

A SEMANTIC PRINCIPLE OF AUXILIARY SELECTION IN DUTCH*

We propose that the choice between the auxiliaries *hebben* 'have' and *zijn* 'be' in Dutch is determined by a particular semantic feature of verbs. In particular we propose a feature of meaning [IEPS] for 'inferable eventual position or state' that characterizes whether the action denoted by the verb allows us to determine the eventual position or state of the verb's highest argument. It is argued that only verbs which exhibit the feature [+IEPS] or which obtain the feature compositionally in the syntax select *zijn* as their auxiliary. Our analysis is then compared to a number of other analyses of auxiliary selection in Dutch.

0. INTRODUCTION

It is a well known fact of many of the Germanic and Romance languages that a choice must be made between the auxiliaries BE and HAVE in the perfect verb form. Dutch is among these languages in having the two auxiliaries *zijn* and *hebben*, with most verbs choosing the latter auxiliary, and a relatively small number the former. The choice between these two auxiliaries is clearly not arbitrary, but there has been extensive discussion, even in recent literature, of exactly what sort of principle governs the choice. The purpose of this paper is to suggest that the principle of auxiliary selection for Dutch is essentially a semantic one, that is, a principle that should be stated at the level of conceptual structure (CS).

We will begin here with the assumption that an adequate grammar requires at least four sorts of representation. One is fundamentally semantic, the level that has been called conceptual structure by Jackendoff (1990) and others. A second sort of representation is that of pure syntax – hierarchically organized relationships among elements either above or below word level that depend on such notions as c-command, government, etc. Mediating between these two sorts of representation is often assumed to be another level of representation, that of argument structure (called in various frameworks Predicate Argument Structure or Functional Structure). We will remain agnostic on the exact nature of this level of representation and on the nature of the mapping principles between this level and

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syntax. The final level of representation is of course phonology, about which we will have nothing to say here.

It will be our contention that previous accounts of auxiliary selection in Dutch have been deficient in two respects. For the most part they have failed to consider the whole range of data which are relevant in auxiliary selection, concentrating rather on one area of the problem (e.g., various sorts of intransitive verbs). And further, they tend to have concentrated on what we consider to be the wrong level of representation; offering explanations of auxiliary selection at the level of argument structure or of pure syntax. In this paper, we will first survey the full range of data on auxiliary selection in Dutch with the help of data available through the CELEX lexical data base (Baayen, Piepenbrock and van Rijn 1993) and the Van Dale dictionary (Geerts and Heestermans 1995). We argue in this paper that the correct principle of auxiliary selection is a semantic one, focused at the level of CS. In order to maintain this claim, we first present a version of semantic decomposition which is based on and inspired by the work of Jackendoff (1983, 1987, 1990, 1991) and of Pinker (1989), but which also takes into account insights into the lexical semantics of verbs of Talmy (1985), Pustejovsky (1991), Tenny (1987, 1994), Verkuyl (1989), Levin and Rappaport Hovav (1995), and others, going beyond previous systems of semantic decomposition in a number of respects. After presenting our own analysis of auxiliary selection in Dutch, we compare it briefly to recent analyses of this phenomenon: Van Valin (1990), Zaenen (1993), Ackema (1995), Kayne (1993), Borer (1993), Hoekstra (1984), and Den Dikken (1994).

1. DATA

Dutch verbs can be divided into three basic categories: those that take only the auxiliary *zijn* in the present perfect, those that take either *zijn* or *hebben*, and those (the vast majority of Dutch verbs) that take only *hebben*. We will start here with simplex verbs, and later on extend the analysis to verbs with certain prefixes and particles. (1) gives a selection of simplex verbs which take *zijn* as their auxiliary in the present perfect; a fairly exhaustive list is provided in Appendix A:

(1) Examples of *zijn* verbs:

- a. change of place verbs

vluchten	'flee'
gaan	'go'
komen	'come'
dalen	'descend'
arriveren	'arrive'

- b. change of state verbs:
- | | |
|------------|-----------|
| barsten | 'crack' |
| blijken | 'appear' |
| groeien | 'grow' |
| sterven | 'die' |
| exploderen | 'explode' |

These verbs tend to be either classical unaccusatives (e.g., *arriveren* 'arrive', *dalen* 'descend') or inchoatives (*barsten* 'crack', *sterven* 'die'), that is, two sorts of intransitive verbs.¹ The other intransitive verbs, those which have been referred to in the literature as 'unergatives', take *hebben* as their auxiliary, as do the majority of transitive verbs in Dutch. (2) contains a representative sample of these verbs:

- (2) Examples of *hebben* verbs:
- a. unergatives:
- | | |
|---------|----------|
| geeuwen | 'yawn' |
| niezen | 'sneeze' |
| slapen | 'sleep' |
- b. transitives:
- | | |
|----------|-----------|
| zetten | 'put' |
| bouwen | 'build' |
| kussen | 'kiss' |
| lezen | 'read' |
| hebben | 'have' |
| bezitten | 'possess' |

Finally, there is a class of verbs that may either take *zijn* or *hebben*. These verbs fall into three subclasses. Many of them are intransitive (unergative) verbs which express a manner of motion. In their ordinary use, they take *hebben*. However, if in the context of a sentence a specific path of motion is added, they take *zijn* as their auxiliary. Some examples are given in (3a). There are also a few transitives that take either *hebben* or *zijn*, which are listed in (3b) (e.g., *De politie is de dief tot zijn huis gevolgd* 'The police have followed the thief to his house'). Finally, there is a group of verbs which alternate between inchoative and causative readings; when inchoative they take *zijn* and when causative, *hebben*. A selection of these is given in (3c). A nearly exhaustive (to our knowledge) listing of simplex

¹ Levin and Rappaport Hovav (1995) in fact treat inchoatives as part of the class of unaccusatives, and it is clear that syntactically and with respect to the relevant diagnostics this is correct. We continue to distinguish them here, as we will have something to say about what unites these sorts of verbs semantically, at least in Dutch.

verbs which vary between the two auxiliaries can be found in Appendix A.

- (3) Examples of *hebben/zijn* verbs
- a. Unergatives (manner of motion):

lopen	'walk'
fietsen	'bicycle'
wandelen	'walk, ramble'
 - b. Transitives:

volgen	'follow'
passeren	'pass'
naderen	'approach'
 - c. Inchoative/Causative alternants:

breken	'break'
genezen	'heal'
devalueren	'devalue'

2. OUR ANALYSIS

2.1. Theoretical Preliminaries

As our proposal about auxiliary selection in Dutch will be basically a lexical semantic one, we must first set forth our assumptions about the representation of lexical semantics. The point of departure of our analysis is the system of semantic decomposition developed by Jackendoff (1983, 1987, 1990, 1991), in which verbal meanings are broken down into a hierarchically organized frame of semantic primitives that include: GO, BE, ORIENT, INCH CAUSE, and perhaps others. INCH stands for 'inchoative' and is usually paired with BE by Jackendoff to mean 'come to be'. We will have more to say about the semantic function CAUSE immediately below, as our analysis depends in part on the reinterpretation of this function suggested in Lieber (1997). Arguments of semantic functions can be specified as Paths, Places, Properties, or Things. Within Jackendoff's framework, thematic relations such as Theme, Agent, Goal, and the like have no independent existence; rather, they are convenient labels for arguments of particular semantic functions, Agent the first argument of CAUSE, Theme of GO or BE, Goal of the path function TO, and so on. Semantic functions are typically hierarchically organized. For example, in the lexical conceptual structure (LCS) in (4), the most deeply

embedded semantic function is BE, with its Thing and Place arguments. Above it is the INCH function, and uppermost is the function CAUSE, with its Thing argument:

- (4) (from Jackendoff 1990) LCS for *attach*
 $[_{Event} CAUSE ([_{Thing}], [_{Even} INCH [_{State} BE ([_{Thing}], [_{Place}])])]$

Thus far, we follow Jackendoff. However, the analysis that we present in Section 2.2 requires a number of refinements to this system of semantic decomposition. The first refinement requires us to look more closely at the notion of causation. In order to tease out certain nuances of causation (which will be of importance to us as well), Jackendoff (1990) distinguishes two separate tiers in LCS. The thematic tier represents semantic characteristics having to do with motion, direction, and location. On it we find the functions GO (for motion verbs) and BE (for stative verbs), as well as the functions INCH (become), and possibly such functions as ORIENT and HAVE (see Jackendoff 1990, p. 92). In addition, Jackendoff places on this tier the function CAUSE, whose highest argument is interpreted as Agent. However, Jackendoff points out that the function CAUSE is not sufficient by itself to characterize all nuances in verbal meaning concerning causation and agentivity. The nuances that must be distinguished include 'extrinsic agency', as in *The wind rolled the ball down the hill*, 'volitional actor', as in *Daisy deliberately rolled the ball down the hill*, and 'involuntary actor', as in *Morgan accidentally rolled the ball down the hill*. To deal with these notions, Jackendoff postulates a second tier which he calls the 'action tier'. This tier consists of the semantic primitive AFF (affect), whose first argument is interpreted as Actor. If the first argument of CAUSE is not associated with the first argument of AFF, we derive the interpretation of extrinsic agency. If the first argument of CAUSE is associated with the first argument of AFF, that argument is interpreted as an active agent. Whether the active agent is interpreted as volitional or not depends upon a further feature marking [\pm volitional] with which the Actor argument can be annotated.

In Lieber (1997) it is argued that two factors suggest that an alternative analysis of causation would be preferable. First, Jackendoff pays little attention to those verbs which denote pure action without motion or change of state (e.g., *yawn*, *kiss*...); as this group of verbs will be of some importance in our discussion of auxiliary selection, we must have some way of characterizing their LCSs. Second, the two-tier representation of LCS seems in some respects to be redundant. In particular, Jackendoff's account uses an extra tier to express those CAUSE arguments

which express only extrinsic agency and hence are not paired with the argument of AFF from those that express unintentional agency and therefore are paired with a [−volitional] first argument of AFF. Lieber (1997) suggests that these cases can be distinguished merely on the basis of the feature [±animate], which is surely needed in any case. She argues that the action tier can be dispensed with entirely; instead extrinsic agents will be marked as [−animate, −volitional], involuntary actors as [+animate, −volitional], and voluntary actors as [+animate, +volitional].

Instead of the Action tier with the semantic function AFF, Lieber (1997) proposes to make use of some notation suggested in Pinker (1989). While Pinker decomposes verbs in much the same way that Jackendoff does, he pays more attention to what we have called pure action verbs (*yawn*, *kiss*, etc.). He suggests the semantic function ACT for such verbs.

- (5)a. *yawn* [_{Event} ACT ([_{Thing}])[_{Manner} 'yawning']]
 b. *kiss* [_{Event} ACT ([_{Thing}], [_{Thing}])[_{Manner} 'kissing']]

In addition, the function ACT can be used to subordinate another Event function, in which case it takes the place of Jackendoff's CAUSE function.²

- (6) *break* [_{Event} ACT ([_{Thing}], [_{Event} GO ([_{Thing}],
[_{Property} 'broken'])))]

The use of the ACT function is quite consistent with Levin and Rappaport Hovav's (1995, p. 135) Immediate Cause Linking Rule, which treats the external cause in causatives and the internal cause in activity verbs in the same way. ACT is a semantic function, then, which can have a variable number of arguments: one Thing argument (*yawn*), two Thing arguments (*kiss*), or a Thing argument and an Event argument (*break*).

Pinker goes on to partially decompose semantic functions such as ACT, GO, BE, etc., in terms of two features, [\pm dynamic] and [\pm control] (1989, pp. 194–195):

In the unmarked case, ACT, like GO, will be an EVENT, though as we shall see it can be extended to STATEs as well. Another unmarked conflation will be that the first argument

² It is implied in this analysis of causation that if the only function in the LCS is ACT, as would be the case for verbs like *yawn* or *kiss*, then the highest argument is a noncausative actor; causation requires subordination of other semantic functions. Further, we assume that a single argument of a GO verb is a theme or patient, making no distinction between the two. Although it is certainly an important and interesting question whether or how to make this distinction in an LCS, as nothing important hinges upon this in what follows, we will leave the question to further research.

of ACT has the property 'animate' or 'human'. Since this is also an unmarked convention for HAVE, we have an intuitive basis for a feature set for the four kinds of predicates expanding conceptual constituents, allowing natural subsets to be expressed by specifying the value of one of the features. Say one feature picks out whether the unmarked kind of constituent type in which the predicate is found is an EVENT or a STATE, the feature could be $\langle \pm \text{dynamic} \rangle$. Say the other feature picks out whether in the unmarked case the first argument of the predicate is human and in control of the event/state; the feature could be $\langle \pm \text{control} \rangle$. GO and ACT are canonically EVENTS, HAVE and BE are canonically STATES. The first argument of ACT and HAVE canonically are humans that control the action or possession; the first arguments of GO and BE are canonically dimensionless, will-less points.

Adopting this sort of feature decomposition allows Pinker to talk about natural classes of semantic functions. We will adopt here the idea that each semantic function can be decomposed into a number of features, although we will propose a number of refinements to the two-feature system that Pinker suggests.

First, we will substitute the feature $[\pm \text{volitional}]$ for Pinker's $[\pm \text{control}]$; this is a terminological substitution rather than a substantive change. Verbs which are $[\text{+volitional}]$ for us will be those under the voluntary control of the subject; they correspond to Pinker's $[\text{+control}]$ verbs. Similarly, $[\text{−volitional}]$ verbs will correspond to Pinker's $[\text{−control}]$.³ We will continue to use the feature $[\pm \text{dynamic}]$ in the way that Pinker suggests; Events are $[\text{+dynamic}]$, States $[\text{−dynamic}]$. Thus, in terms of Jackendoff's semantic primitives, the functions GO, INCH and ACT are $[\text{+dynamic}]$, and BE, ORIENT, and HAVE $[\text{−dynamic}]$.⁴

In addition to Pinker's features, we need to focus on two other facets of verbal semantics. With the first we would like to capture the idea that for some verbs it is possible to make an inference about the eventual position or state of the highest argument of the verb. For example, with a verb like *komen*, we can infer that the highest argument in the LCS, the theme, moves along a path and ends up closer to the speaker. Similarly with verbs like *vluchten* 'flee', *rijzen* 'rise', and *emigreren* 'emigrate', it is possible to infer where the highest argument will be with respect to its starting point (away, up, in a foreign country, respectively). Contrast these verbs with so-called 'manner of motion' verbs (Talmy 1985), which do not allow any inference as to the eventual position of their highest argument. For example, the verb *lopen* 'walk' by itself implies nothing about the eventual position of its highest argument, the theme; the theme

³ There are some verbs which might need to be left unmarked for the feature $[\text{volitional}]$, for example, *roll*. As volitionality is a feature which will in fact play little or no role in the analysis of auxiliary selection that follows, we simply note it here for the sake of completeness.

⁴ Jackendoff himself proposes a similar featural system in subsequent work (1991, p. 31), using the feature $[\text{+directed}]$ for events and $[\text{−directed}]$ for states.

may end up anywhere, including where it started (although addition of adjuncts to the verb may change this, as we will see below). For this aspect of verbal semantics we will propose a feature, which we will call [IEPS] for Inferable Eventual Position or State.

Let us now make this informal definition of the feature [IEPS] more precise. What is crucial in the application of the feature is that for any given [+IEPS] verb we be able to conceive of two points of time T_1 and T_2 , and that at the end of T_2 we be able to infer something about the position or state of the highest argument (for *come*, a position closer to a point of reference; for *grow*, a state larger than the original; and so on). Moreover, at any point T_n between T_1 and T_2 some progression will have taken place towards that eventual position or state; the progression towards this position or state is in fact uniform, rather than intermittent. This requirement ensures that verbs like *zigzaggen* 'zigzag' will not by themselves (i.e., without the addition of a directional phrase) be [+IEPS], although 'zigzagging' might seem to be a sort of path, it is an erratic or intermittent one. Without the addition of a clear directional phrase it is impossible to infer the eventual position or state of the highest argument of such verbs. This definition also ensures that whole classes of verbs will never bear the feature [+IEPS], among them stative verbs such as *know*, which will never be specified for the feature, and iterative verbs such as *flash*, which will always be [-IEPS]. Note further that the highest argument whose position or state is inferable need not be the theme. With a transitive verb like *naderen* 'approach' it is the eventual position of the agent that is inferable; such a verb will be [+IEPS] as well.⁵ Thus, we intend for the feature [IEPS] to generalize over both change of position and change of state verbs and to be useful for both transitive and intransitive verbs.

Given this definition, we can immediately distinguish three distinct classes of verbs for which the [IEPS] feature is relevant. First, there are verbs like *komen* 'come', *rijzen* 'rise', *vluchten* 'flee', and *immigreren* 'immigrate' which are intrinsically [+IEPS] verbs. The category of [+IEPS] verbs also includes inchoatives such as *groeien* 'grow' or *barsten* 'crack', where what is at stake is the eventual state of the highest argument rather than its literal position: 'to grow' implies an eventual state of being

⁵ As a reviewer points out, in Jackendoff's terms our [+IEPS] verbs include those whose highest arguments are either themes or nonagentive actors. The term 'agent' for Jackendoff is restricted to the argument of a CAUSE function.

larger, 'to crack' the eventual state of existence of the crack. Second, there are verbs with a causative element of meaning which are intrinsically [-IEPS]. Finally, there are activity verbs like *lopen* 'walk' and *dansen* 'dance' which are intrinsically unmarked for the feature [IEPS]. We will make clearer below why the second and third classes are distinguished by the minus value of the feature versus underspecification of the feature.

Two questions arise with respect to the feature [IEPS]. First, we might ask whether the feature [IEPS] is anything more than a descriptive feature. We freely admit that at this point the feature [IEPS] is primarily descriptive; in fact, it is descriptive in exactly the same way that features like [telic], [volitional], and [dynamic] are. Nevertheless, we propose in fact that [IEPS] be considered a new semantic primitive, and it might therefore be useful to contemplate what counts as justification for such a proposal. Consider Jackendoff's (1991, p. 12) remarks on this subject:

When one claims that conceptual structure can be described in terms of primitives and principles of combination, and in particular that lexical items can be conceptually decomposed into primitives, the question arises of how one justifies primitives. This question in turn falls into two parts. The first is how to tell in general whether one putative primitive is better than another. In fact, an isolated primitive can never be justified: a primitive makes sense only in the context of the overall system of primitives in which it is embedded. With this proviso, however, I think a particular choice of primitives should be justified on the grounds of its capacity for expressing generalizations and explaining the distribution of the data.

In justification of the feature [IEPS] we might note a number of points. First, [IEPS] is a semantic feature which is intended to generalize across change of place and change of state verbs (in Jackendoff's terms GO and INCH verbs), and as such is relatively unobvious. Although a number of researchers have discussed nuances of verbal semantics that hint at the distinction we have in mind (cf. note 7), it appears that this commonality across classes of verbs has not been widely noted or exploited before. As we will argue in detail below, the fact that the distinction we have in mind can be exploited to solve the long-standing problem of auxiliary selection in Dutch, in other words, that auxiliary selection in Dutch is sensitive to this feature, should count as a strong point in its favor. Moreover, as will be discussed in more detail below, the difference between [+IEPS] and [-IEPS] is overtly expressed not only in the VP (by means of auxiliaries), but also in the PP (by means of the distinction between prepositions and postpositions).

Next, it is certainly relevant to ask at this point whether the feature that we are calling [IEPS] is one which is significant in the semantics and syntax of languages other than Dutch. Although it is beyond the scope of

the present study to explore the universality of this feature of lexical semantics, we would expect it to be of universal relevance. For example, it seems that the feature [+IEPS] can be used to characterize just those monadic verbs in various languages that Levin and Rappaport Hovav (1995) class as syntactically unaccusative. For them, two separate linking rules are needed for syntactically unaccusative verbs, the Directed Change Linking Rule (for verbs like *come*, *go*, *arrive*, *break*, *open*), and the Existence Linking Rule (for verbs such as *remain*, *happen*). For all of these, as we will show below, the feature [+IEPS] will be part of the verbal LCS. If this is true, then Levin and Rappaport Hovav's two linking rules could potentially be reduced to one by making linking refer to the presence of an inherent [+IEPS] feature in the verbal LCS. Note, however, that for us, the feature [+IEPS] will not be synonymous with unaccusativity. That is, although all syntactically unaccusative verbs will be [+IEPS], there will be predicates that are [+IEPS] that will not be syntactically unaccusative (i.e., having only internal arguments). This will be clarified below.

In addition, it seems likely that there are other syntactic/semantic elements in both English and Dutch that make reference to this feature. At least for change of place verbs, adverb selection seems to be sensitive to the value of the feature [IEPS]. The adverb *around* in English or *rond* in Dutch (in the sense of aimless movement, rather than directed movement in a circle) can be used only with change of place verbs which are [-IEPS] ((7c,d) are Dutch translations of (7a,b));

- (7)a. We walked/danced/floated/wandered around.
- b. *We fell/descended/emigrated/approached/fled around.
- c. Wij wandelden/dansten/dreven/doolden rond.
- d. *Wij vielen/daalden/emigreerden/naderden/vluchtten rond.

Adverb selection is notoriously dependent on nuances of verb class (cf Tenny 1994), so this test cannot be extended to change of state verbs. However, iterative change of state verbs such as *flakkeren* 'flicker', a verb denoting unpredictable changes in luminosity, require *HAVE* as auxiliary. Verbs of undirected change of state, like verbs of undirected change of place, are [-IEPS]. We would expect, moreover, that with further study, additional syntactic or semantic characteristics of sentences in Dutch and other languages will prove to be sensitive to the [IEPS] feature.

Another point that we must clarify at the outset is the relationship between the notion of telicity, which has been widely discussed in the literature on lexical semantics, and our feature [IEPS]. Comrie (1976, p.

45) defines telicity as follows. "Thus a telic situation is one that involves a process that leads up to a well-defined terminal point, beyond which the process cannot continue." Following Verkuyl (1972, 1989), we will assume that telicity is not an inherent feature of verbal meaning, but rather that it is determined compositionally on the basis of the meaning of the verb plus the quantificational characteristics of the arguments of the verb. Verkuyl makes a distinction which he calls [\pm ADD TO] that corresponds to our [dynamic] feature; a verb which is [+ADD TO] is "interpreted as a semantic predicate assigned lexically to verbs expressing change, a going through time of entities involved in the predication" (1989, p. 81). His second feature [\pm SQA] (for Specified Quantity of A) is a feature borne by NPs whose value is determined by the quantificational characteristics of the NPs. Only [+ADD TO] verbs (in our terms those which are [+dynamic]) can be telic, and all NP arguments of the verb must be [+SQA] in order for a verb to receive a telic interpretation. (8) gives some examples from Verkuyl (1989, p. 79) which illustrate the interplay between the telicity of the predicate and the quantificational characteristics of its arguments ((8a) indicates that both arguments must be definite in order for a telic interpretation to obtain):

- (8)a. She played that sonata. (telic)
- b. She played sonatas. (atelic)
- c. Soldiers played that sonata. (atelic)

Exactly what the quantificational characteristics of NPs are that force or block telicity is not of prime importance here. What is relevant for our purpose is the idea that telicity is not an inherent characteristic of the verb, but rather is determined compositionally. Because telicity is not an inherent component of verbal meaning on our account, we need not represent it in LCSs with a feature. However, it is rather convenient to refer to predicates as ultimately being [+telic] or [-telic], and we will continue to do so where relevant.

It is important to argue at this point that telicity and [IEPS] are semantic features which are in fact quite independent of one another. Normally if a verb is [+IEPS], we might expect it (given the appropriate arguments) to be telic. That is, if an inference can be made about the eventual position of the highest argument (somewhere other than the starting position, away, down), we would expect that position or endpoint to be reached. Such is generally the case with a verb like *arriveren* 'arrive'. But this is not always true. With verbs like *vluchten* 'flee', *dalen* 'descend', and

groeien 'grow', it is possible to infer the eventual position of the highest argument (away, down), yet the endpoint need not be reached (e.g., *Urenlang vluchtte hij door het bos* 'For hours he fled through the woods.').⁶ These verbs, in other words, may be atelic. Similarly, while [-IEPS] tends to correlate with atelicity (*Urenlang liep hij door het bos* 'For hours he walked through the woods'), this is also not always the case. Verbs like *geeuwen* 'yawn' are clearly telic (the only possible reading for *Urenlang heeft hij gegeeuwd* 'For hours he has yawned.' is iterative). Thus, the fact that a verb is telic does not necessarily imply that there is an implied eventual position or state, and the fact that there is an implied eventual position or state does not necessarily mean that that position or state is reached. We therefore conclude that although there is some correlation between the feature [+IEPS] and telicity, they are not the same thing.

The feature system described above allows us to cross-classify verbs in interesting ways. Let us first note that certain combinations of features are logically ruled out. Thus [-dynamic] verbs are not marked for the feature [IEPS]: that is, verbs which are stative cannot have any sort of implied *eventual* position or state. Only Event verbs may be distinguished by the feature [IEPS]. Second, our cross-classification can be compared to the notion of Aktionsart as developed in Vendler (1967) and Dowty (1979), although we believe that it provides a more sensitive characterization of verbal semantics than is available through Aktionsart. Roughly, the correspondence is as follows: States correspond to [-dynamic] verbs, Activities to [+dynamic, ØIEPS] verbs, and Achievements and Accomplishments to [+dynamic, +IEPS] verbs.

The various logically possible combinations of features give us the possibilities illustrated in Table 1.

Let us stress at this point that we still share with Jackendoff the assumption that the meanings of verbs are composed of hierarchically ordered layers of semantic primitives. For example, to accommodate causative/inchoative pairs like the verb *break* in English, we will assume that the features for ACT verbs optionally form an outer layer on the features of the inchoative verb. Thus if *break* in its inchoative sense is [+dynamic, +IEPS], when it is used causatively it has the optional outer layer of features represented in (9):

⁶ It is a well known test for telicity to add an adverbial phrase which denotes duration. If the resulting sentence has a durative reading, the verb is atelic. If the resulting sentence can only be interpreted with an iterative reading, the verb is telic.

- (9) *break* (causative)
 [+dynamic ([_{Thing}], [_{Event} + dynamic ([_{Thing}]),
 -IEPS +IEPS
 TO[_{Property} 'broken'])]

The features of the outermost layer of features (corresponding to the outermost semantic function in Jackendoff's terms) determine the syntactic and semantic behavior of the verb. This is entirely in line with Jackendoff's own use of semantic features such as [bounded] and [individual] (1991, p. 21).

We turn now to one final assumption that we need to unpack before we proceed to our analysis, namely that unmarked features are filled in by default. We will assume in particular that the unmarked value for the feature [\pm IEPS] is [-IEPS], and that in the case that this feature is underspecified, the minus value can be filled in. Assuming underspecification will allow us to account formally for a number of observations about verbal semantics that have been made in the literature to the effect that certain semantic characteristics of predicates are determined compositionally. As mentioned above, it has frequently been noted (see especially Verkuyl 1972, 1989 and Tenny 1987, 1994) that [+dynamic] verbs can often be made telic by the addition of argument NPs which display particular quantificational properties. For example, the addition of a definite direct object to *play*, which is normally atelic (*They played for an hour*), may result in a telic event (*She played the sonata*). Thus, if telicity is underspecified on verbs to begin with, it can be determined by the aspectual properties of the predicate or the sentence as a whole. Similarly, the inferability of eventual position or state (IEPS) may sometimes also be determined compositionally. This will prove to be of importance below, where we will see that the addition of a directional phrase can sometimes turn a verb like *lopen* 'walk' which belongs to the underspecified class into a [+IEPS] verb.

2.2. A Semantic Principle for Auxiliary Selection

Making use of these ideas, we will argue here that the choice between the auxiliaries *zijn* and *hebben* in Dutch is not fundamentally based on the unaccusative/unergative distinction, but rather on a more abstract semantic distinction: only verbs which are [+dynamic, +IEPS] in terms of their lexical semantics take *zijn* as auxiliary.⁷ All other verbs take the auxiliary

⁷ It has been brought to our attention that our proposal is foreshadowed in an earlier study of Dutch syntax, that of DeVoys (1957). DeVoys uses the notation of 'mutative aspect'

hebben. Among the verbs which are [+dynamic, +IEPS] are the unaccusatives (e.g., *arriveren* 'arrive') and inchoatives such as *barsten* 'crack' and *botten* 'bud'. However, also among these verbs are those which are transitive, but nevertheless may have the implication of eventual position of the highest argument (e.g., *volgen* 'follow') and those which are normally unergative, but which can occur in syntactic collocation with a directional phrase which adds a clearly implied eventual position or state. We will discuss each of these cases in turn, as well as the case of main verb *zijn*. After an initial discussion of simplex verbs, we will go on to show how the semantic principle of auxiliary selection that we propose can also account for auxiliary selection in Dutch verbs formed with prefixes and certain particles.

2.2.1. Simplex Verbs

Unaccusatives and Inchoatives

Many of the classical unaccusatives (e.g., *arriveren* 'arrive', *komen* 'come', *dalen* 'descend', *vallen* 'fall') are verbs of directed motion, analyzed in Jackendovian terms as having the semantic function GO as their uppermost function, with a Path function embedded lower down. Significantly for us, they are all verbs in which the eventual position of the theme can be inferred from the verb itself. Translated into our terms, the uppermost semantic function bears the features [+dynamic, +IEPS]. The LCSs for the verbs *arriveren* 'arrive' and *dalen* 'descend' are given in (10).

- (10)a. *arriveren* 'arrive'
 [+dynamic ([Thing], [Path TO ([Place])])]
 +IEPS

to explain auxiliary selection in Dutch. Attributing the term to J. H. Kern, he says (1957, p. 140): "... bij werkwoorden die de overgang van de een toestand in de andere aanduiden ... of een bereikt eindpunt ('perfektieven') gebruikt men ZIJN ..." [... with verbs which denote the transition from one condition to another ... or an attained endpoint, one uses BE ...].

Another study which hints at the solution which we propose is Honselaar (1987). Honselaar proposes the notion of VERANDERING IN SUBJECT 'change in subject' to account for the choice between *hebben* and *zijn*. Verbs which take *zijn* exhibit 'change in subject': verbs which take *hebben* do not. Unfortunately, it is not clear to us what Honselaar means by 'change in subject', or how a subject is more changed in *Ik ben naar Amsterdam gelopen* 'I walked to Amsterdam' than in *Ik heb gelopen* 'I walked'. In other words, whatever semantic distinction Honselaar is getting at, 'change of subject' is not a helpful term. What is interesting about this work, however, is that Honselaar points out some conditions under which *zijn* can be used for verbs which normally take *hebben* and vice versa, and hints at the distinctions between pure activity readings and directed change readings that we go into below.

- b. *dalen* 'descend'
 [+dynamic ([Thing], [Path DOWN])]
 +IEPS

Also classed among the unaccusatives is the verb *blijven* 'stay, remain', which provides an interesting illustration of a difference between the featural system proposed here for semantic decomposition and the system of semantic functions developed by Jackendoff. Most of the unaccusatives commonly discussed are verbs of directed motion, GO verbs for Jackendoff, but not *blijven*. *Blijven* in fact implies the opposite of directed motion, and thus Jackendoff classes it as an eventive verb characterized by a distinct primitive STAY (1990, p. 44). Crucially, *stay* is not a verb predicating location. The use of *stay* implies the negation of the prior presupposition of expected change of place or change of state. (In Dutch, unlike English, *blijven* also applies to events involving a change of state, as in *Het kopje viel, maar het bleef heel* 'The cup fell, but it stayed whole.' Thus *blijven* is the general inverse semantic function for all change of place and state verbs in Dutch.) In the words of the *Collins Cobuild English Dictionary* (Sinclair 1995, s.v.), "If you stay where you are, you continue to be there and do not leave." Unlike verbs predicating pure location, *blijven* invites a non-trivial inference about the eventual state or location of its highest argument, namely wherever it started. Just as the other unaccusatives (the GO verbs in Jackendoff's terms), *blijven* is clearly [+IEPS] on our account and therefore takes *zijn* as its auxiliary. What this suggests is that the refinements to semantic decomposition that we have suggested here are not merely notational variations on Jackendoff's system, but in fact allow generalizations across classes that are not available in the latter system.

Inchoative verbs work much the same way as unaccusatives. In fact, in the literature on auxiliary selection they are typically not distinguished from unaccusatives. For us, as with the unaccusatives their uppermost semantic predicate will be [+dynamic, +IEPS]; we thus treat Jackendoff's semantic functions GO and INCH in the same way here although inchoatives will differ from the unaccusatives in having an embedded stative predicate. Note that giving the semantic functions GO and INCH the same feature [+IEPS] does not commit us to saying that GO and INCH are the same semantic function; it merely commits us to the claim, which we believe is correct, that at some level of abstraction GO and INCH share the characteristic of inferability of eventual position or state. (11) gives the LCS we assume for the inchoative verb *breken* 'break'.

- (11) *breken* 'break'
 [Event + dynamic ([Thing], TO [Property 'broken'])]
 + IEPS

These two cases form the core of the verbs in Dutch which take the auxiliary *zijn*. If they were the only verbs to take *zijn* our analysis would be in effect no different from those (see below) which take unaccusativity as the major determinant in auxiliary selection (and which treat inchoatives as unaccusatives). However, as we will see shortly, the unaccusatives are not the only verbs which take *zijn* as their auxiliary. Our strongest justifications for considering the principle of auxiliary selection to be based on the features [+dynamic, +IEPS] are *therefore yet to come*.

Unergatives and Transitives

Before we discuss the cases that argue most strongly in favor of the semantic principle of auxiliary selection under discussion here, we will briefly set out the LCSs for some of the verbs which classically take *hebben* as their auxiliary. Among these are the intransitive verbs that are often referred to in the literature as 'unergatives' and the vast majority of transitive verbs including causatives. (12) contains the LCS for a typical unergative verb, *lopen* 'walk', (13) for a typical transitive verb, *kussen* 'kiss', (14) for a ditransitive verb, *zetten* 'put', and (15) for the causative variant of an inchoative verb, *breken* 'break'

- (12) *lopen* 'walk'
 [+dynamic ([Thing], [Path]), [Manner walking]]
 ∅ IEPS
- (13) *kussen* 'kiss'
 [+dynamic ([Thing], [Thing, Person]), [Manner kissing]]
 -IEPS
- (14) *zetten* 'put'
 [+dynamic ([Thing], [+dynamic ([Thing],
 -IEPS +IEPS
 [Path TO[Place IN/ON ([Thing])]])]]]
- (15) *breken* (caus.) 'break'
 [+dynamic ([Thing], [Event + dynamic ([Thing],
 -IEPS + IEPS
 TO [Property 'broken'])]]]

The first thing that should be apparent from the LCS in (12) is that we

treat the verb *lopen* 'walk' basically as an activity verb with the manner of motion embedded as the shorthand 'walking' (perhaps to be realized in more detail as 'move on foot', or some such thing). Since this verb is one in which the eventual position of the highest argument, the theme, cannot be inferred, it is treated in our framework as [+dynamic, \emptyset IEPS]; if nothing is added to give a positive value to the [IEPS] feature (see below), [-IEPS] is filled in by default, and the verb chooses *hebben* as its auxiliary. Of course, it may seem strange to class verbs like *lopen* 'walk' or *dansen* 'dance' as unmarked for [IEPS]; after all, one might wonder if there is any circumstance in which such verbs could get the [+IEPS] feature. Nevertheless, we would argue that this is exactly the correct designation for such verbs. In fact, the addition of the postposition *in* to the verb *dansen* adds a component of inferable state, and further conditions the choice of *zijn* for this verb (*Ik ben de kamer in gedansd* 'I danced into the room.'). We will have more to say about the mechanisms of compositionality for verbs of this sort below. The transitive *kussen* 'kiss' in (13) is treated with one small difference. It is basically an activity verb which has two arguments and a manner component encoding in a yet to be specified way the nuances of the kissing action. But unlike *lopen* or *dansen* it is not possible for a directional phrase to change its [IEPS] feature, so we have specified it as [+dynamic, -IEPS]. As a [-IEPS] verb, it chooses *hebben*. Note finally that the same story applies to transitive verbs such as *wassen* 'wash' and *vangen* 'catch'. Although the eventual position or state of a lower argument may be inferable, this is not the case for the highest argument of such verbs, and the verbs therefore select *hebben*.

In (14) we see the LCS for the verb *zetten* 'put' which takes two internal arguments. Here the outermost layer of its LCS is [+dynamic, -IEPS], in Jackendovian terms the predicate CAUSE. The next function in the hierarchy is [+dynamic, +IEPS], our equivalent of Jackendoff's GO. Again, it is the features of the highest semantic predicate that determine auxiliary selection. Thus, although the eventual position/state of the theme argument may be inferred, this is not the case with the highest argument, the agent. Therefore, the verb *zetten* and all other verbs with a causative ACT function as their outermost layer select *hebben* as their auxiliary. Similarly, in (15) we see the causative variant of the verb *breken* 'break' whose inchoative LCS is illustrated in (11). In the causative variant the INCH-BE semantic functions become subordinate to the ACT function, which in our terms is [+dynamic, -IEPS]. These verbs then will also select *hebben* as their auxiliary.

Also included among the verbs which select *hebben* as their auxiliary are verbs of extension such as *bereiken* 'reach' and *omringen* 'surround', and verbs of orientation such as *wijzen* 'point' (*De windwijzer heeft naar het noorden gewezen* 'The weather vane pointed north.'). Such verbs are stative and therefore [-dynamic] in our system; as such they do not bear the feature [IEPS] (see above). The choice of *hebben* as the auxiliary is therefore exactly as expected. Note that even a verb which is normally classed as a verb of motion (*volgen* 'follow' – see below) must be used with *hebben* in its extensional sense: *De weg heeft de rivier gevolgd* 'The road followed the river'.⁸

Finally, among the simplex verbs which take *hebben* are the psych verbs, for example, *walgen* 'disgust', *kwellen* 'annoy', *imponeren* 'awe', and *houden van* 'love'. Note that this constitutes a problem for those analyses (e.g., Belletti and Rizzi 1988) which seek to treat psych verbs as unaccusatives with two internal arguments. In an account in which all and only unaccusatives take *zijn*, if psych verbs in Dutch were treated as unaccusative, we would expect them to take *zijn* as their auxiliary. The fact that they do not suggests that simplex psych verbs pattern syntactically with ordinary transitive verbs, at least in Dutch.⁹

Unergatives with Directional Phrases

It has frequently been noted in the literature on auxiliary selection in Dutch (Hoekstra 1984, Zaenen 1993, Borer 1993, Ackema 1995, among others) that unergative verbs like *lopen* 'walk' which normally take the auxiliary *hebben* can be used with *zijn* just in case a directional phrase is added:

- (16)a. Jan heeft gelopen.
 John has walked

⁸ When verbs like *wijzen* 'point' are used inchoatively, they require the use of an additional auxiliary *gaan* 'go', which, as expected, conditions the appearance of the auxiliary *zijn* rather than *hebben* (*De windwijzer is naar het noorden gaan wijzen* 'The weather vane began to point north').

⁹ A reviewer has pointed out to us that there are other psych verbs, for example *bekomen* 'agree with', *bevallen* 'please', *bijblijven* 'stick in one's memory', *ontgaan* 'escape, elude', etc., that take *zijn* rather than *hebben*. None of these verbs, however, is a simplex verb, and all of them contain a stem which would otherwise select *zijn* as its auxiliary. Some, in addition, contain a prefix or particle which would also condition the selection of *zijn* (see below). For these, we would have to say that the [+IEPS] feature of the verbal stem has been lexicalized for the verb as a whole; that is, although the verbal meaning may drift away from the literal, the [+IEPS] feature may remain and continue to condition auxiliary selection.

- b. Jan is naar Amsterdam gelopen.
John has to Amsterdam walked

This fact can be accounted for rather simply in our analysis. We will assume, as mentioned above, that the unmarked negative value of the feature [IEPS] is left underspecified, to be filled in at some late point by default rules. In addition, we assume that the features that determine auxiliary selection are not solely those of the verb but of the predicate as a whole. Thus the addition of a directional phrase, as in (16b), adds the positive value of the feature [IEPS] to the features of the verb, in effect changing the verb's class with respect to auxiliary selection. Note further that it is not the mere presence of a directional phrase but its actual interpretation as adding an inferable eventual position that is crucial for the change in auxiliary selection. Consider the examples in (17):

- (17)a. Hij heeft door de kamer gelopen.
He has through the room walked
- b. Hij is de kamer door gelopen.
He is the room through walked

The example in (17a) is acceptable only on the interpretation that the event of walking described was one of wandering or pacing aimlessly around in the room. In contrast, (17b) implies a clear trajectory through the room with an eventual position implied. The analysis proposed here will explain the variable auxiliary selection of the verbs listed in (3).

It might be worth clarifying at this point how the value of the feature [IEPS] might be derived compositionally from a combination of a verb plus its arguments. We assume that the LCS for *lopen* 'walk' is (18a) (repeated from (12)), where [IEPS] is underspecified:

- (18)a. *lopen* 'walk'
 [+dynamic ([_{Thing}]), [_{Manner} 'walking']]
 ∅ IEPS
- b. *door* 'through'
 [VIA ([_{Place}])]
 +IEPS
- c. composed CS
 [+dynamic ([_{Thing}], [VIA ([_{Place}])]), [_{Manner} 'walking']]
 +IEPS +IEPS

We assume further that in its directional use *door* 'through' has the LCS in (18b), and that the LCSs of the verb and postposition are combined or composed in creating the CS of the sentence as a whole. The CS of the predicate is illustrated in (18c). Since the feature [IEPS] is underspecified on the highest function, it is filled in from the Path function, perhaps using a mechanism akin to feature percolation in morphology (cf. Lieber 1992).¹⁰ The introduction of the [IEPS] feature on adpositions is supported by the fact that verbs are not the only functions in CS that bear the feature IEPS, and that overtly express the difference between [+IEPS] and [-IEPS]. Adpositions, the only other category of functions in CS for which we believe [IEPS] to be relevant, also overtly mark this difference, namely, by means of preposing versus postposing: prepositions can be both [+IEPS] and [-IEPS], but postpositions in Dutch are always [+IEPS], as illustrated in (19):

- (19)a. Jan loopt naar de school. ([+IEPS] preposition)
 Jan is naar de school gelopen.
Jan walks/has walked to the school.
- b. Jan loopt in de school. ([-IEPS] preposition)
 Jan heeft in de school gelopen.
Jan walks/has walked in the school.
- c. Jan loopt de school in. (postposition, always [+IEPS])
 Jan is de school in gelopen.
Jan walks/has walked into the school.

In other words, auxiliary selection and the position of the adposition overtly mark the same thing, whether the head of the phrase is positively or negatively marked for [IEPS].

Transitives which Vary between hebben and zijn

The data discussed in the section above is familiar in the literature on auxiliary selection in Dutch. Less well known is the fact that a similar variability in auxiliary choice based on the presence or absence of an inferable eventual position can be found for a certain small class of transitive verbs as well. Remember that transitive verbs in Dutch normally take the auxiliary *hebben*. However, a transitive verb can take *zijn* if it clearly has a [+IEPS] component of meaning. Such behavior is relatively unusual for transitive verbs in Dutch as it typically requires a situation in which

¹⁰ Another possible mechanism would be something like the structure preserving binding suggested in Jackendoff (1996).

the agent and the theme are in independent conjoint motion, or a parallel situation involving change of state.¹¹ Nevertheless, a few such verbs do exist.

We begin with the verbs of independent conjoint motion. The reference grammar *Algemene Nederlandse Spraakkunst* lists a few such which take *zijn* as their auxiliary, among them *naderen* 'approach' (example from Geerts et al. 1984, pp. 518–519).¹² Note again that what is relevant here is that the eventual position of the highest argument is in fact inferable.

- (20) De vijand is de stad genaderd.
The enemy has approached the city.

Similarly, a verb like *volgen* 'follow' which, as mentioned above, sometimes takes *hebben* can (and generally will) take *zijn* if a clearly directional meaning is implied. Consider the examples in (21), the second and third of which are taken from the Dutch newspaper *Trouw*:

- (21)a. De politie is de dief tot zijn huis gevolgd.
The police have the thief to his house followed.
- b. "De kerk is Jezus niet gevolgd." (5-18-94)
The church has not followed Jesus.
- c. "... die de discussie gevolgd heeft over Nederland." (6-13-94)
... who has followed the discussion concerning the Netherlands.

(21a) is quite straightforward. Since the verb *volgen* 'follow' allows us to infer the eventual position of the police – nearer to the thief and his house – the uppermost semantic function is [+IEPS], and the auxiliary is *zijn*. Although the difference between (21b) and (21c) is somewhat subtle, it seems possible to argue that the auxiliary *zijn* is chosen in the former case because there is a clear (if metaphorical) sense of the eventual position implied in the event of following, whereas in the latter case no such sense is present. In (21c), *volgen* does not allow any inference about the change of state in the 'follower', similar to verbs such as *hear* or *listen to*. By contrast, in (21b), such an inference is possible. The writer of this sentence claims that the church is not where it would have been if it had not

¹¹ Note that not all verbs which denote conjoint activity fall into this category. For a verb like *vergezellen* 'accompany, lit., make someone into a fellow traveler', it is the causative semantic function (i.e., a [+dynamic, -IEPS] function) which is uppermost in the LCS, and this determines auxiliary selection. See Section 2.2 below for a discussion of *ver* verbs.

¹² There are a number of derived and particle verbs in this category which we will discuss below.

followed Jesus. In terms of the sorts of LCSs we have been developing, we might say that *volgen* 'follow' is typically a GO verb, that is, one which has the features [+dynamic, +IEPS]. However, it can be used without the directional sense, more in the sense of understanding, in which case we would analyze it as an ACT verb, that is, one whose features are [+dynamic, -IEPS] (as well as in the extensional sense discussed above). Without the clear directional component to the meaning, *hebben* is necessary as the auxiliary. Similarly in the case of the verb *passeren* 'pass', if used in a clearly motional sense (i.e., passing a car on the highway), *zijn* is the auxiliary of choice (*Wij zijn hem gepasseerd* 'We have passed him.') However, *hebben* is possible if the event of 'passing' is metaphorical and nondirectional (*Wij hebben hem gepasseerd* has the dominant meaning 'we passed him by (i.e., ignored him)').¹³

Parallel to these conjoint motion verbs are the verbs *vergeten* 'forget' and *verliezen* 'lose', which seem to involve change of state rather than change of position. The first fact that is of interest with respect to these verbs is that they are synchronically opaque; that is, although they appear formally to be derived with the prefix *ver-*, which we will discuss in detail below, they are synchronically unanalyzable (in fact there are no verbs *geten* or *liezen* in Dutch). Second, we should point out that these verbs can take either *hebben* or *zijn* as their auxiliary, depending upon nuances of interpretation. In the former interpretation, the verb has a clear activity reading; *Ik heb mijn sleutels verloren* 'I've lost my keys' focuses on the activity of losing the keys. The interpretation of the sentence with *zijn*, *Ik ben mijn sleutels verloren* 'I've lost my keys' emphasizes the arrival of the highest argument at the end-state (being keyless).

We would suggest that the LCSs of *volgen* and *vergeten* are something like (22):

- (22) [+dynamic ([_{Thing}], [+dynamic ([_{Thing}]))]
 +IEPS +IEPS

In other words, in some sense verbs like *volgen* 'follow' are [+IEPS] analogues of causatives like *breken* 'break'.

¹³ What may be at stake with verbs like *volgen* 'follow' is that the position of the verb's highest argument, the agent, is related to the position of the theme argument. Intuitively, when the latter undergoes motion that results in an inferable eventual position or state, the latter does, too.

Idioms, Light Verbs, and Reflexives

The analysis developed above also offers some insight into a range of data about auxiliary selection in Dutch light verbs and idiomatic expressions that is discussed in Everaert (1992). Concerning light verbs, Everaert notes the following examples (1992, p. 4):

- (23)a. Het vliegtuig is geland.
The plane has landed.
- b. De voorstelling is aangevangen.
The show has begun.
- (24)a. Het vliegtuig heeft een landing gemaakt.
The plane has made a landing.
- b. De voorstelling heeft een aanvang genomen.
The show has begun (lit has a beginning taken)

Everaert argues that the examples in (23) and (24) have the same aspectual properties (they are all [+telic]), indicating that aspect is not the determining factor in auxiliary selection. Indeed, he suggests that the examples in (23) and (24) have roughly the same meaning. It seems, however, that 'rough meaning' – the fact that one sentence is more or less a paraphrase of the other – is not what is at stake here. Rather, it is crucially the syntactically relevant semantic feature composition of the predicates that conditions auxiliary selection. In our terms, the sentence pairs have different predicates with different main verbs, and it is the composition of the predicate rather than the overall sentence meaning which determines the selection of the auxiliary. In the case of (23a) and (24a), the verb *landen* 'land' is an unaccusative verb – in our terms it bears the features [+dynamic, +IEPS]. Therefore it selects *zijn*. But in (24a) the main verb is *maken* 'make', which is [+dynamic, –IEPS]. That is, *maken* is an inherently causative verb, lexically marked with the minus value of the [IEPS] feature. Indeed, even if such a sentence had a verb which was underspecified for the [IEPS] feature, we would assume that composition with the noun would not affect the [IEPS] value of the verb; we would argue in fact that a noun like *landing* cannot bear the [IEPS] feature. That is, although nouns have an LCS that contributes to the CS of the phrase/sentence as a whole (for example, with respect to telicity), we are assuming that inferability of position or state is a feature that can only be applied to Events or Paths, and not to States. Result nouns like *landing*

do not have an event structure, and therefore do not bear the feature [IEPS]. A similar story accounts for the contrast in (23, 24b).

As with light verbs, auxiliary selection in idiomatic expressions seems to be determined by the literal CS of the predicate, rather than the overall idiomatic meaning of the expression. Again, we use Everaert's examples (1992, p. 5):

- (25) Zij heeft haar biezen gepakt.
 She has her bags packed.
 She left.

- (26) Hij is tekeer gegaan.
 He is 'tekeer' gone.
 He has ranted.

If auxiliary selection were determined by the overall idiomatic meaning of each sentence, we might expect exactly the opposite auxiliary selection. That is, the idiomatic meaning of (25) contains an implied eventual position, whereas that of (26) clearly does not. Yet auxiliary selection seems to be determined by the literal CS of the predicates in idiomatic expressions. The verb *pakken* 'pack' is [+dynamic, -IEPS], and therefore *hebben* is chosen even in the idiomatic expression. In contrast, the verb *gaan* 'go' is [+dynamic, +IEPS], and therefore takes *zijn*.

Similarly, reflexive verbs such as *zich snijden* 'to cut oneself' and *zich inschepen* 'to embark' require HAVE as auxiliary, even though the meaning of the phrase is one in which directed change is predicated of the external argument. However, unlike the case of idioms and light verbs, where the change of state or place reading has to be learned as part of the unpredictable meaning of the phrasal unit, the interpretation of the external argument as undergoing directed change seems rule-governed. The question then is whether this interpretation should be encoded in the CS of the reflexive verb, or whether it arises at the level of semantic interpretation.

To answer this question, first observe again that nouns and pronominal elements, in contrast to verbs and adpositions, do not bear the feature [IEPS]. In the Jackendovian approach to conceptual structure, verbs and adpositions appear as semantic functions, functions that accept either other functions or Things as their argument. The latter are typically realized by noun phrases. Since [IEPS] is a feature generalizing over change of place and change of state, it is restricted to those functions that can specify aspects of such change, namely dynamic verbs, as the functions

potentially specifying the change itself, and adpositions, as the functions potentially specifying the path of change. As mentioned above, verbs and adpositions are the only categories that overtly mark [IEPS], the verbs by means of the auxiliary, and the adpositions by means of the preposition/postposition parameter.

Since nouns do not provide a site for [+IEPS] to percolate to, the nouns and pronominal elements that appear in idioms or reflexives will not change the IEPS specification of the phrase, and hence will not affect auxiliary selection. This does not imply, however, that external argument of a reflexive is denied the possibility of receiving the *interpretation* of undergoing affected change. To the contrary, the innermost [+dynamic, +IEPS] function in a transitive verb such as *snijden* 'cut' specifies that its argument, a Thing, enters the state of being cut. If this argument happens to be a reflexive pronoun, the normal mechanisms of anaphor resolution will transfer this interpretation to the external argument. Even though the external argument receives the interpretation of undergoing change, it remains the argument of an outermost [+dynamic, -IEPS] function, and it is this outermost function that determines auxiliary choice, irrespective of whether the internal argument happens to be coreferential with the external argument.

It might of course be asked why the full meaning of the sentence itself is not the determining factor for auxiliary choice. We have no full-fledged account for why this alternative state of affairs is not realized in Dutch. Nevertheless, we have the following observation to offer. Anticipating the discussion in Subsection 2.2.2, we may observe that word formation may change a [+IEPS] verb into a [-IEPS] verb and vice versa. Such a change is never brought about in the syntax. In the syntax, only manner of motion verbs, which are unspecified for [IEPS], can be changed from [ØIEPS] to [+IEPS] through percolation from a [+IEPS] adposition. This suggests that auxiliary choice is essentially a lexically governed phenomenon.

We suspect that this highly lexically-constrained compositionality is advantageous for real-time speech production. Speech production is incremental in nature (Levelt 1989). Incrementality crucially depends on modularity, on computations that can be carried out locally without dependence on the outcome of more global computations. The lexical nature of auxiliary selection in Dutch suggests that choosing the appropriate auxiliary is a fairly local computation, a choice that can be made without having to compute the meaning of the whole utterance. If auxiliary selection would have to be computed on the basis of the whole sentence (which would be the case if telicity were the factor driving auxiliary selection), then the incrementality of speech production would be severely impeded.

From this perspective, the lexical determination of auxiliary choice and its independence from sentential meaning strongly suggests that we are dealing with a tightly constrained independent and autonomous semantic module of the grammar.

A Note on Auxiliary Choice in Perfect Passives

It seems possible to extend the analysis presented here to perfect passives, as well as perfect actives, although our remarks here are necessarily somewhat speculative. Note first that historically the perfect passive in Dutch was formed with the auxiliary *geworden* 'become' which itself takes *zijn* in the perfect (this is still the case in modern German). It is reasonable to assume that the auxiliary choice remained after the verb *worden* 'become' was lost in the passive. Nevertheless, given certain semantic characteristics of passive participles, on our account, we would expect the auxiliary *zijn* to be chosen in the perfect passive in any case. It is well known that one semantic effect of turning a verb into a passive participle is to change a [+dynamic] verb into a change of state verb. In a sentence like *The apple was eaten*, the passive participle *eaten* no longer denotes an activity. Crucial for our analysis is the fact that with the change in the verbal form from active to passive, it becomes possible to infer the eventual position or state of the highest argument, the theme. For the participle *eaten*, the eventual state of the theme is one of nonexistence. For this reason, we would argue that one of the effects of passivization is to change an underspecified [IEPS] feature to [+IEPS]. We would then expect the appropriate auxiliary for the passive form to be *zijn* regardless of the auxiliary choice of the verb in the active. We speculate that this state of affairs has become grammaticalized in modern Dutch, so that even in cases which are somewhat difficult to construe as changes of state (e.g., *Het lied is gezongen* 'The song was sung'), the auxiliary must be *zijn*.

Exceptional Case: zijn

Thus far, our analysis accounts nicely for all sorts of simplex verbs. There is one remaining simplex verb, however, that is problematic for our account, the verb *zijn* 'be' itself. We will attempt here to say something about the odd behavior of this verb, namely that it selects *zijn* as its auxiliary, although we freely acknowledge that *zijn* remains a problem for us (and for all other treatments of auxiliary selection as well). According to our analysis, we would expect *zijn* to choose *hebben* as its auxiliary, as other verbs of existence such as *existeren* 'exist' and *bestaan* 'exist' do. *Zijn* is in fact the quintessential stative verb, and therefore would be

expected to have the features [–dynamic, –IEPS]. We have argued that only [+IEPS] verbs should choose *zijn* as their auxiliary.

The verb *zijn* is clearly an anomaly on our view. Nevertheless, it is interesting to note that it is a fairly recent development in standard Dutch for *zijn* to take *zijn* as its auxiliary. According to de Rooij (1988), at least through the seventeenth century *hebben* vied with *zijn* as the appropriate auxiliary for the verb *zijn*. And the verb *hebben* still occurs as the appropriate auxiliary for *zijn* in certain Dutch dialects, especially in the south of the Netherlands. Beyond this, we can only point to the fact that the verb ‘be’ is anomalous in many ways in many languages, so it is not too worrisome that it is anomalous with respect to auxiliary selection in Dutch.

Conclusion

We conclude our discussion of the simplex verbs of Dutch with a statement of the rule of auxiliary selection: *zijn* is selected if the predicate is [+IEPS], where [+IEPS] is determined by the highest semantic function of the verb, by percolation from a directional phrase, or in the case of the passive participle or the verb *zijn* itself, where it has been grammaticalized. Note that the selection of the auxiliary is claimed to be quite predictable, except in a few select cases, which are certainly learnable.

2.2.2. Complex Verbs

The analysis developed above can be extended beyond simplex verbs to account for auxiliary selection in both prefixed verbs and verbs formed with particles in Dutch. To our knowledge, this is an area in auxiliary selection that has barely been discussed in previous literature. We begin with prefixed verbs.

Verbs Prefixed with ver-, be-, and ont-

The prefixes we will discuss here are the ones that can attach to verbs, nouns, or adjectives to form verbs in Dutch, namely *ver-*, *be-*, and *ont-*. Some examples of prefixed verbs are given in (27).

- (27)a. *ver-*
- | | |
|-----------|------------------------|
| verarmen | ‘to become, make poor’ |
| verhuizen | ‘to move’ |
| verjagen | ‘to chase away’ |
- b. *be-*
- | | |
|----------|---------------|
| bekorten | ‘to shorten’ |
| bebossen | ‘to forest’ |
| bebouwen | ‘to build up’ |

as its auxiliary; if [+dynamic, +IEPS] is outermost, the verb should choose *zijn*. As the examples in (29) suggest, this indeed proves to be the case:

- (29)a. Wij hebben de piano naar Amsterdam verhuisd.

We have the piano to Amsterdam moved.

- b. Wij zijn naar Amsterdam verhuisd.

We have to Amsterdam moved.

With the prefix *be-* almost all forms are causative. We would therefore expect verbs in *be-* to take *hebben* as their auxiliary, and this is in fact what we find:

- (30)a. Hij heeft zijn familie bevoordeeld.

He has his family favored (caused favor to go to)

- b. De hond heeft de straat bevuild.

The dog has the street fouled.

The few cases where *be-* verbs take *zijn* as their auxiliary, some of them confined to rather specialized technical areas or idiomatic expressions (*bekamen* 'to become covered with moldy scum [brewing term]', *belanden* 'end up', *beschimmelen* 'become moldy', *besterven* 'die', *bestoelen* 'form several stalks [botany]', *betijen* 'leave bc', *bezakken* 'sag, subside, settle', *bezinken* 'settle', *bezwijken* 'give way', *bezwijmen* 'swoon'), are purely inchoative. As such, they are also well behaved with respect to our analysis; as inchoatives, they have INCH as the outermost semantic function in their LCSs that is, a [+IEPS] function, and therefore *zijn* is exactly what we would expect. CELEX lists a number of other verbs which vary in auxiliary selection between *hebben* and *zijn*.¹⁵ As can be seen in (31), all such verbs also vary between causative and inchoative readings:

- (31)
- | | |
|-----------|---|
| bedaren | 'calm down'; 'cause to calm down' |
| bederven | 'decay, rot'; 'spoil' |
| beklinken | 'sink in'; 'settle, clinch' |
| bekoelen | 'cool down'; 'make cool' |
| bekorsten | 'get a crust'; 'cover with a crust' |
| bevriezen | 'freeze up'; 'cause to freeze up' |
| bewolken | 'become covered with clouds'; 'cover with clouds' |

Again, the verbs in (31) cause no difficulty for our analysis. Verbs with

¹⁵ A few of the verbs listed in this category in CELEX are either archaic, or are so lexicalized in meaning that we assume them to be synchronically unanalyzable. Among these is the verb *bevallen* 'please, give birth', for example. We have eliminated these from our list in (31).

the prefix *ont-* are like those with *be-*. Most are causative, and take *hebben* as their auxiliary. Fewer are inchoative and these take *zijn*, as we would expect. Among these inchoatives are a number of separative *ont-* forms which are also transitive: e.g., *ontwijken* 'evade', *ontlopen* 'escape', *ontvluchten* 'flee'. See Appendix B for examples of their use as transitive verbs with *zijn*.

We have not looked extensively at other verbal affixes in Dutch, but a preliminary analysis seems to show that prefixes and suffixes which attach to verbs behave as one would expect them to with respect to our analysis. For example, the prefix *her-*, which is the equivalent of *re-* in English, does not add or change the feature [IEPS] on the verb that it attaches to. Thus, a verb which is [+IEPS] (e.g., *trouwen* 'marry') remains [+IEPS] when prefixed with *her-* and so on. The suffix *-iseer* in contrast can add the feature [IEPS], since it creates verbs from nouns and adjectives which do not themselves bear this feature. Like *-ize* in English (see Lieber 1997), *-iseer* forms causative and occasionally causative/inchoative verbs in Dutch (e.g., *kristalliseren* 'crystallize'). The (rare) inchoatives are [+IEPS] and take *zijn* as their auxiliary. Causatives formed with this suffix regularly take *hebben*.

Verbs with Particles

Although a full treatment of verbs with particles is beyond the scope of the present paper (there are thousands of such verbs in Dutch and the process of coining new ones is quite productive), we must at least say something here about the sort of analysis our framework would provide. Particles in Dutch can express, among other things, aspectual meaning, resulting state, and directed change. We predict that just in case the base verb is [−IEPS] or unmarked for the feature [IEPS] and the particle adds a clearly inferable eventual position or state of the highest argument, then the resulting particle verb should take *zijn* as its auxiliary rather than *hebben*. Our review of the data is a bit skeletal, but we try here to go systematically through all the logical possibilities.

The first possibility that we consider are cases in which the particle does not change the [IEPS] feature. We begin with cases in which the base itself is [+IEPS].

- (32)a. *komen* 'come', *aankomen* 'arrive'

Zij is gisteren aangekomen.

She is yesterday arrived.

- b. *groeien* 'grow', *uitgroeien* 'grow into'
 Het idee is tot een artikel uitgegroeid.
The idea has grown into an article.

The examples in (32) show that the addition of a directed change particle to a [+IEPS] verb, the first a verb of directed motion, the second an inchoative, has the effect we would expect with respect to auxiliary selection, that is, no effect. Since the verb is already [+IEPS] the addition of a particle which is arguably also [+IEPS] does not change the properties of the verb.

It is also logically possible for the base to be [−IEPS].

- (33) *denken* 'think', *overdenken* 'think over'
 Ik heb het plan goed overdacht.
I have thought the plan over well.

With a base that is [−IEPS] (or unmarked for [IEPS]), the addition of a particle that does not allow the inference of eventual position or state does not change the properties of the verb with respect to auxiliary selection. Note here that although the particle *over* can sometimes indicate directed change, it clearly does not do so in this particular case.

We consider next cases in which the particle changes the [IEPS] feature. First, we look at a case in which the base is [+IEPS]:

- (34)a. *zinken* 'sink', *afzinken* 'sink down' (causative)
 Zij hebben het schip afgezonken.
They have sunk the ship.
- b. *schrikken* 'become frightened', *afschrikken* 'scare away'
 Dit vooruitzicht heeft hem afgeschrokken.
This prospect has scared him away.

(34) gives another kind of example in which a particle which might otherwise impart a directed change meaning does not do so. This kind of example seems to be quite rare and involves cases where the particle idiosyncratically adds both a directed change meaning and a sense of causation. It is the latter that wins out, as we would expect given the hierarchical arrangement of semantic primitives that we assume here. Given that the highest semantic function is the causative one, the fact that the resulting verb ends up as [−IEPS] and takes *hebben* is quite expected.

Finally, in (35) we consider a case in which the base is [ØIEPS] (*vliegen* 'fly') or [−IEPS] (*praten* 'talk').

- (35)a. *vliegen* 'fly', *overvliegen* 'fly over'
 Drie straaljagers zijn overgevlogen
Three fighter planes flew over.
- b. *praten* 'talk', *uitpraten* 'talk (to completion)'
 Hij is uitgepraat.
He talked himself out.

In the examples in (35) we see clearly that a particle *can* a directed change meaning that allows an eventual position or state of the theme to be inferred to a verb which does not itself inherently allow this inference. In these cases, the particle supplies the [+IEPS] feature, and as expected, verbs which without the particle would select *hebben*, with the particle come to select *zijn*. In this group there are in fact several transitive particle verbs which take *zijn*, including *oversteken* 'cross', *overzwemmen* 'swim across', *overspringen* 'jump across'. See Appendix B for examples using these verbs.

2.3. Type Coercion and the Feature [IEPS]

In the preceding sections, we have shown that morphological operations can change the value of the feature [IEPS] for a given verb from [+IEPS] to [−IEPS] and vice versa. The affixes and particles that bring along such changes each specify additional changes in meaning, changes that affect the argument structure of the verb, for instance. In addition to overt morphology involving changes in the specification of [IEPS], Dutch has a productive rule for changing the value of [α IEPS] into [− α IEPS], as illustrated in the following examples:

- (36)a. Het meisje heeft de straat overgestoken.
The girl has crossed the street.
- b. Het meisje is de straat overgestoken.
The girl has crossed the street.
- (37)a. De bergklimmer heeft vandaag gedaald en geklommen.
The mountain climber has descended and ascended today.
- b. Het vliegtuig is tot een hoogte van 1500 voet gedaald.
The airplane has descended to an altitude of 1500 feet.
- (38)a. Daar heb ik overheen gelezen.
There have I over read.
 I read over it.

- b. Daar ben ik overheen gelezen.
I completely read over it.

What we think is at stake in examples like these is a process something like what Pustejovsky (1995) calls *type coercion*. Pustejovsky (1995, p. 59) defines type coercion as “a semantic operation that converts an argument to the type which is expected by a function, where it would otherwise result in a type error”. We say ‘something like’ type coercion because what seems to be happening in cases like those above is that the use of the ‘wrong’ auxiliary forces a reading onto the verb other than that which the verb normally has; in other words, the choice of the wrong auxiliary forces a normally [+IEPS] verb to a [−IEPS] reading, and vice versa. Above, the (a) examples all have an activity reading in which the eventual position or state is backgrounded. The (b) examples all highlight the eventual position or state of the subject. In the last example, for instance, the wording under (38a) is suited for reporting the event as such, but the wording under (38b) is entirely appropriate when the resulting state of having overlooked the point in question is foregrounded.¹⁶

Although fully productive, changing the feature specification of [IEPS] by means of type coercion is marked, in the sense that it is relatively rare. Verbs such as *lezen* are lexically specified as [−IEPS], hence the default auxiliary for *lezen* is HAVE. However, if a native speaker of Dutch conceptualizes a reading event to culminate in a change of state that requires overt marking, the language makes this possible by means of type coercion.

Type coercion of [IEPS] should be carefully distinguished from homonymous pairs which differ not only with respect to the feature [IEPS], but with respect to lexical meaning. For instance, Den Dikken (1995, pp. 23–33) mentions pairs of particle verbs such as *De jongen is doorgelopen* ‘The boy walked on’ and *De jongen heeft doorgelopen* ‘The boy kept up a stiff pace’, where the change of auxiliary is accompanied by a change in meaning. In the first example we have a [+IEPS] verb of motion, with the particle *door* specifying the path along which the boy is walking. In the second example, *doorlopen* is a manner of motion verb, with the particle *door* not denoting the path of motion, but the brisk pace set. As for manner of motion verbs in general, the required auxiliary is HAVE. Such

¹⁶ We thank our colleague Rob Schreuder for spontaneously producing this example at just the right moment. Further, we might note that it is cases like this that Honselaar (1987) concentrates on, although it is not clear whether his account is intended to be semantic or pragmatic.

examples abound not only for particle verbs, but also for simplex verbs such as *gaan*, which as a motion verb means 'go' and takes BE, but which is also used in the sense of dating, in which case it takes HAVE; *Ik heb met het meisje gegaan* 'I was dating (lit., going with) the girl'.

3. PREVIOUS ACCOUNTS

Previous accounts have treated the matter of auxiliary selection in a number of rather different ways; some are concerned with aspectual features, some with characteristics of argument structure, that is, the level mapping between LCS and hierarchical syntactic structure, and some with pure syntax. We will consider examples of each of these types of analysis in turn.

3.1. *Semantic and Aspectual Analyses*

There are, of course, others who have tried to give an account of auxiliary selection that is based on semantic and aspectual characteristics of verbs. We will mention two here, Van Valin (1990) and Zaenen (1993). Van Valin (1990) discusses the role of semantics in auxiliary selection among intransitive verbs, primarily in Italian. He argues that in Italian the selection of BE (*essere*) as opposed to HAVE (*avere*) depends upon the Aktionsart of the intransitive verb: those intransitive verbs which are Activity verbs take *avere*, those which are State, Achievement, or Accomplishment verbs take *essere* (1990, p. 232). His analysis is therefore in rather the same spirit as ours, in the sense that it is the lexical semantics of verbs that determines auxiliary selections. While his analysis may be correct for Italian, it nevertheless cannot be correct for Dutch. Van Valin discusses only the different types of intransitive verbs in Italian, that is, unaccusatives versus unergatives. As we have tried to show, the question of auxiliary selection in Dutch extends beyond the realm of intransitive verbs, and therefore any account based on the Aktionsart of intransitive verbs will not extend to Dutch.

Zaenen (1993) also shares with us the belief that the major determinant in auxiliary selection for Dutch, at least for intransitive verbs, is a semantic one, but she argues that the semantic property which determines auxiliary selection is telicity. She suggests that monadic verbs which are telic select *zijn* as their auxiliary, and atelic monadic verbs *hebben*. While this seems to work for many monadic verbs in Dutch (*werken* 'work' is atelic and takes *hebben*, for example, and *aankomen* 'arrive' is telic and takes *zijn*),

the correlation is by no means perfect. For example, as we have pointed out above, some verbs which are clearly atelic take *zijn* (e.g., *dalen* 'descend') and others which are clearly telic take *hebben* (e.g., *geeuwen* 'yawn'). Further, as noted above, Verkuyl has argued persuasively that the property of telicity is not purely a lexical one, but is influenced by the quantificational characteristics of the arguments of the verb (see (8) above for examples). Zaenen, noting that addition of various arguments does not change the auxiliary selection of the verb, in spite of the fact that such arguments may change the verb's telicity, is forced to conclude that the verb's inherent lexical telicity determines auxiliary selection. This, in turn, leads to difficulties with cases like those discussed in the section on unergatives with directional phrases, where the addition of a directional phrase changes the auxiliary selection of the verb. Zaenen is forced for these cases to conclude that items like *naar X lopen* constitute distinct lexical entries. We conclude that telicity is not the correct semantic characteristic on which to base a semantic analysis of auxiliary selection.¹⁷

3.2. *Argument-structure Theoretic Analyses*

A recent account of auxiliary selection in Dutch that is based on argument structure and the mapping to syntax is that in Ackema (1995). Ackema suggests that selection of the auxiliary in Dutch depends upon the thematic properties of the two auxiliaries in combination with the property of unaccusativity in main verbs. In its simplest form, Ackema's proposal is that the auxiliary BE has no theta role to assign, whereas HAVE assigns a semantically vacuous theta role which will be merged with the subject role of the main verb with which it composes. Unaccusative verbs take BE in this account because they have no subject role; that is, merging an unaccusative verb with the auxiliary HAVE would give rise to a violation of the theta criterion, as the subject role of HAVE could not be assigned. As Ackema himself points out, however, the simplest account is not

¹⁷ Other works that might be mentioned in this context are Van Hout, Randall, and Weissenborn (1993) and Van Hout (1996). These works seek to test the acquisition of intransitive verbs; it is hypothesized that telicity determines the distinction between unaccusative and unergative verbs, and that auxiliary selection is a function of the unaccusative/unergative distinction. Neither work, however, is concerned with the whole range of auxiliary selection cases that interest us. We might note, however, that where they count telicity as the factor which determines whether a child acquiring Dutch will class an intransitive verb as unaccusative or unergative, their results are entirely consistent with the hypothesis that the feature [IEPS] is the determining factor; novel verbs which seem to have a [+IEPS] component of meaning are used with *zijn*, others with *hebben*.

adequate. As the thematic role assigned by HAVE is semantically vacuous, there is nothing to prevent it from being merged with the (internal) thematic role assigned by an unaccusative verb, predicting that unaccusative verbs should be able to take HAVE in the perfect *after all*. Ackema proposes to remedy this difficulty by allowing HAVE to assign accusative case. Thus, if merging HAVE with the thematic structure of an unaccusative verb does not give rise to a violation of the Theta Criterion, it will violate the Case Filter.

The alternation of auxiliary selection in unergatives like *lopen* 'walk' is treated as follows. Ackema proposes that the addition of a directional phrase essentially turns *lopen* 'walk' and similar verbs into unaccusatives; *the unergative verb forms a complex verb with the directional preposition*, merging its theta role with that of the prepositional phrase (that is, they are predicated of the same argument). That role becomes an internal theta role, making the d-structure representation of these verbs essentially identical to that of unaccusatives. As such, *they choose the same auxiliary as unaccusatives*, namely BE.

We find two problems with Ackema's analysis. First, the notion that HAVE assigns accusative case leads to difficulties. Since unergatives take HAVE as their auxiliary, Ackema would be forced to say that HAVE *only* optionally assigns accusative case. But once the assignment of accusative case is made optional, the explanation of why unaccusative verbs cannot take HAVE disappears. If HAVE happens not to assign its accusative case, and also happens to merge its semantically vacuous theta role with the internal argument provided by an unaccusative verb, the derivation should be licit, not the result that we wish. Second, the analysis fails to account for the transitive verbs like *volgen* and *passeren* which take BE as their auxiliary; as BE has only one theta role to assign, essentially an external one, it should not occur with diadic verbs at all. It is unclear how Ackema would handle cases such as these within his framework.

3.3. Syntactic Analyses

Kayne (1993) discusses auxiliary selection primarily in the Romance languages, proposing a strictly syntactic account. Although the facts of Italian dialects that he seeks to explain stand somewhat outside the scope of this paper, it is of some interest to examine the viability of Kayne's proposal for the Dutch facts. Kayne argues that HAVE is not in fact a distinct auxiliary, but rather is a form of BE into which an abstract prepositional element has been incorporated. BE plus this incorporated prepositional

clement is eventually spelled out as HAVE. Whether or not this incorporation can take place depends upon the nature of the participial clause which is embedded under BE. Simplifying somewhat, if this clause has AGR_s, a process of raising will occur, resulting in incorporation and spell out as HAVE. If, on the other hand, AGR_s is absent, raising and incorporation will not occur, and BE will remain as BE. The syntactic analysis that Kayne proposes ultimately depends upon the unaccusative/unergative distinction. The only verbs that will lack AGR_s are in fact unaccusative verbs; transitives and unergatives will both have AGR_s, and will be subject to movement, incorporation, and spell out with auxiliary HAVE.

Kayne's proposal is subject to the same criticism as other analyses of auxiliary selection that depend solely on the unaccusative/unergative distinction. Specifically, it gives no way of explaining the behavior of the Dutch ordinary intransitives like *lopen* that take HAVE unless they have some sort of directional meaning, in which case they take BE. Kayne would be forced to argue that verbs of this sort are sometimes unaccusative and sometimes not. Further, as was the case with Ackema's argument theoretic proposal, it is unclear how Kayne's analysis could be made to account for the transitive verbs like *volgen*, 'follow' and *passeren* 'pass' which take *zijn* as their auxiliary.

Borer (1993) also argues explicitly against a semantic analysis of auxiliary selection in Dutch, suggesting that semantic explanations invariably force us to create multiple lexical entries for verbs such as *lopen* (we have shown above that this is not in fact the case). However, the purely syntactic analysis of auxiliary selection that she proposes ultimately founders upon semantic facts, so we will argue below that the semantic analysis is preferable.

Borer analyzes auxiliary selection as follows. She assumes, first, that lexical entries of verbs may specify the number of arguments a verb takes, but do not designate whether these arguments are internal or external. In lexical entries arguments of the verb are not organized hierarchically in any fashion. Rather, arguments of the verb are designated as internal or external by virtue of movement to the specifier position of some functional projection. Certain functional projections are associated with particular aspectual interpretations as well. So, for example, AspP_{EM} gives an argument that passes through it a delimited or measured out interpretation, which results in a telic interpretation for a sentence as a whole. Borer proposes the following structure for sentences with telic interpretations (1993, p. 28):

(39)

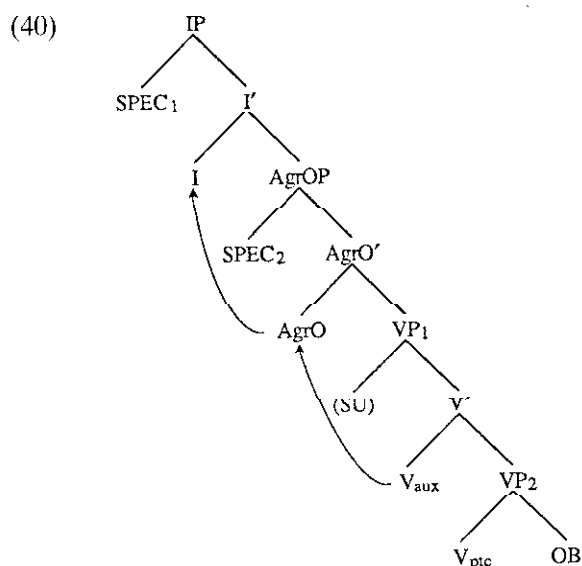
SPEC of AspP may or may not assign accusative case. If it does not assign accusative case, the NP argument of the V must raise again to the SPEC of T to receive nominative case. This is the derivation that results in unaccusative constructions. If the SPEC does assign accusative case, the derivation will survive only if the V has two arguments, in which case a transitive sentence with a telic interpretation will result. If, on the other hand, the V has only one argument, and if Asp does not project, the single argument of the verb will raise to SPEC of T and receive nominative case; the result will be an ordinary intransitive (unergative) construction. These derivations then are correlated with auxiliary selection. The unaccusative derivations select *zijn* as their auxiliary, others *hebben*.

Borer allows verbs with a single NP argument to undergo either sort of derivation (movement through AspP or not); only if the NP moves through AspP will the sentence have the telic/measured/delimited reading. This will be the case with verbs like *lopen*. When they undergo movement through AspP (presumably this will be the case when they have directional PPs), they are in effect assimilated to the case of unaccusatives, and will therefore take the auxiliary *zijn*. If AspP is not projected and they raise directly to SPEC of TP, they will be ordinary intransitives and choose *hebben*.

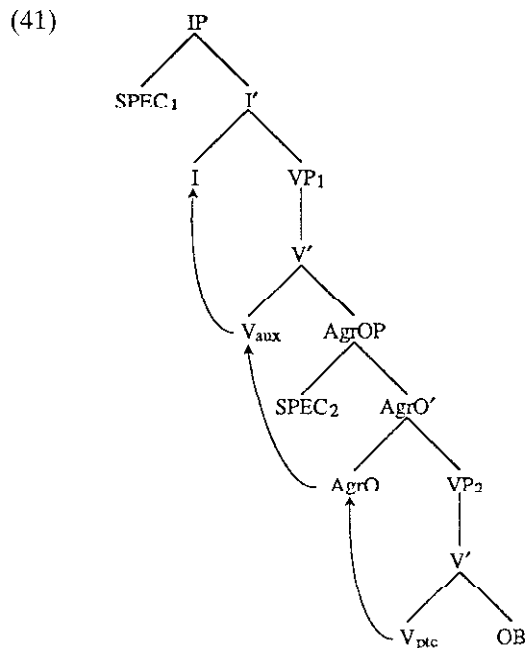
There are a number of problems with Borer's analysis. First, as it assumes that all unaccusatives must move through Spec of AspP, it equates unaccusativity with telicity. We have seen, however, that there are unaccusatives which are atelic (e.g., *vluchten* 'flee') and ordinary intransitives which are telic (e.g., *geeuwen* 'yawn'). Borer's analysis would not be able to derive the semantic characteristics of these verbs in a purely syntactic fashion. Second, her analysis encounters problems in the way it deals with transitive verbs in general. Borer notes that on her analysis one would expect all transitive verbs to have telic interpretation. This is not true,

however, of stative verbs such as *know* or *inhabit* (Borer 1993, p. 34). For these, Borer is forced to assume yet another functional projection AspP_{OR} which is projected for stative verbs instead of AspP_{EM} . An NP that passes through the specifier of this phrase receives accusative case, but not a telic interpretation. The problem with this analysis is that it suggests that semantic distinctions such as stativity can force a proliferation of functional projections – different functional projections are required for different semantic classes of verbs. We would argue that this suggests that Borer's analysis seeks an explanation of the telic/atelic// unaccusative/unergative// *zijn/hebben* constellation of phenomena at the wrong level of representation.

A final sort of syntactic analysis that has been proposed for auxiliary selection is that of Hoekstra (1984), refined and elaborated in Den Dikken (1994). This line of analysis treats all *zijn*-selecting verbs as unaccusatives, that is, verbs which take one or more internal, but no external argument. In Den Dikken's version of this analysis, all perfectives in Dutch must derive from either structure (40) or structure (41) below, the two structures which are available given Den Dikken's Minimalist assumptions (1994, p. 75).¹⁸



¹⁸ As Den Dikken is primarily concerned with facts of auxiliary selection in Romance, rather than in Dutch, he makes available two other structures as well, the correlate of (40) without a SU (subject) for unaccusatives that take *have* (e.g., in Spanish), and the correlate of (41) with a SU in Spec VP₂ for transitives that take *be*.



Den Dikken proposes that the structure in (40) is correlated with *have* selection, and that in (41) with *be* selection. Auxiliary *have*, like main verb *have*, is transitive, and therefore has a case feature to impart; *be*, again like its main verb counterpart, does not have an objective case feature to discharge. Arrows above indicate the various movements involved in the derivation of the perfective constructions. Movement is driven by the need for feature checking; see Den Dikken (1994) for full justification of the details of the derivation. In either case the object raises to SpecIP to get its case features checked by PM, a clitic generated on AgrO. In (40) the auxiliary verb must provide the case feature for PM to check under AgrO. The auxiliary verb must therefore be *have*. In (41) the participle provides AgrO with the necessary case feature (it is assumed in this theory that unaccusative verbs possess a case feature). The participle raises to AgrO, but no further movement is necessary. The V_{aux} position is therefore not provided with a Case feature, and only an auxiliary which does not have a case feature to discharge is compatible; this is the auxiliary *be*.

This analysis does draw an attractive connection between transitivity and *have* selection on the one hand, and unaccusativity and *be* selection on the other, connecting the case-assigning properties of verbs with the case-assigning properties of the auxiliaries. However, it does not actually

explain why some verbs are classed as unaccusative and others as transitive. In fact, in this theory, ordinary (unergative) intransitives like *yawn* must be treated as transitives with a zero object in order to get *have* as the appropriate auxiliary, and some transitives, for example *volgen*, *vergeten*, and the like, as unaccusatives in order to get *be* as their auxiliary. We grant freely that it is possible to do this, but suggest that it would then be very important to have available an independent set of criteria to determine which verbs are transitive and which unaccusative. Since this line of analysis now proposes to explain choice of auxiliary in terms of syntactic transitivity or unaccusativity, auxiliary selection cannot be used any longer as a *diagnostic* of transitivity/unaccusativity (note that Hoekstra 1984, p. 265 uses auxiliary selection in exactly this way). To do so would render the analysis circular. We note further that one of the other criteria for distinguishing unaccusative from transitive and unergative verbs in Dutch, the ability of the participle to occur prenominally with a 'subject interpretation', does not pick out the correct set of verbs as unaccusative for the purpose of auxiliary selection. For example, although, as we have shown, verbs like *passeren*, *volgen*, *vergeten*, and *tegenkomen* can occur with *zijn*, and therefore would have to be classed as unaccusative in the Hoekstra/Den Dikken analysis, their participles cannot be used prenominally:¹⁹

(42)a. *deze die bus gepasseerde auto
 this the bus passed car

b. *deze de dief gevolgdde politicomann
 this the thief followed policeman

c. *de het boek vergeten man
 the the book forgotten man

¹⁹ One of our reviewers has suggested a number of examples in which the prenominal participial use of the verbs in question would be acceptable, or at least not too bad:

de mij zojuist gepasseerde man
 the me just passed man

?de de eindstreep al een flink stuk genaderede atleten
 the the finish already a quite bit approached athletes

Granted that there might be speakers for which these examples are acceptable (the reactions of our informants suggest otherwise), the important point is that although the criterion of prenominal use of the participle might pick out some of the verbs which take *zijn* as their auxiliary, it clearly does not pick out the entire range of verbs in question.

- d. *het de man tegengekomen kind
 the the man met child

We conclude that an analysis of the sort proposed by Den Dikken must depend on other criteria for determining unaccusativity; in theory, presence of the semantic feature [+IEPS] in the highest layer of the LCS of the verb could be used as such a criterion. Unaccusativity is then simply the syntactic reflex of the semantic feature that we have argued is at the basis of auxiliary selection in Dutch.

Note finally that Den Dikken himself (1994, p. 77) points out that his analysis does not explain the variable behavior of manner of motion verbs in Dutch with respect to auxiliary selection. He proposes to handle such phenomena as the variable behavior of *lopen* 'walk' by appeal to telicity: "telic ergative constructions select *be* while atelic ergatives take *have*." But this raises the question whether it is really necessary to call upon both syntactic principles (unaccusativity) and semantic principles (telicity) to explain auxiliary selection in Dutch. A more parsimonious theory would be one in which only syntactic principles or only semantic principles are relevant. This is the approach for which we have opted in this paper. The semantic criterion that we have argued extensively for is the feature [IEPS], however, rather than telicity.

4. CONCLUSIONS

We have argued here that the principle which underlies the selection of the perfect auxiliary in Dutch is a semantic one, rather than one which concerns syntax or argument structure directly: a feature of semantic structure which we have called [IEPS] appears to be the relevant determinant. Only if the feature [+IEPS] belongs to the highest semantic function in the lexical conceptual structure of the verb or if it is provided by a directional phrase or particle syntactically is the auxiliary *zijn* chosen in Dutch. Although our account maintains the basic hierarchical structure of Jackendovian LCSs, it shows, we hope, that there is a place in the decompositional semantic analysis of verbs for a number of aspects of verbal meaning that were not previously part of the Jackendovian formalism. Thus, we believe that this analysis extends beyond an account of some familiar facts in Dutch, and makes a contribution to lexical semantics in general.

In addition, it is clear that our account naturally leads to a further question: how does the phenomenon of auxiliary selection in Dutch relate to auxiliary selection in other Germanic languages and in the Romance

languages? Are languages other than Dutch amenable to a purely semantic account? This is a question which we can only touch on briefly here. A cursory glance at the facts of Italian and French (Kayne 1993, Sorace 1993, Bouchard 1995) indicates that an analysis along the lines suggested here might indeed be promising. Italian and French both select BE as the auxiliary with unaccusative verbs of change of position (e.g., for French *venir* 'come', *arriver* 'arrive', *monter* 'climb') and for STAY verbs (*rester* in French), in other words classically [+IEPS] verbs. Both languages choose HAVE as the auxiliary with manner of motion verbs, with transitives, and with causatives; these are plausibly all marked [-IEPS] in these languages. French and Italian differ from each other in the treatment of auxiliary choice in unergatives with directional phrases. French uses HAVE in the unergatives with directional phrases, Italian BE. We might say here that French marks unergative manner of motion verbs [-IEPS], rather than leaving the feature underspecified. Italian, like Dutch, leaves these verbs underspecified for the feature. This suggests the possibility that there is cross-linguistic variation in the class of verbs which can be underspecified for the feature [IEPS].

There are several points at which further study would clearly be desirable. One is in the case of inchoative (change of state) verbs. Italian uses BE with inchoatives, just as Dutch does, whereas French seems to vary between BE and HAVE, under conditions which are not entirely clear to us (Bouchard 1995, p. 211ff. cites both *La corde a casse* 'The rope broke' and *Le métal est fondu* 'The metal melted' as acceptable). Analysis of the Italian data seems to be relatively²⁰ unproblematic. Analysis of the French must be left here, however, pending further clarification of the data. Second, whether Italian and French auxiliary selection is sensitive to the sort of type coercion that we note in Section 2.3 must remain a subject for further study. Suggestive in this regard is the following data cited by Bouchard (1995, p. 215): Bouchard mentions that alongside the usual use of *monter* 'to go up' with BE as the auxiliary, he has heard the sentence *C'est que j'ai monté* 'It's that I went up' with HAVE said by a woman explaining why she was out of breath (i.e., from climbing the stairs).²¹ Here the emphasis on the activity of walking up the stairs seems to have overridden the normal [+IEPS] feature of the verb, just as in the cases that we discussed for Dutch.

²⁰ We say 'relatively' because Kayne (1993) discusses examples from various Italian dialects which indicate that auxiliary choice can be influenced by person (1st, 2nd, 3rd) or by tense, conditions about which we have nothing to say here.

²¹ Sorace (1993, p. 32) cites a similar example for Italian.

A full cross-linguistic analysis of auxiliary selection in the Romance and Germanic languages is of course beyond the scope of the present paper. We can only suggest in closing that a careful look at the whole range of data in other languages will reveal that the semantic principle that we have claimed is at work in Dutch will prove to be significant as well in other languages.

APPENDIX: CATEGORIES OF MONOMORPHEMIC VERBS

The groupings below are somewhat rough. Where a form is restricted in register, used only in restricted contexts, or very infrequent, we have tried to indicate this. Verbs which are annotated H/Z are either indicated in the dictionary or have been attested in the literature as occasionally taking *hebben* in addition to *zijn* without being interpreted as causative.

1. VERBS SELECTING ONLY BE

1.1. *Change of Place Verbs*

arriveren	'arrive'	
dalen	'descend'	(H/Z)
deraileren	'derail'	
deserteren	'desert'	
drossen	'jump ship'	
emigreren	'emigrate'	
flippen	'flip'	(infrequent)
gaan	'go'	
immigreren	'immigrate'	
kapseizen	'capsize'	
komen	'come'	
migreren	'migrate'	
naderen	'approach'	
rijzen	'rise'	
siepelen/sijpelen	'seep'	
stijgen	'rise'	
stranden	'beach'	
struikelen	'trip over'	
tijgen	'go'	(restricted in register)
vallen	'fall'	
vluchten	'flee'	
wijken	'give way to'	

zakken	'fall, sink'
zinken	'sink'

1.2. *Change of State Verbs*

barsten	'crack'	
beginnen	'begin'	
blijken	'appear'	
botten	'bud'	
coaguleren	'coagulate'	
conglomereren	'conglomerate'	
crashen	'crash'	(H/Z)
creperen	'starve'	
divergeren	'diverge'	
exploderen	'explode'	
fuseren	'fuse'	
gebeuren	'happen'	
geraken	'come to, arrive'	
geschieden	'happen'	
grauwen	'grey'	(infrequent)
grijzen	'grey'	(infrequent)
groeien	'grow'	
kiemen	'germinate'	(H/Z)
klonteren	'clump'	
korsten	'crust'	
lukken	'succeed'	
petrificeren/petrifiëren	'petrify'	
schrikken	'become frightened'	
slagen	'succeed'	
slinken	'shrink'	
sneuvelen	'die'	
sterven	'die'	
stokken	'fail, flag'	(restricted – of breath, of conversation)
wassen	'wax'	(restricted – said of moon)
worden	'become'	

1.3. *Verbs of Continuation of Pre existing Condition*

blijven	'stay'
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1.4. *Verbs of Existence of Condition*

zijn	'be'
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2. VERBS SELECTING BOTH HAVE AND BE

2.1. *Change of Place Verbs with Causative Alternant*

Punctual

debarkeren	'debark'
embarkeren	'embark'
expatriëren	'expatriate'
kantelen	'topple'
kelderen	'go down'
landen	'land'
penetreren	'penetrate'
repatriëren	'repatriate'
roesten	'rust'
scheiden	'separate'
urbaniseren	'urbanize'
wellen	'well'
zwichten	'give way'

Non-punctual

emaneren	'emanate'
stollen	'solidify'
wentelen	'turn over'

2.2. *Change of State Verbs with Causative Alternant*

Punctual

ankeren	'anchor'
atrofieren	'atrophy'
avanceren	'advance'
breken	'break'
calcineren	'calcify'
knakken	'snap'
knikken	'bend'
knappen	'snap'
korten	'shorten'
kreukelen	'crumple'

ploffen	'explode'	
promoveren	'promote'	
scheuren	'tear'	
starten	'start'	
stikken	'suffocate/strangle'	
stoppen	'stop'	
splijten	'split'	
trouwen	'marry'	
Non-punctual		
acclimatiseren	'acclimatize'	
agglutineren	'agglutinate'	
bedaren	'quiet down, appease'	
bederven	'go to waste'	
beteren	'better'	(restricted – said of life, habits)
blaren	'get blisters'	(restricted in register)
blauwen	'(become) blue'	(infrequent)
bleken	'bleach'	
bruinen	'brown'	
buigen	'bow, bend'	
contamineren	'contaminate'	
degraderen	'degrade'	
devalueren	'devalue'	
dikken	'thicken'	(infrequent)
drogen	'(become) dry'	
dunnen	'(become) thin'	(infrequent)
escaleren	'escalate'	
evaporeren	'evaporate'	
evolueren	'evolve'	
fluidiseren	'fluidize'	(infrequent)
fusioneren	'fuse'	(infrequent)
gelen	'(become) yellow'	(infrequent)
genezen	'heal'	
groenen	'(become) green'	(infrequent)
harden	'harden'	
helen	'heal'	(archaic)
integreren	'integrate'	
inverteren	'invert'	
kloven	'chop'	
krimpen	'shrink'	

krommen	'arch'	
lengen	'lengthen'	(restricted – said of days)
luwen	'abate'	(restricted – said of wind)
meerderen	'increase'	(restricted – used in knitting)
minderen	'decrease'	(restricted – used in knitting)
mortificeren	'mortify'	(infrequent)
rafelen	'fray'	
revalideren	'revalidate'	
rijpen	'ripen'	
rimpelen	'wrinkle'	
scherpen	'sharpen'	(infrequent)
schiften	'curdle'	
seculariseren	'secularize'	
segregeren	'segregate'	(infrequent)
slijten	'wear out'	
smelten	'melt'	
smetten	'dirty'	(infrequent)
stremmen	'congeal'	
tanen	'pale, tarnish'	(infrequent, archaic)
tornen	'come unsewn, rip up'	
vezelen	'fray'	(infrequent)
vilten	'felt'	(infrequent)
warmen	'warm'	
weken	'soak'	
wennen	'accustom'	
wortelen	'root'	
zoeten	'sweeten'	
zuren	'(make) sour'	(infrequent)
zwellen	'swell'	

2.3. *Manner of Motion Verbs with [+IEFS] Trajectory Alternant*

Manner of motion

benen	'walk quickly (leg)'
drentelen	'saunter'
dribbelen	'toddle, trip'
duiken	'dive'
fladderen	'flutter, hover'
galopperen	'gallop'
glibberen	'slither'
glijden	'glide'

hinken	'limp, hop'	
hinkelen	'hop'	
huppelen	'hop'	
huppen	'hop'	
klossen	'clump'	
kruipen	'crawl'	
kuieren	'stroll'	
lopen	'walk'	
marcheren	'march'	
rennen	'run'	
scharrelen	'potter about'	
schrijden	'stride'	
schuifelen	'shuffle'	
schuiven	'slide, push'	
sjokken	'trudge'	
slenteren	'saunter, lounge'	
sloffen	'shuffle, shamble'	
sluipen	'slink, sneak'	
stappen	'step'	
stiefelen	'stride'	(infrequent)
stompelen	'stumble, hobble'	
sukkelen	'stumble'	
treden	'tread, step'	(restricted in register)
trippelen	'trip'	
trippen	'trip'	
vliegen	'fly'	
waden	'wade'	
waggelen	'totter'	
zwemmen	'swim'	

Means of motion

fietsen	'ride a bicycle'	
karren	'pedal, drive'	
liften	'hitchhike'	
pedaleren	'pedal'	(restricted in register)
peddelen	'pedal'	
roeien	'row'	
schaatsen	'skate'	
skiën	'ski'	
sleeën	'sled'	
trammen/tremmen	'go by tram'	

trappen	'pedal'
varen	'sail'
zeilen	'sail'
Speed of motion	
ijlen	'hurry' (restricted in register)
snellen	'hasten, rush'
snorren	'whirr along'
spoeden	'hasten'
stormen	'rush along'
Path of motion	
botsen	'bump into'
buitelen	'tumble'
draaien	'turn, twist'
duikelen	'tumble'
dwarrelen	'whirl'
keren	'turn'
ketsen	'misfire/rebound'
klauteren	'clamber, scramble'
klimmen	'climb'
koersen	'shape one's course'
kronkelen	'twist, meander'
laveren	'tack'
plonzen	'splash'
reizen	'travel'
roetsjen	'slide'
rollen	'roll'
slingeren	'swing, oscillate'
spiralen	'spiral'
springen	'jump'
taxien	'taxi'
tollen	'spin'
trekken	'travel'
tuimelen	'tumble'
wippen	'seesaw'
zigzaggen	'zigzag'
zwenken	'turn right/left'
Motion of liquids	
biggelen	'trickle'

droppelen	'drip'
druipen	'drip'
druppelen	'drip'
druppen	'drip'
stromen	'stream'
vloeien	'flow'

2.4. *Manner of Position Verbs with [+IEPS] Trajectory Alternant*

drijven	'float (on water)'
zweven	'float (in the air)'

2.5. *Transitive Verbs of Motion*

volgen	'follow'
passeren	'overtake'
naderen	'approach'

2.6. *Transitive Verbs of Change of State*

vergeten	'forget'
verliezen	'lose'

3. VERBS SELECTING ONLY HAVE

3.1. *Unergative Verbs*

Punctual

gapen	'yawn'
geeuwen	'yawn'
huiveren	'shiver'
knipogen	'wink'
niezen	'sneeze'
reageren	'react'
salueren	'salute'
sjirpen	'chirp'
snikken	'sob'
steigren	'rear, prance'
zuchten	'sigh'
vuren	'fire'

Non-punctual

denken	'think'
hangen	'hang'
knielen	'kneel'
leunen	'lean'
liggen	'lie'
slapen	'sleep'
staan	'stand'
zitten	'sit'

(and some 1200 other non-punctual monomorphemic verbs).

3.2. Transitive Verbs (examples from a list of some 1400 monomorphemic verbs)

Punctual

pakken	'grasp'
slaan	'hit'
snappen	'grasp, understand'

Non-punctual

bouwen	'build'
lezen	'read'
maken	'make'
schrijven	'write'
sturen	'send'

APPENDIX B: TRANSITIVE VERBS (SIMPLE AND COMPLEX)

TAKING *zijn*

(All examples with a date of citation are taken from the newspaper *Trouw*).

SIMPLEX VERBS

naderen

We zijn daardoor de Japanners een heel eind genaderd.
In this way we have come quite a bit closer to the Japanese.
 (9/18/93)

volgen

De kerk is Jezus niet gevolgd.
The church has not followed Jesus. (5/18/94)

passeren

Volgens de OESO is Frankrijk het dieptepunt van de recessie gepasseerd.

According to the OESO, France is past the deepest point of the recession. (3/17/94)

DERIVED VERBS

ontwijken

Hij is/heeft die vraag ontweken.

He has evaded that question.

ontlopen

Hij is zijn achtervolgers niet ontlopen.

He has not escaped from his pursuers.

ontvluchten

Bijna de helft van de bevolking is Kaboel ontvlucht.

Just about half of the population has fled Kabul. (3/5/94)

ontschieten

Het was Courier even ontschoten.

This had slipped from Courier's memory. (6/4/94)

ontglippen

Het is me toch ontglipt.

It has escaped me. (9/17/93)

ontgroeien

En Andrea Jaeger. Was ook nauwelijks de luiers ontgroeid, toen . . .

And Andrea Jaeger. Had hardly outgrown the diapers, when . . . (5/18/94)

ontspringen

Ik ben de dans ontsprongen.

I have had a narrow escape.

PARTICLE VERBS

aangaan

Het politieke gevecht dat de Fransen zijn aangegaan

The political fight that the French have initiated (9/16/93)

oversteken

Volgens him zijn er zeker 700,000 Albanezen in Kosovo, die illegaal de grens met Albanie zijn overgestoken.

According to him, there are at least 700,000 Albanians in Kosovo, who have illegally crossed the border with Albania. (5/7/94)

overzwemmen

Veel Rwandezers zijn de grensrivier Kagera overgezwommen naar Tanzania.

Many Rwandans swam across the border river Kagera to Tanzania. (5/7/94)

overspringen

Zij is de sloot overgesprongen.

She jumped across the canal.

overtrekken

dat Franse soldaten de grens zouden zijn overgetrokken.

that French soldiers would have crossed the border. (6/22/94)

tegenkomen

Wie zou u liever nooit zijn tegengekomen?

Who would you rather never have met? (3/12/94)

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