, for example. Maybe a minimal event of growing cannot be identified since it is not clear what exactly constitutes this event; how much growth needs to have happened before we can speak of a growing event? I must stress that there is such a minimal growth required, since otherwise it would be the same as saying that the verb is atelic. So, without a clear event summable event the aspectual head that performs this operation is not able to merge, and therefore HAVE is not spelled out.

This way, I hope to have shown how an aspectual projection that performs S-summing is involved in a different choice of auxiliary. There remain a lot of things to be said, which have to be left for reasons of time and space. It will be very interesting to look into the connection with ergativity splits, which can also be conditioned by aspectual features like perfectivity or even telicity as well. It has already been argued that auxiliary selection reflects split ergativity (Cocchi (1996), Mahajan (1994)), in connection to splits based on person features. Unfortunately, this topic will be left unexplored here.

4.6. Conclusions

In this thesis, we have seen the behaviour of different classes of verbs with respect to perfective auxiliaries. Although it has become clear from facts in chapter two that it is not possible to tie the choice of auxiliary directly to aspectual features like telicity, it has also become clear that they are not completely independent. In this thesis I have tried to account for these facts. The second chapter was devoted to the arguments that are used against a connection between the two, and we have seen that they are not as convincing as has been thought. From this discussion a certain class of verbs, namely degree achievements, arised that is specifically problematic. However, I showed in chapter three that those verbs do show some relation with telicity. The verbs show ambiguous behaviour with respect to telicity, they allow both telic and atelic interpretations. Although it is

not generally possible for degree achievements to take HAVE, if they do they are strictly atelic. This pattern is then shown to arise in more cases: other verb classes that show the same aspectual ambiguity obey the generalization that HAVE implies an atelic interpretation. Only a set of semelfactives apparently violated this, but it might be possible to explain this by looking at the status of their cognate object more closely. A transitivity effect may be observed which could be held responsible for selecting HAVE even in telic cases.

In the last chapter we have seen an attempt to implement the idea of the generalization into a theory that divides the verb phrase into the three aspectual roles of initiator, process and result state, combined with the idea of an element that incorporates in the auxiliary BE that gives us HAVE. The extra element would in this case be an aspectual head that is responsible for S-summing, an operation that concatenates events that are adjacent on a time scale and have the same participants. This creates atelic events out of the more basic telic ones.

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