Sitting stuck and standing scribbled

Productivity, structure, and meaning of posture verbs combined with a complementive past participle in Dutch

MA-scriptie Neerlandistiek: Nederlandse Taalkunde

Auteur: Maarten Bogaards (s1289292)

Begeleider: dr. Maaike Beliën

Tweede lezer: prof.dr. Sjef Barbiers

Aantal woorden: 20.952 (excl. tabellen en verwijzingen)

Inleverdatum: 12 juni 2019

Cover image: Henri Matisse, Icarus (1947)

Table of contents

Chapter 1

Introduction

1.1 Research problem

In Dutch, cardinal posture verbs (i.e. *zitten* 'to sit, *staan* 'to stand', and *liggen* 'to lie'[1]) are used for a wide range of linguistic purposes. Most prototypically, they are used posturally, as in (1). However, they can also be used locatively, to establish the position of the posture verb's subject, as in (2); copulatively, to attribute a property to the subject, as in (3); and even quotatively, in combination with a quotative marker such as *van* 'like', to introduce a depicted quotation attributed to the subject, as in (4) (Bogaards 2019*a*). Moreover, these verbs appear in an auxiliarized progressive pattern, which consists of a cardinal posture verb and an infinitival complement preceded by the infinitival marker *te* 'to'; (5) is an example.[2] This auxiliarized structure, which is called the posture progressive (Boogaart 1991, 1999; Lemmens 2005, 2015), construes the activity expressed by the infinitive as ongoing; Broekhuis & Corver (2015:628) remark that 'we are thus dealing with a progressive construction comparable to the English progressive construction', i.e. *to be V-ing*. Note that for the uses in (2)-(5), the English translations do not employ a posture verb, but instead the locative, copular, quotative, and progressive *to be*.[3]

(1) *Ik <u>zit</u> niet graag.* [postural]
'I do not like to sit.'

(2) *De boodschappen <u>zitten</u> in de tas.* [locative]
'The groceries are [lit. sit] in the bag.'

(3) *Mijn neus <u>zit</u> helemaal dicht.* [copulative]
'My nose is [sits] completely blocked.'

[1] *Cardinal* is to say that these verbs refer to 'the three basic postures of human beings' (Lesuisse & Lemmens 2018:43). Following Lemmens (2005), I distinguish these from the non-posture (movement) verb *lopen* 'walk' and the non-cardinal (posture) verb *hangen* 'hang'. Although these verbs appear in the infinitival pattern in (5), they do not seem to occur in the participial pattern investigated in this paper.

[2] For clarity of exposition, the examples in (1)-(5) all feature *zitten*, but *staan* and *liggen* can serve all these purposes as well, albeit with different constraints. In chapter 2, I discuss the similarities and differences between the three cardinal posture verbs in more detail.

[3] In the examples in this thesis, I will underline the key elements under discussion in the Dutch original, and their corresponding elements in the English translation.

(4) *Dus ik zat van, waar heb je het over?* [quotative]
'So I was [sat] like, what are you even talking about?'

(5) *De kinderen zitten een spelletje te spelen* [progressive]
'The kids are playing [sit to play] a game.'

The usages illustrated by (1)-(5) are well-known linguistic phenomena; especially the progressive pattern has received considerable and long-standing attention going back to at least Stoett (1923:13), who pointed out the semantic bleaching of posturality in these patterns.[4] By contrast, another Dutch posture pattern, consisting of a cardinal posture verb (CPV) and a past (or passive[5]) participle (PP), has not yet been the object of much linguistic research. Typical examples in the literature are *zitten opgescheept* 'to be [sit] stuck', *staan geschreven* 'to be [stand] written', and *liggen begraven* 'to be [lie] buried' (Haeseryn et al. 1997:963-964; Broekhuis & Corver 2015:993-994). To illustrate further, sentences (6)-(8)—from a parallel corpus of durative constructions in Dutch (Bogaards 2018)—present attestations of this pattern with *zitten*, *staan*, and *liggen*.

(6) *Aan een achteloos op het hakbord gegooide broodjesstomerdoek zaten nog heel wat stukjes deeg geplakt!*
'To a bread steaming cloth carelessly thrown on the chopping board, lots of pieces of dough were [sat] stuck!'

(7) *Elke bladzij stond volgepriegeld met namen en telefoonnummers van allerlei mensen*.
'Every page was [stood] scribbled full with names and phone numbers belonging to all kinds of people.

[4] Likewise, Brisau (1969:77) remarks that 'the auxiliary of aspect [*zitten*] has clearly lost its meaning completely'. Van den Toorn (1975:256) even states that 'every Dutch speaker' uses this pattern. Interestingly, as Van der Horst (2008:1807) points out, this meaning loss was observed as a new phenomenon—something the kids were doing—in the 2000s, with one language columnist even blaming contemporary Western culture: 'Us rich Westerners are sitting down more than ever.' (Sanders 2006; my translation). Stoett's, Brisau's, and Van den Toorn's observations suggest that the semantic bleaching process of CPVs has been going on for considerably longer than this popular analysis contends.

[5] In Dutch, like in English, the participles used in perfect constructions (with a temporal auxiliary, i.e. *zijn* 'to be' and *hebben* 'to have') and in passive constructions (with a passive auxiliary, i.e. *worden* 'lit. to become' and *zijn* 'to be') are formally identical. Haeseryn et al. (1997:959) differentiate between these types of participles terminologically by syntactic function: *voltooid deelwoord* 'past participle' or *passief deelwoord* 'passive participle'. I do not think it matters much which term is used to refer to the participle in this posture structure; what matters is how it is characterized in relation to other constructions with a participial element, both temporal and passive (as will be discussed in chapter 5). In this thesis, I will use the terms *past participle*, *participle*, and *PP* interchangeably to refer to the participial element in the structures under investigation.

(8) *Op de vloer van aangestampte aarde lag gelijkmatig een laag vers aangevoerd stro uitgespreid.*
'On the rammed earth floor, a layer of freshly supplied hay was [lay] evenly spread out.'

In (6) to (8), a PP (i.e. *geplakt* 'stuck', *volgepriegeld* 'scribbled full', and *uitgespreid* 'spread out') is linked to each clause's subject by means of a CPV. These combinations—which I will refer to as 'CPV-PP-patterns'—have not received as much attention as, for instance, the posture progressive; perhaps as a consequence, there is considerable disagreement in the literature on its structural and functional analysis. More specifically, there are competing analyses regarding (i) the productivity or fixedness of the pattern; (ii) the syntactic behavior of the PP; and (iii) the meaning of the pattern as a whole. This thesis sets out to evaluate these competing accounts using corpus data: by examining a large number of attestations of this pattern in both quantitative and qualitative terms, the issues of CPV-PP-patterns' productivity, structure, and meaning will be considered in depth. Before formulating the central research questions of this thesis, I will first introduce the above-mentioned three points of contention in the literature.

First, previous analyses of CPV-PP-patterns disagree on whether it constitutes a 'fixed' pattern or a productive one. Pauwels (1953:117), for instance, asserts that *staan geschreven* '[stand] be written' is a 'fixed expression'. Haeseryn et al. (1997:963-964) and Broekhuis & Corver (2015:993-994) more generally characterize CPV-PP-patterns as 'fixed combinations'; Haeseryn et al. qualify their characterization as 'combinations with a limited set of participles with a similar meaning' (1997:963). Rejecting this standpoint, Cornelis & Verhagen (1995:51) argue that CPV-PP-patterns

> are not purely idiomatic (contrary to what [Haeseryn et al. 1984 [1997]][6] seem to suggest) non-productive combinations. Within, of course, the limits of semantic compatibility all kinds of [PPs] may be combined with *liggen* […] *zitten* […] and *staan*.

In this quote, Cornelis & Verhagen flesh out the idea of 'fixedness' further by suggesting that CPV-PP-patterns are not in fact *idiomatic* and *non-productive*, as a fixed analysis would imply. At the same time, it is uncertain in their account where the 'limits of semantic compatibility' lie, and thus *how* productive the pattern is, or put differently, what constraints on its productivity

[6] Cornelis & Verhagen refer to the same analysis in Haeseryn et al. here as I mentioned earlier, albeit in an earlier edition.

can account for the fact that not all PPs can occur in the pattern.[7] These open questions will be addressed in this thesis by means of corpus data.

The second point of contention pertains to the syntactic behavior of the PP in these patterns. Importantly, previous analyses agree that CPV-PP-patterns as exemplified by (6)-(8) feature a PP that serves as some sort of *complement* to the CPV, i.e. not as an *adjunct* (Pauwels 1953; Cornelis & Verhagen 1995; Cornelis 1997; Haeseryn et al. 1997; Lemmens & Slobin 2008; Broekhuis & Corver 2015; Bogaards 2019*b*).[8] The research object of this thesis can thus more precisely be termed '*complementive* CPV-PP-patterns'.

However, analyses diverge on the question whether that complement is adjectival or verbal, or in other words, whether the CPV constructs a predicative relationship between the PP and the CPV's subject (adjectival) or functions as some sort of auxiliary to a participial main verb (verbal). The latter standpoint was taken by Pauwels (1953:113), Cornelis (1997:63), and Bogaards (2019*b*). Haeseryn et al. (1997:962) and Broekhuis & Corver (2015:993) both question a verbal analysis, but do not qualify the PP explicitly as adjectival and thus do not elaborate on the consequences of such an account. One possible consequence becomes visible in Van der Horst's (2008:1809) implicit grouping of CPV-PP-patterns under *copulative* use of CPVs, i.e. on par with the use of CPVs illustrated by (4), with an unambiguously adjectival predicate. In that sense, analyzing the syntactic status of the PP in these patterns also involves relating CPV-PP-patterns to structures that are formally and functionally similar. Both the issues of differentiating complementive and adjunctive relations between CPVs and PPs, and of relating complementive CPV-PP-patterns of which the syntactic structure is uncertain to unambiguously copulative use of CPVs, will be taken up in Chapter 2 and taken into account for the corpus research through a set of annotations presented in Chapter 3.

Third and last, there are different views on the meaning of the CPV-PP-pattern as a whole. Cornelis (1997:57-70) and Haeseryn et al. (1997:1421) point out its formal resemblance with the Dutch passive—which consists of the passive auxiliary *worden* 'lit. to become' and a PP—and argue that the combination of a CPV and a PP, and for that matter any 'auxiliary' combined with a PP, is fully analyzable (for the concept of analyzability, see Langacker 1991, ch.4;

[7] The observation that not just any PP can be combined with a CPV to produce a CPV-PP-pattern will be illustrated and developed in Chapter 2.

[8] I elaborate on the complement/adjunct distinction in Section 2.3.1.

Verhagen 1992). That is, the meaning of structures like *staan geschreven* or *liggen begraven* can be inferred from their constituent parts, in this case the PP and the CPV; what the CPV contributes according to Cornelis (1997:63) is the specification of 'a certain way of being with respect to position'. Haeseryn et al. (1997:1421) follow this analysis, contrasting the perfect passive *is aangekondigd* 'was announced' with *staat aangekondigd* 'is [stands] announced' and concluding that the latter, contrary to the former, encodes 'being in a standing state' (Haeseryn et al. 1997:1421).

Lemmens & Slobin (2008:23) put more focus on the relation of CPV-PP-patterns to the *locative* use of CPVs (as in (2)), placing them within what they call the 'locational domain'. According to them, the PP functions as a 'Disposition verb […] that is used when Manner is pertinent' (Lemmens & Slobin 2008:27). In other words, the added PP serves to encode not just a positional 'way of being' (Cornelis 1997) but a 'cognitively salient' disposition in relation to some location (Lemmens & Slobin 2008:28). For instance, in (8), *uitgespreid* 'spread out' encodes additional, pertinent dispositional information about the hay's location. This account differs in this sense from that of Cornelis (1997) and Haeseryn et al. (1997) in that it takes locative CPVs as its point of reference: it characterizes CPV-PP-patterns in terms of what the PP encodes *additionally* in comparison to locative CPVs without a PP. Cornelis (1997) and Haeseryn et al. (1997), on the other hand, depart from the meaning components of the Dutch passive and qualify CPV-PP-patterns in relation to what it adds vis-à-vis the passive. Both perspectives are valid, but an integrated account of CPV-PP-patterns may profit from combining them (cf. the discussion in Chapter 5).

Bogaards (2019*b*) contends that the CPV-PP-pattern as a whole is explicitly *resultative*, i.e. encoding the completion of the action expressed by the PP as the direct and salient cause of the state expressed by the CPV, constraining the PPs that can be selected for it—and thus potentially having explanatory power for the issue of productivity. A resultative account could be supplementary to Lemmens & Slobin's (2008) account in terms of location and disposition in the sense that the link between disposition and location could be analyzed as resultative. The analysis is also largely compatible with Cornelis' (1997:69) account of CPV-PP-patterns within 'a network of passive-like constructions' in Dutch, but ascribes an additional meaning component to CPV-PP-patterns situated in the link between CPV and PP that, according to Bogaards (2019*b*), cannot be explained syntagmatically or paradigmatically. That is to say: neither the sequence of CVP and PP (syntagm) nor the properties of CPVs or PPs in other

configurations (paradigm) can account for the postulated resultative link encoded by the pattern. Like the first two issues, these questions will be addressed on the basis of corpus data.

1.2 Research questions

Put very generally, the aim of this thesis is to examine the structural and functional properties of complementive CPV-PP-patterns, and in so doing to advance both the syntactic and semantic discussions on these patterns in the literature. More specifically, this concerns disagreements on (i) the pattern's fixedness or productivity; (ii) the syntactic status of the PP in its relation to the CPV; and (iii) the meaning of the pattern as a whole. The research questions below, which follow from the discussion in the literature as laid out in Section 1.1, clarify how this research problem will be approached. The questions are divided into a main question expressing the central aim formulated above, and four sub-questions, which make explicit how exactly these aspects will be considered.

Main question		*What are the structural and functional properties of patterns consisting of a posture verb (CPV) and a complementive past participle (PP)—i.e. CPV-PP-patterns—in Dutch?*
Sub-questions	*1.*	*What are the structural and functional properties of Dutch CPVs?*
	2.	*What are the structural and functional properties of Dutch PPs?*
	3.	*How do CPVs and PPs combine in Dutch?*
	4.	*Does the CPV-PP-pattern as a whole have a particular meaning, and if so, what is it?*
	5.	*Are CPV-PP-patterns to some degree extensible to new tokens (i.e. are they productive) or do they constitute a fixed set of collocations?*
	6.	*What is the syntactic relation between the PP and the CPV in these patterns?*

The first three sub-question lay the theoretical and empirical basis for the corpus investigation of CPV-PP-patterns. Their aim is to specify exactly which patterns are under investigation (specifically in relation to adjunctive and copulative structures, as mentioned in the previous section) and to provide an overview of the properties of CPVs and PPs discussed in the literature

that will facilitate their semantic and structural analysis. The fourth, fifth, and sixth questions correspond to the three aspects of CPV-PP-patterns that are the focus of this thesis: meaning, productivity, and structure, respectively. These three questions are also mutually related—a general meaning may be a source of constraints on productivity, for example—and as such are designed to cumulatively provide an answer to the main research question.

1.3 Outline

This thesis is structured as follows. Chapter 2 provides an overview of previous work on CPVs and PPs in Dutch, corresponding to the first sub-question of this thesis. It also elaborates on the non-complementive (adjunctive) use of PPs with CPVs and the relation of complementive CPV-PP-patterns to copulative use of CPVs, as well as why I think these categories need to be distinguished a priori. Next, Chapter 3 describes the procedures for data collection and corpus annotation, which are intended to put together a representative set of CPV-PP-patterns that is informative enough to treat research sub-questions 4-6 in both quantitative and qualitative terms. At the end of Chapter 3, I describe how the entire set of corpus items was narrowed down to relevant instances of complementive CPV-PP-patterns. This specified set of attestations is explored in both quantitative and qualitative terms in Chapter 4, where I explore the three aspects under investigation—meaning, productivity, and structure—in light of the corpus data. Finally, Chapter 5 concludes that CPV-PP-patterns are indeed productive, that constraints on that productivity can be accounted for in terms of *locativity* and *resultativity*, and that their structure appears highly heterogeneous: some PPs behave like adjectives, others like verbs. However, that heterogeneity is compatible with the properties of PPs in general, and the characteristics of CPV-PP-patterns in particular.

Chapter 2

Posture verbs and past participles in Dutch

As illustrated at the outset of this thesis, CPVs may perform a variety of roles in Dutch. This chapter presents a more detailed overview of these functions as following from previous research. First, Section 2.1 discusses functions of posture verbs other than those combined with participles. Since the body of work on CPVs is quite substantial, this discussion has a strictly functional character: besides their central properties, only those aspects will be discussed that will contribute to a better understanding of CPV-PP-patterns. In other words, the focus will be on aspects that can be applied in the characterization of these structures in terms of their productivity, structure, and meaning.

Section 2.2 then provides a brief characterization of PPs in Dutch. Section 2.3 zooms in on two structures featuring a CPV and a PP that are similar to the complementive patterns investigated in this thesis, but that show different syntactic behavior: adjunctive and copulative structures. Using two basic syntactic tests, I argue that these patterns fall outside the scope of this thesis.

2.1 Posture verbs in Dutch

This section will discuss three aspects of Dutch Cardinal Posture Verbs (CPVs): (i) the anthropocentric basis of their prototypical postural use; (ii) their locative and metaphorical extensions; and (iii) auxiliation and copulization.

2.1.1 Anthropocentric basis

The three Dutch CPVs are *zitten* 'to sit', *staan* 'to stand', and *liggen* 'to lie'. In their prototypical meaning of indicating posture, these verbs have an anthropocentric basis, i.e. they are based on the typical positions that human beings can be in (Lemmens 2002:104; Newman 2009). In their linguistic manifestations, these postures are systematically interrelated: *staan* encodes a vertical position, *liggen* a horizontal one, and *zitten* is in between the two (Van Oosten 1984; Lemmens 2002), resulting in what Lemmens (2002:105) calls an 'orientational cline' from maximally vertical *staan* to *zitten* to maximally horizontal *liggen*. Because they are anthropocentrically and experientially motivated, the orientational opposition between *staan* and *liggen* is also closely associated with notions of *control* and *resistance* or absence thereof (cf. Gibbs et al. 1994; Newman 2002; Lemmens 2007): human beings in a standing position can generally hold

that position on their own, whereas lying down may indicate that they lack sufficient bodily control to do so. Relatedly, *staan* can be considered the 'canonical', i.e. standard or default, posture (Van Oosten 1984; Lemmens 2002), with *zitten* and especially *liggen* constituting deviations from a basic human stance.

2.1.2 Locative and metaphorical extensions

As will have become clear from the five uses of Dutch CPVs—postural, locative, copulative, quotative, and progressive—discussed briefly at the beginning of Chapter 1, the 'semantic coverage' of *zitten*, *staan*, and *liggen* has been extended significantly from their prototypical postural meaning (Lemmens 2002:106). Lemmens (2007:262) distinguishes three basic categories of Dutch CPV use, the first of which is the *postural* use (cf. (1)) while the other two constitute extensions from that basic posturality: *locative*[9] and *metaphorical* uses. Locativity, illustrated by (2) in Chapter 1, extends the CPV's meaning from human posture to locating 'any entity' in physical space. The metaphorical use in a sense also serves to locate, but in 'abstract' or figurative space (Lemmens 2007:262).[10] Sentences (9) and (10)—from the corpus that is used in this thesis: OpenSoNaR (Oostdijk et al. 2013)—illustrate the locative-metaphorical distinction with *staan*.[11]

(9) *Mijn vader werkt bij het ministerie van Buitenlandse Zaken. En hij moest nu naar België omdat het Navo-gebouw hier staat.*
'My father works at the ministry of Foreign Affairs. And he had to move to Belgium now because the NATO building is [stands] here.'

(10) *In het belang van het kind moeten ouders bewust gemaakt worden van wat adoptie betekent. Het kind staat daarin centraal.*
'It is in the child's interest that parents be made aware of what adoption entails. The child is [stands] central to that.'

---

9 Lemmens uses the term *locational* here, but I have opted for *locative* to bring it in line with *quotative*, *copulative*, *progressive*, and *resultative*. *Locational* and *locative* thus have the same meaning in this thesis.

10 Whether or not locative and metaphorical uses of CPVs constitute discrete, distinct categories on the same level as the synchronic distinction between, for example, postural and progressive uses, is difficult to say; metaphorical extensions may be more conventionalized, e.g. *centraal staan in* 'to be [stand] central to' in (10), which cannot be used to locate in physical space; or they may be more ad hoc, e.g. *je zit in mijn hart* 'you are [sit] in my heart, i.e. you are very dear to me' which more closely resembles literal locative use of CPVs, cf. *er zit een bloedpropje in mijn hart* 'there is [sits] a blood clot in my heart'. For this reason I did not distinguish 'metaphorical CPVs' as a separate category in Chapter 1; the goal of its treatment here is to illustrate the scope of CPV extension in Dutch, and the role of metaphorical extension in the interpretation of CPV-PP-patterns.

11 Unless indicated otherwise, from this point onwards all example sentences were taken from this corpus.

In (9), the concrete (but inanimate) entity 'NATO building' is located in physical space, i.e. in Belgium, by means of the CPV *staan*; the selection of this CPV is motivated by the 'inherent vertical orientation' of buildings (Lemmens 2002:124). In (10), then, the generalized concept of 'the (adopted) child' is 'located' vis-à-vis adoption procedures and efforts to raise awareness on 'what adoption entails', i.e. at the center of this discussion; 'the child' is thus not located literally but metaphorically, within the abstract space of a societal and political conversation.

Two useful technical terms from the semantics of locativity and space are *figure* and *ground*, where *figure* refers to the entity that is located and *ground* to the entity in primary relation to which the figure is located (cf. Lemmens 2002, 2007). In the words of Talmy (1978:625), the figure 'is conceived as a variable the particular value of which is the salient issue' and the ground 'a reference-point […] with respect to which the figure's path or site receives characterization'. In (9) and (10), the NATO building and 'the adopted child' function as figure, while Belgium and something like 'understanding adoption' function as ground.

In the case of 'non-postural' use of CPVs, several semantic factors can be identified that drive the selection of a given CPV (Lemmens 2002, 2007). By 'non-postural', Lemmens (2002) means locative and metaphorical use of CPVs that does not necessarily correspond to the CPVs' orientational configurations (in terms of horizontality or verticality) that stem from the way humans sit, stand, or lie, i.e. the anthropocentric prototype. For the present purposes, I will discuss two of these driving factors, because they will prove relevant in the semantic characterization of PPs for the analysis of their productivity: the first is the *alignment* between figure and ground, which is important to understand *zitten* and *liggen* (Lemmens 2002); the second are so-called *image schemata*, which are relevant for *staan* (Lemmens 2007).[12]

The first semantic driving factor is what Lemmens (2002) calls the 'figure/ground alignment', which refers to the precise relation between figure and ground encoded by a given expression, in this case a CPV. For *zitten*, this alignment involves the figure being 'either ***closely contained by*** or in ***close contact with*** the ground' (Lemmens 2002:108, original emphasis). Although these kinds of figure/ground alignment do not directly conform to *zitten*'s prototypical middle

[12] The discussion below of locative (*figure/ground alignment*) and metaphorical extensions (*image schemata*) is thus not intended to be exhaustive, but rather to establish some of the Dutch CPVs' central semantic characteristics, which in turn function as points of reference for the characterization of the attested PPs' semantic coherence (for the analysis of CPV-PP-patterns' productivity) in Section 4.2.

position on the orientational cline, i.e. in between maximal horizontality and verticality, they have become an integral part of *zitten*'s semantics, leading Lemmens (2002) to term them 'CONTAINMENT-*zitten*' and 'CONTACT-*zitten*'. I will adopt these terms in this thesis. In the non-postural use of *zitten*, the notions of CONTACT and CONTAINMENT may be applied literally or figuratively, corresponding to the locative/metaphorical distinction discussed above.[13] Since the notions are rather similar, they also 'often co-occur' in one instance of *zitten* (Lemmens 2002:115). To illustrate and argue for the centrality of these semantic notions for non-postural *zitten*, Lemmens (2002) draws on a corpus, and some of the attested examples he provides are shown in (11)-(15) below (from Lemmens 2002:109-115). I have indicated for each sentence whether it constitutes literal or figurative CONTACT or CONTAINMENT (or both).

(11) *[…] of het stuk nu in de kast zit.* [literal CONTAINMENT]
'[…] whether the document is [sits] now in the closet.'

(12) *In elk kind zit een leraar*. [figurative CONTAINMENT]
'In every child is [sits] a teacher.'

(13) *Dit is een draagbare tafelklok, want er zit een handvat op.* [literal CONTACT]
'This is a portable tableclock, because there is [sits] a handle on it.'

(14) *Aan alle eenvoudige oplossingen […] zitten grote nadelen vast*. [figurative CONTACT]
'To all simple solutions […] enormous disadvantages are [sit] attached.'

(15) *Daarvoor zitten mensen in de gevangenis* […]. [literal CONTAINMENT and figurative CONTACT]
'For that, people are [sit] in prison […].'

A relevant 'figure/ground alignment'-related notion for non-postural *liggen* is that of 'geotopographical location' (Van Oosten 1984; Serra Borneto 1996), which conceptualizes the subject as a *point* or a *plane* on a line (Lemmens 2002:125). In terms of 'figure/ground alignment', the ground is conceptualized as a line in relation to which the figure is aligned with

[13] In this discussion of non-postural CPVs, I link *figure/ground alignment* to locative extension and *image schemata* (see below) to metaphorical extension. This distinction is compatible with the observation that the former is also used metaphorically, in the sense that image schemata constitute direct and conventionalized metaphorical extensions from the anthropocentric prototype, whereas figurative CONTAINMENT and CONTACT are only indirectly related to that prototype since they 'come after' the conventionalization of the locative extension.

different possible degrees of horizontal expansion (i.e. from a point to a plane). (16) and (17), from Lemmens (2002:125-130), are examples; note that (17) is again a metaphorical use of a locative (alignment) extension, similarly to (12) and (14).

(16) *In de zesdaagse oorlog in 1967 lag het American Conoly Hotel weer in de vuurlijn.*
'In the six-day war in 1967, the American Colony Hotel was [lay] in the line of fire again.'

(17) *Het handelen ligt in het verlengde van het denken*.
'Taking action is [lies in] the extension of thinking.'

The term 'geotopographical'—which is from Serra Borneto (1996)—in my view does not very straightforwardly capture the metaphorical extension of 'line alignment' *liggen*. For that reason, I will call these non-postural uses POINT-*liggen* and PLANE-*liggen*, by analogy with Lemmens' CONTACT-*zitten* and CONTAINMENT-*zitten*. Both POINT and PLANE are intended to evoke the two-dimensional image of a line (i.e. the ground).

A second relevant mechanism—besides the figure/ground alignment—are so-called 'image schemata' (cf. Lemmens 2007:285*ff*.), which refer to figurative or associative abstractions from the anthropocentric prototype that, through conventionalization, have become part of the (core) meaning of the CPV. Similarly to CONTACT and CONTAINMENT for *zitten*, these schemata deviate from the prototypical postural meaning, but do so through a direct metaphorical extension rather than a locative, physical one (cf. Note 12). A very frequent and productive conventionalized extension for *staan* is that of the depiction of text or images on some surface, e.g. written or printed words, painted scenery, screened images, or photographed people (Lemmens 2002:132; Lemmens 2007:290). Analogously to CONTAINMENT for *zitten*, Lemmens (2002:132) terms this schema IMPRINTMENT, which I likewise adopt. Examples (18) and (19) illustrate this use of *staan*; (19) is a figurative extension from this schema, as the speaker presumably does not refer to an actual 'top five' published on a page or screen, but merely utilizes this idea metaphorically to evaluate the movie vis-à-vis other movies.

(18) *Kijk papa. Ik sta op de foto.*
'Look daddy. I am [stand] in the picture.'

(19) *Deze staat in mijn top 5 slechtste films...*
'This one is [stands] in my top five of worst movies…'

In addition to these locative and metaphorical extensions, Dutch CPVs are also used in a particular locative construction in which figure and ground are inverted, or as Lemmens (2002:124) puts it: 'by promoting the ground to subject, […] participant status is conferred onto it, focusing more on the fact that the entire [setting] is affected' (cf. also Van Oosten 1984; Langacker 1991, who calls this the *setting construction*). This 'affectedness' generally means that ground is *filled* to a high degree with instances of the figure (cf. *vol* 'full' in the examples below). Sentence (20), from Lemmens (2002:124), illustrates this 'figure/ground inversion'. The figure may also be embedded in a prepositional phrase headed by *met* 'with', as in (21) and (22); moreover, as (22) shows, this construction can also be used metaphorically.[14]

(20) *De werkkamer ligt vol papieren*.
'The study is [lies] full of papers.'

(21) *Het podium staat vol met houten stoelen en tafels.*
'The podium is [stands] full of wooden chairs and tables.'

(22) *Het verbaasde haar, want haar hoofd zit vol met verhalen en beelden uit die tijd.*
'It surprised her, since her head is [sits] full with stories and images from that time.'

In sum, this subsection has presented some of the central conventionalized extensions, literal (locative) and figurative (metaphorical), that can account for the varied uses of CPVs in Dutch. Table 2.1 reiterates the relevant notions for each CPV, which will be instrumental in the semantic characterization of the set of PPs with which each CPV is attested.

zitten	***staan***	***liggen***
CONTACT	IMPRINTMENT	POINT
CONTAINMENT		PLANE

Table 2.1. *Central conventionalized extensions for each CPV*

Dutch CPVs have not only been extended semantically, however, but have also developed from lexical verbs indicating posture or location (i.e. the verbs discussed in this subsection) into

[14] Kutscher & Schultze-Berndt (2007:983) point out that this locative inversion also exist in German, and call it the '*full of* construction'.

structurally distinct verbs functioning as auxiliaries or copulas (cf. (3) and (5) in Chapter 1). These developments are the subject of the following subsection.

2.1.3 Auxiliation and copulization

From a typological perspective, the development of lexical CPVs into more grammatical elements such as auxiliaries and copulas is to be expected when CPVs are the default option for encoding spatial position, because it 'elevates' them, in the words of Kuteva (1999:192), 'to the status of basic, most common verb expressions and makes them thus appropriate source structures in auxiliation'. Heine & Kuteva (2002:278, 282) add to this the related potential of CPVs to develop into copulas (i.e. 'copulization').

As was shown in the previous subsection, CPVs are highly dominant in the Dutch locational domain, and sure enough, they have also developed into auxiliaries in an aspectual 'progressive' pattern (Boogaart 1991, 1999; Lemmens 2005, 2015), and into copulas with a restricted set of possible complements (Haeseryn et al. 1997:1124; Van der Horst 2008:1809). Both were introduced and illustrated in Chapter 1 (cf. (3) and (5)), and sentences (23)-(27) provide further examples: (23)-(24) for the progressive auxiliary pattern, which expresses that the action encoded by the infinitive (*zingen* 'to sing' and *slapen* 'to sleep', respectively) is going on, without reference to temporal start or end points; and (25)-(27) for the copulative use, in which the property encoded by the adjectival complement (*los* 'loose', *open* 'open', and *gevoelig* 'delicate') is attributed to the subject.

(23) *Het lijkt wel alsof Yorke voor een spiegel troosteloze slaapliedjes staat te zingen.*
'It is almost as if Yorke is singing [stands to sing] dreary lullabies in front of a mirror.'

(24) *Veel mensen liggen te slapen op het moment van de ramp en kunnen zich niet meer redden.*
'Many people are sleeping [lie to sleep] at the time of the disaster and cannot save themselves in time.'

(25) *Uw schoenveter zit los, meneer.*
'Your shoelaces are [sit] untied, sir.'

(26) *Sorry, de deur stond open, dus liep ik maar naar binnen.*
'Sorry, the door was [stood] open, so I went ahead and walked inside.

(27) *De nieuwe belastingsverhoging vanuit de federale regering ligt gevoelig.*
'The new tax increase from the federal government is [lies] delicate.'

Especially the 'copulization' of CPVs in Dutch is of interest here, due to its complex and as of yet unclear relation to the CPV-PP-patterns investigated in this thesis (cf. Secction 2.3.2). Diachronically, the development of CPVs into copulas in certain restricted contexts is likely related to a 'semantic bleaching' process in which the locativity of CPVs' spatial extensions (Section 2.1.2) eroded until the CPV no longer aligned a figure and ground, but instead served to encode a feature or property of the subject, i.e. copulatively (Van der Horst 2008:1809).[15] Metaphorical extensions, discussed extensively in the previous section, may have played a role in the erosion of locativity, by abstracting away from individual instances of physical space.

The diachronic developments examined briefly in this subsection underscore the flexibility of Dutch CPVs, as well as their typological probability of developing from lexical verbs into auxiliaries or copulas. One pertinent question is whether CPV-PP-patterns should be seen as the result of (one of) these developments: auxiliation and/or copulization. To further inform the empirical analysis addressing this question, the following section discusses previous research on PPs in Dutch. The key issues there are tied closely to the auxiliary/copula distinction laid out in this section, as the use of PPs is related to both structures in Dutch.

2.2 Past participles in Dutch

Past participles (PPs) have a 'two-sided character' in Dutch (Van der Horst 1995:201) in the sense that they share morphosyntactic properties with both verbs *and* adjectives (Elffers et al. 2014:53). This two-sidedness is also called 'transcategoriality' (e.g. by Booij 2002:71-76). When used in the Dutch perfect (consisting of a temporal auxiliary *hebben* 'to have' or *zijn* 'to be' and a PP), the PP functions as the clause's main verb (Haeseryn et al. 1997:954-960). Because it consists of two individual parts, the Dutch perfect has also been called 'compound tense' (Janssen 1994). In clear-cut cases of the perfect, the PP is analyzed as being derived directly from a verb by adding the prefix *ge-* and the (phonologically conditioned) allomorphic

[15] A further step in the conventionalization of combinations of copulative CPV and adjectival complement is the development into fixed verbal collocations, which can be signified orthographically in Dutch by writing the elements as a single word, e.g. *vaststaan* 'to be certain'. However, as Van der Horst (2008:1809) points out, it is very difficult or even impossible to draw any hard boundaries between copulative CPVs and collocations.

endings *-t* or *-d* to the verb stem (Haeseryn et al. 1997:67).[16] Sentences (28)-(39), from Haeseryn et al. (1997:109), illustrate the perfect with *hebben* and *zijn*.[17]

(28) *Ze heeft hard gewerkt.*
'She has worked hard.'

(29) *Ik ben gisteravond laat thuisgekomen.*
'I have come home late yesterday night.'

According to De Haan (1997) and Coussé (2011), the verbal form of a PP gets a *processual* interpretation, and the adjectival form a *resultative* interpretation. This is a difference in aspectual focus: the former highlights the process of the event encoded by the verb, including its completion and final state; in (28) and (29), for instance, the processes of *working* and *coming home* are profiled, but the perfect also presents them as complete. Elffers et al. (2014:53) call this an *afgerond geheel* 'rounded whole', i.e. the process is profiled as a discrete temporal entity.

The resultative interpretation, on the other hand, profiles a present state that 'is conceived as the result of the process in the verb stem' of the PP (Coussé 2011:616). An example is given in (30), from Coussé (2011:626), in which the PP *gesloten* 'closed' corresponds not to the process of *sluiten* 'to close' but rather to the state that is the result of *sluiten*, i.e. *gesloten zijn* 'being closed'. This focus on end state is made explicit by the adverb *continu* 'without interruption', which is incompatible in this case with a processual interpretation.

(30) *Zwembad Stadspark is sinds 23 oktober continu gesloten door problemen aan het elektriciteitsnet.*
'Swimming pool Stadspark has been closed without interruption since 23 October because of problems with the electricity grid.'

Additionally, as Elffers et al. (2014:53) point out, frequently used PPs can also categorically lose their verbal properties through meaning specialization. That is, they can lose their deverbal

[16] There are irregular cases with vowel alternations in the verb stem (e.g. *vinden* 'to find' → *gevonden* 'found') and prefixes in the stem that are preserved in the participle (e.g. *verplaatsen* 'to move' → *verplaatst* 'moved'), but these function according to the same morphological mechanism.

[17] For the sake of exposition, or more specifically to show their formal resemblance, I used the English present perfect in the translations for (28) and (29). However, the Dutch and English perfect do not have the same meaning or uses (cf. Boogaart 1999); for that reason, the use of the perfect in (28) and especially (29) is slightly awkward. More idiomatic translations could be 'she worked hard' for (28) and 'I came home late' for (29).

meaning (i.e. the meaning of the verb they were derived from paired with the aspectual and thematic meaning components of PPs discussed above) and take on static (i.e. *non-resultative*), adjectival meanings, while also fully behaving like adjectives morphosyntactically.[18] Clear examples are *geslepen* in the meaning of 'sly' and *gejaagd* in the meaning of 'restless' (Elffers et al. 2014:53). These adjectives exist alongside the deverbal PPs *geslepen* 'sharpened' as derived from *slijpen* 'to sharpen', and *gejaagd* 'hunted' as derived from *jagen* 'to hunt'. While they are formally identical on a lexical level, their meaning differences are evident, and their morphosyntactic analyses crucially differ. Such a non-resultative, stative adjective also exists for *gesloten*, in which case it means 'shy' or 'reserved' rather than 'closed'. The three interpretations of PPs, corresponding theoretically to two structural categories, are summarized and illustrated with *gesloten* in Table 2.2.[19]

processual	**resultative**	**stative**
profiles process in its entirety, including end point	profiles present state resulting process in verb stem	profiles present state that does not result from process in verb stem
verbal	adjectival (deverbal)	adjectival (non-deverbal)
(31) *Zwembad Stadspark is op 23 oktober gesloten door het stadsbestuur.* 'Swimming pool Stadspark has been closed on 23 October by the city council.'	(32) *Zwembad Stadspark is sinds 23 oktober is sinds 23 oktober continu gesloten door problemen aan het elektriciteitsnet.* 'Swimming pool Stadspark has been closed without interruption since 23 October because of problems with the electricity grid.'	(33) *Twee weken later praat de psycholoog met Robrecht. Hij is nogal gesloten.* 'Two weeks later, the psychologist speaks with Robrecht. He is rather shy.'

Table 2.2. *Interpretations of Dutch PPs, with syntactic analyses and examples*

The two 'kinds' of *geslepen*, *gejaagd*, and *gesloten* in the sense of processual/resultative versus stative readings generally constitute clear-cut cases of verbal and adjectival PPs, as the contrast between (31)-(32) and (33) illustrates. In the case of perfects with *zijn* 'to be', the distinction between processual and resultative PPs is not always very straightforward, however, especially if the sentence structure does not provide clues as to the semantic properties or syntactic

[18] An example of morphological behavior of adjectival PPs is that the comparative adjectival suffix *-er* can be attached to them, e.g. *Mijn jongste kind is geslotener dan mijn oudste* 'My youngest child is more introverted than my oldest.' A difference in syntactic behavior is that adjectival PPs cannot follow the clause's main verb in the subordinate verbal cluster, e.g. acceptable *…dat mijn kind gesloten is* '…that my child is introverted' versus unacceptable **…dat mijn kind is gesloten*. This syntactic difference will be discussed in more detail in Section 2.3.2.

[19] The processual example in (31) was reformulated from example (30)/(32) from Coussé (2011:626); the stative one in (33) is from the OpenSoNaR corpus.

behavior that set them apart. Such clues include subordinate verbal cluster order (cf. Note 18 and Section 2.3.2), the presence of a *door*-bepaling indicating the agent in a passive construction as in (31) (which implies that *zijn*+PP is an instance of the perfect passive), and the presence of a stative adverb incompatible with a processual reading, like *continu* in (32). However, in the absence of such structural or contextual clues, it is in some cases impossible to disambiguate the status of the PP, as Coussé (2011) shows. For example, the underspecified PP *gesloten* 'closed' in (33), again from Coussé (2011:626), could correspond to either the processual or a resultative reading in (31)-(32).

(33) *Het zwembad is gesloten.*
'The pool is closed.'

Coussé (2011) argues that PPs in Dutch are fundamentally ambiguous with regard to the salience of a processual or resultative interpretation (Cornelis 1997:69 calls this same property 'fuzzy'), and that contextual indicators are only used for disambiguation when language users feel that this is pragmatically necessary for the linguistic situation at hand. In other words, when the interpretation and status of the PP do not matter, they do not need to be pinned down. I follow Coussé's (2011) analysis in this thesis, because her characterization of resultative/processual ambiguity in terms of a *continuum* is very useful for the semantic and structural characterization of CPV-PP-patterns. The 'continuum representation of ambiguous past participles', as Coussé (2011:630) terms it, implies that PPs can be 'extremely adjectival' (e.g. static *gesloten* in (33)) or 'extremely verbal' (e.g. processual *gewerkt* in (28)), but also *intermediate* in terms of the salience of resultative or processual focus. Figure 1 presents Coussé's (2011:630) visualization of the 'resultative-processual continuum'.[20]

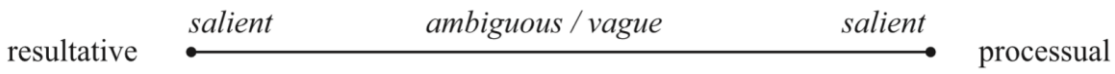

Figure 2.1. *Continuum representation of ambiguous PPs (Coussé 2011:630)*

The theoretical presupposition that the status of 'the PP' in CPV-PP-patterns need not be pinned down to *one* structural or semantic property will prove instrumental in their characterization further on (Section 4.3).

[20] Importantly, Coussé's (2011) use of the term *resultative* is not necessarily the same as my application of it in the characterization of the meaning of CPV-PP-patterns in Section 4.1, which I specify there as 'locative resultativity'. How exactly Coussé's use of the term differs from mine, will be discussed in Section 4.3.

2.3 Adjuncts and copulas

The previous two sections demonstrated the structural and semantic complexity of both CPVs and PPs. It therefore probably does not come as a surprise that, when they are combined, it is not always clear what either of their status is, in terms of both individual word classes (is the PP adverbial, verbal, or adjectival, and is the CPV a lexical verb, an auxiliary, or a copula?) and the relation between them (are CPV and PP in an adjunctive or complementive relationship?). This section is an attempt to draw some preliminary boundaries between these categorizations on the basis of some of the corpus material analyzed more thoroughly in Chapter 4. What makes this especially complex, is that the allocation of syntactic function for CPV (main verb or non-main verb) and PP (adjunct or complement) overlaps partially and asymmetrically. This is visualized in Table 2.3, which shows the three theoretically possible combinations in terms of word classes and CPV-PP relationship: (i) lexical CPV and adverbial PP (main CPV, adjunctive relationship); (ii) copulative CPV and adjectival PP (main CPV, complementive relationship); and (iii) auxiliary CPV and verbal PP (non-main CPV, complementive relationship).[21]

status CPV		**CPV**	**PP**		**relationship CPV-PP**
main	{	lexical	adverbial	→	*adjunctive*
		copulative	adjectival	}	*complementive*
non-main	←	auxiliary	verbal		

Table 2.3. *Possible combinations of CPV-PP word classes and relationships*

As was pointed out in Section 2.2, the syntactic status of Dutch PPs is in general notoriously 'fuzzy' (Cornelis 1997) or 'ambiguous' (Coussé 2011), and the distinctions between the three combinations presented in Table 2.3 are thus not always clear, or may even be gradient in some cases. This makes matters even more complex, as the gradient distinctions between these three categories cover both the asymmetrical main/non-main and adjunctive/complementive distinctions. However, there are also more clear-cut cases belonging to the first two categories, which behave rather differently syntactically than CPV-PP-patterns as exemplified in (6)-(8). Sentences (34)-(35) below are examples; in terms of the typology of Dutch CPV usage introduced at the outset of this thesis, these sentences respectively feature a *locative* (main verb)

[21] It should be pointed out here that the very *existence* of the third category (auxiliaries) for combinations of CPVs and PPs is a matter of debate (cf. Section 1.1) and that its inclusion in Table 2.3 is thus, for now, only a theoretical postulation by analogy with the auxiliation of CPVs in infinitival progressive patterns (cf. Section 2.1.3). Note furthermore that in terms of the CPV-typology presented at the start of Chapter 1, the notion *lexical* in Table 2.3 may correspond to either *postural* or *locative* use of CPVs (and possibly *quotative*, but this kind of CPV use has not yet been adequately researched).

CPV with an adverbial (adjunctive) PP, and a *copulative* (main verb) CPV with an adjectival (complementive) PP.[22]

(34) *De hoofdpersoon, de 77-jarige Vera Poetina, zit verweesd op het station van het onherbergzame dorpje Metechi in Georgië.* [A0348]
'The protagonist, the 77-year old Vera Poetina, is sitting at the station of the desolate village of Metechi in Georgia, abandoned.'

(35) *Ik wil echt niet vanalles goedpraten of bagatelliseren, maar het ligt genuanceerd.* [E0307]
'I really do not want to justify or trivialize all these things, but it is [lies] nuanced.'

Cases like (34) and (35) can be distinguished on the basis of divergent syntactic behavior in subordinate clauses, as will be shown in the following subsections. Importantly, considering the limited scope and exploratory nature of this thesis, I start out by assuming the validity of two basic syntactic tests from the literature: one determining adjunctive vs. complementive status (i.e. differentiating (34) from (6)-(8)); the other distinguishing verbal from adjectival complements (i.e. differentiating (35) from (6)-(8)). The following two subsections introduce and illustrate these relatively clear-cut cases and their corresponding syntactic tests: subordinate intra-cluster and extra-cluster acceptability for the former, and ordering acceptability within the subordinate verbal cluster for the latter.

2.3.1 Adjunctive PPs

A general distinction can be made between PPs that serve as some sort of complement to a CPV, i.e. the patterns investigated in this thesis, and PPs that function adjunctively to a CPV. In a general sense, complements and adjuncts are distinguished in their relation to the structural 'core or nucleus' of a clause (Matthews 2014:10): complements belong to it, adjuncts do not. The former are thus in a closer relationship with the predicate of a clause than the latter. This difference in relationship can also be observed in CPVs and PPs appearing alongside each other in a clause. To illustrate, compare (36) and (37). Although both feature the CPV *zitten* combined with a PP (*verstopt* 'hidden' and *uitgehongerd* 'starved', respectively), the connection between the two and relatedly the meaning of the sentences appears to differ.

[22] The codes in between square brackets (e.g. *[A0348]* in (34)) indicate that the sentence before it came from the CPV-PP corpus compiled through the set of procedures described in Chapter 3. Every code is a unique identifier assigned to each corpus item; with it, the items and their annotations can be retrieved by querying for the code under the column titled '#'. The complete corpus was attached to this thesis in a separate Excel file.

(36) *Een gestyleerde versie van het gezicht van Venus staat afgebeeld op de Italiaanse euromunten.* [C1740]
'A stylized version of the face of Venus is [stands] depicted on the Italian euro coins.'

(37) *Ontspannen staat hij met collega Ger van der Meer achter de counter van hun hengelsportzaak.* [D0113]
'He is standing with collegue Ger van der Meer behind the counter of their angling shop, relaxed.'

The idea that they are different is reflected by my English translations: in (36), CPV and PP were translated combinedly as 'is depicted', whereas (37) renders the CPV separately as 'is standing and the PP as 'relaxed', all the way at the end of the clause (just like in (E)). These translations nicely illustrate the intuition that the relation between CPV and PP in these sentences is not the same, and make it more concrete it the form of an integrated versus separated expression in English. In this way, the intuition can be described as a tighter (complementive) or looser (adjunctive) connection between CPV and PP in (36) and (37), respectively: in (37), 'he' is 'relaxed', and coincidentally also in a standing position, whereas in (36) the face *standing* somewhere (English *being* somewhere) appears to not merely coincide with its 'depicted' status, but to be intertwined with it. Put differently, (37) can be paraphrased in Dutch by saying that the clause's subject *staat en ontspannen is* 'is standing and is relaxed', while in (36) this is not possible: saying that the face *staat en afgebeeld is* 'is standing and is depicted' is not an adequate paraphrase, or at the very least a considerably more awkward one than for (37).

Running ahead slightly, a possible further characterization of the 'intertwinedness' of CPV and PP in (36) (as opposed to their relative autonomy in (37)) may be the *resultative link* postulated by Bogaards (2019*b*), which was discussed briefly in Chapter 1. That is to say: the specific way in which CPV and PP seem to be intertwined may be resultative in nature, so that in (36) the *standing* (English *being*) is encoded as a direct and salient consequence of the *depicting*, whereas in (37) the *standing* has not been caused by *relaxing*. Similarly, in this analysis, the *sitting* in (34) was not directly caused by the *abandoning*. The resultative analysis will be explored more thoroughly and systematically in Section 4.1, but it is useful at this point to already consider its potential explanatory value for a moment, since it constitutes a more specific conception of the complement/adjunct distinction under discussion here.

In syntactic terms, this distinction can be made more concrete and rendered more systematic by means of a syntactic test generalizing over the behavior of complements and adjuncts in Dutch subordinate clauses. The relevant generalization pertains to the acceptability of elements permeating the subordinate verbal end cluster (cf. Broekhuis & Corver 2015:1112-1117). In other words, adjunct or complement status can be determined by assessing whether it is acceptable for a PP to *enter* or *leave* the sequence of verbs at the end of subordinate clauses in Dutch. In fact, the acceptability patterns for these positions are maximally asymmetrical for complements and adjuncts: complements may not leave the subordinate verbal end cluster, and adjuncts may not enter it. This can be illustrated by subordinating (36)-(37) and assessing the acceptability of intra-cluster and extra-cluster positions, as is shown in (36') and (37') below. The abbreviations ADJN and CMPL in subscript indicate whether the position, according to this syntactic test, corresponds to an adjunctive (ADJN) or complementive (CMPL) relationship between PP and CPV. An asterisk (*) indicates categorical unacceptability of a certain position, while superscripted question marks ($^{?}$ and $^{??}$) signify degrees of doubt regarding acceptability, where two question marks signify a higher degree of doubt than one question mark.[23]

(36') *…dat een gestyleerde versie van het gezicht van Venus *<afgebeeld>$_{ADJN}$ op de Italiaanse euromunten <afgebeeld>$_{CMPL}$ staat <afgebeeld>$_{CMPL}$.*

(37') *…dat hij <ontspannen>$_{ADJN}$ achter de counter van hun hengelsportzaak <*ontspannen>$_{CMPL}$ staat <*ontspannen>$_{CMPL}$.*

The syntactic test applied in (36') and (37') indicates that the PP *afgebeeld* 'depicted' in (36) serves as some sort of complement to the CPV, as I found the extra-cluster positions categorically unacceptable, while the PP *ontsnappen* 'relaxed' in (37) is in an adjunctive relationship with the CPV, following from the categorical unacceptability of the intra-cluster positions. This test also identifies (34) as adjunctive, as illustrated below by (34'). (38) gives a final example of an adjunctive CPV-PP-pattern with corresponding syntactic behavior in (38').

(34') *…dat Vera Poetina <verweesd>$_{ADJN}$ op het station van het onherbergzame dorpje Metechi in Georgië *<verweesd>$_{CMPL}$ zit *<verweesd>$_{CMPL}$.*

[23] The acceptability judgements in this thesis were all executed by the author, a native speaker of Netherlandic Dutch, and thus reflect intuitions belonging to Northern varieties. The intuitions may differ for Southern varieties (cf. Haeseryn et al. 1997:1067-1071; Broekhuis & Corver 2015:1116-1117). Because of the exploratory nature of this thesis, I focus exclusively on the Northern variety; this methodological decision was also applied to the data collection procedure (cf. Section 3.1).

(38) *De moeder en haar kinderen zaten uitgehongerd in het hokje.* [A0085]
'The mother and her children were sitting in the little room, famished.'

(38') *...dat de moeder en haar kinderen <uitgehongerd>$_{ADJN}$ in het hokje *<uitgehongerd>$_{CMPL}$ zaten *<uitgehongerd>$_{CMPL}$.*

These cases illustrate that not just any PP can be combined with a CPV to form a CPV-PP-pattern: there appear to be restrictions on the productivity excluding PPs, among which are *verweesd* 'abandoned', *uitgehongerd* 'famished' and *ontspannen* 'relaxed', from entering into a complementive relationship with a CPV. The example sentences discussed in this subsection thus confirm the observations in the literature that the pattern is somehow constrained, be it in terms of a semi-fixed set of verbs (Haeseryn et al 1997; Broekhuis & Corver 2015) or along the lines of 'boundaries of semantic compatibility' (Verhagen & Cornelis 1995; Cornelis 1997).

Notably, there are also cases in which both subordinate clause positions—intra-cluster and extra-cluster—are acceptable for the PP, or in which the acceptability is not very clear. In a main clause, such PPs can be ambiguous with respect to their adjunctive or complementive status, since main clauses do not impose the same ordering restrictions as subordinate clauses. Take (39), for example, for which *both* subordinate the adjunctive and complementive position is acceptable for the PP *opgestapeld* 'stacked', as illustrated by (39'). In (40), then, the adjunctive status of the PP *verstopt* 'hidden' is uncertain, because my acceptability judgement for subordinate extra-cluster position is inconclusive, as illustrated by (40'): it certainly strikes me as less acceptable than in (39'), yet not as categorically unacceptable as (36').

(39) *Dozen Chimay- en Corona-bier stonden opgestapeld naast Deense wodka in een kelder vol exquise wijnen.* [C1349]
'Boxes of Chimay and Corona beer were [stood] stacked next to Danish vodka in a cellar full of exquisite wines.'

(39') *...dat dozen Chimay- en Corona-bier <opgestapeld>$_{ADJN}$ naast Deense wodka <opgestapeld>$_{ADJN}$ in een kelder <opgestapeld>$_{CMPL}$ stonden <opgestapeld>$_{CMPL}$.*

(40) *De drugs zaten verstopt tussen duizenden blikken met zwarte olijven.* [A0129]
'The drugs were [sat] hidden among thousands of cans of black olives.'

(40') *…dat de drugs* $^{??}$*<u>verstopt</u>*$_{ADJN}$ *tussen duizenden blikken met zwarte olijven <verstopt>*$_{CMPL}$ *zaten <verstopt>*$_{CMPL}$*.*

Although the boundary between adjunctive and complementive PPs may thus sometimes be fuzzy, there are also clear adjunctive cases, as was illustrated by the other examples in this subsection. For the purposes of this thesis, it is important to exclude such items from the analysis, since they constitute a separate pattern in syntactic and possibly also semantic terms. For that reason, the intra-cluster/extra-cluster syntactic test will be employed as a diagnostic for the annotation of the corpus data. This will be laid out in more detail in Section 3.2.

Table 2.4 summarizes the syntactic test discussed and applied in this section in terms of the visualization in Table 2.3, connecting intra-cluster unacceptability to adjunctive status and intra-cluster acceptability to complementive status. The CPV-PP-patterns that are the subject of this thesis correspond to the highlighted part of the table, i.e. complementive patterns the precise nature of which is unclear.

		CPV	**PP**		**relationship**		**syntactic test**
main	{	lexical	adverbial	→	*adjunctive*	→	*intra-cluster unacceptability*
non-main	← {	copulative auxiliary	adjectival verbal	}	*complementive*	→	*intra-cluster acceptability*

Table 2.4. *Possible combinations of CPV-PP word classes and relationships, including adjunctive/complementive syntactic test*

2.3.2 Copulative CPVs

There is consensus in the literature that CPV-PP-patterns are complementive, which in my view is confirmed by the intra-cluster/extra-cluster syntactic test discussed in the previous subsection (cf. Table 2.4). However, there is substantial disagreement on the *kind* of complement that the PP constitutes in this pattern, i.e. an adjectival or verbal one, which directly ties into the 'two-sided' or 'transcategorial' character of Dutch PPs (cf. Section 2.2). The question whether CPV-PP-patterns behave more like copulative or auxiliary patterns will be taken up in Section 4.3, but it is necessary and useful here to point out that unambiguously copulative CPV-patterns (such as (3) and (35)) behave differently with regard to their syntax than at least a subset of complementive CPV-PP-patterns. The corresponding syntactic test pertains to the order of verb and complement (in this case CPV and PP) *within* the verbal end cluster of the subordinate clause. This means that this syntactic test is applicable only to PPs that permeate the verbal

cluster, i.e. complements, which makes sense, since its purpose is to distinguish different types of complements.

The relevant generalization here is as follows: the order complement-verb (i.e. PP-CPV) is acceptable for both adjectival and verbal complements, but the order verb-complement (i.e. CPV-PP) is acceptable only for verbal complements, not for adjectival complements (cf. Haeseryn et al. 1997:1067-1069; De Sutter 2006:6-7; Broekhuis & Corver 2015:993-994). These two orders have traditionally been referred to as respectively 'green' (PP-CPV) and 'red' (CPV-PP) order, terms coined by Pauwels (1953) in her investigation into the regional distribution of ordering patterns. The constructed example sentences below illustrate the unacceptability of red subordinate verbal cluster order with an adjectival complement: in (41) with the basic copula *zijn* 'to be', and in (42) with the CPV copula *zitten* 'to sit' combined with a non-participial adjectival complement. Sentence (43) is from the corpus and thus features a CPV and a PP, but when subordinated in (43') it behaves exactly the same as (41) and (42). The same goes for (35) from the start of this section, cf. (35').

(41) *...dat het broodje <lekker> is *<lekker>*.
'…that the sandwich is tasty.'

(42) *...dat mijn neus <dicht> zit *<dicht>*.
'…that my nose is [sits] blocked.'

(43) *De verhoudingen tussen de verschillende Zwolse drukkers lagen gecompliceerd.* [E0712]
'The relations between the various printers in Zwolle were [lay] complicated.'

(43') *...dat de verhoudingen tussen de verschillende Zwolse drukkers <gecompliceerd> lagen *<gecompliceerd>*.

(35') *Ik wil echt niet vanalles goedpraten of bagatelliseren, behalve dat het <genuanceerd> ligt *<genuanceerd>*.

Sentences (35) and (41)-(43) thus appear structurally equivalent in the categorical unacceptability of red order in the subordinate verbal cluster. Does this test then imply that CPV-PP-patterns unambiguously boil down to copulative CPVs combined with an adjectival PP? Not necessarily, since CPV-PP-patterns in fact occur regularly in red order, cf. (44)-(45).

(44) *Ik heb heel sterk het gevoel dat in oude afbeeldingen iets nieuws zit verborgen.* [A0024]
'I have a very strong feeling that in old pictures something new is [sits] hidden.'

(45) *Twee woorden waarmee de antisport-identiteit van de stad ligt vastgelegd: Entrée gratuite.* [E0019]
'Two words with which the anti-sport identity of the city is [lies] recorded: Entrée gratuite [i.e. Entrance free].'

The difference between corpus items like (43) and (44)-(45) appears to correspond to the 'static' versus 'resultative/processual' distinction discussed in Section 2.2 (cf. Table 2.2): *gecompliceerd* 'complicated' was likely not derived from the verb *compliceren* 'to complicate', and, in the words of Elffers et al. (2014:53), 'has become a *real* adjective' (my emphasis) and is thus clearly copulative. The same holds for *genuanceerd* 'nuanced' in (35). Conversely, (44) and (45) may constitute adjectival, intermediate, or verbal cases, but their status is certainly not given a priori. It is therefore desirable to draw a preliminary boundary between unambiguous copulatives like (35) and (43) on the one hand, and unclear cases like (44)-(45) on the other, and to filter out the former beforehand for the analysis of CPV-PP-patterns.

Table 2.5 summarizes the syntactic test illustrated in this subsection in terms of Tables 2.3-2.4. The highlighted part represents all complementive corpus items, except those that are clearly copulative. The corpus annotations presented in Chapter 3 will be aimed at narrowing the corpus down to the items represented by precisely this part of the table.

relationship CPV-PP		**CPV**	**PP**		**syntactic test**
complementive	{	copulative	adjectival	→	*red order unacceptable*
		↕ *status unclear* ↕		→	*red/green test inconclusive*
		auxiliary	verbal	→	*red order acceptable*

Table 2.5. *Possible combinations of complementive CPV-PP word classes and relationships, including red/green syntactic test*

This chapter has laid the groundwork for the investigation in this thesis, by clarifying the semantic and structural versatility of both CPVs and PPs, indicating exactly which kinds of CPV-PP-patterns are under investigation, and establishing how to recognize them. These insights will be 'converted' to corpus annotations in the next chapter.

Chapter 3

Method

This chapter describes how the corpus data were collected (Section 3.1) and annotated (Section 3.2), as well as how noise was removed (Section 3.3), for the purpose of analyzing the data in light of the research questions. The annotations make it possible to differentiate between the types of CPV-PP relations discussed in Chapter 2 (i.e. adjunctive, complementive/copulative, and complementive/unclear), and to further investigate the relevant patterns.

3.1 Data collection

CPV-PP-patterns were investigated using attested data from the OpenSoNaR reference corpus of contemporary written Dutch, which contains 500 million tokens (Oostdijk et al. 2013). Both the order CPV-PP and PP-CVP were considered.[24] These were extracted from the corpus using six queries—for each of the three CPVs and two orders—yielding 8,044 hits. These queries, formulated in Corpus Query Language (CQL), are presented below as (46)-(51).

(46) [lemma="zitten" & pos="WW.*pv.*"] [pos="WW.*vd.*vrij.*"]
(47) [pos="WW.*vd.*vrij.*"] [lemma="zitten" & pos="WW.*pv.*"]
(48) [lemma="staan" & pos="WW.*pv.*"] [pos="WW.*vd.*vrij.*"]
(49) [pos="WW.*vd.*vrij.*"] [lemma="staan" & pos="WW.*pv.*"]
(50) [lemma="liggen" & pos="WW.*pv.*"] [pos="WW.*vd.*vrij.*"]
(51) [pos="WW.*vd.*vrij.*"] [lemma="liggen" & pos="WW.*pv.*"]

In these queries, each expression between square brackets represents one unit. In the first unit, *lemma* tracks down each conjugation of a given verb, here of each respective finite CPV; *pos* stands for 'part of speech' and specifies that the posture token must be verbal (*WW.**) and finite (*pv*.*). The ampersand connecting these two properties specifies that both must be true. In the following unit, *pos* specifies that the token must be verbal (*WW.**) and a past participle (*vd.**) that is used 'freely' (*vrij.**), i.e. not as an attributive adjective. This produces two queries per posture verb, one for the order CPV-PP (46, 48, and 50), the other for PP-CPV (47, 49, and 51).

[24] This means that instances where CPV and PP were seperated by one or more words were not included in the analysis. This is no problem, since there is no theoretical reason to presume that such items differ in any relevant way from items where CPV and PP are side by side, at least for complementive structures. In fact, this decision helps to filter out adjunctive items in subordinate clauses, which may be separate, contrary to complementive items (cf. Section 2.3.1).

In addition to the structural filters in (46)-(51), two metadata filters were applied, excluding translated texts and texts from Belgium. The former prevents translation effects from distorting frequency data, since previous research suggests that translated and non-translated discourse differ both structurally and semantically (e.g. Vandevoorde et al. 2016). The latter excludes CPV-PP-patterns that are exclusive to Southern varieties of Dutch, e.g. *verveeld zitten met* 'not know how to cope with', because the syntactic tests that are used as diagnostics are based on generalizations over Northern Dutch varieties. Since these meta-filters limit the number of hits, they also make it feasible to annotate all items yielded by these queries. These queries and filters produce the following numbers of items:

query	structure	items
(46)	*zitten* PP	915
(47)	PP *zitten*	1,304
(48)	*staan* PP	2,595
(49)	PP *staan*	1,760
(50)	*liggen* PP	715
(51)	PP *liggen*	755
total	**<PP> CPV <PP>**	**8,044**

Table 3.1. *Number of hits per corpus query, before noise removal and annotation*

Among the items in Table 3.1 are three simply types of noise, which were all excluded: (i) PP and CPV being in a different syntactic relationship entirely; (ii) the token tagged as CPV or PP not in fact being a CPV or PP; and (iii) a sentence occurring twice in the corpus (in which case the second occurrence was removed). The following corpus items illustrate noise types (i) and (ii): in (52)-(53), PP and CPV are not in a direct syntactic relationship; in (54)-(55), a queried token was tagged incorrectly.

(52) *Eenmaal aangepakt zat je eraan vast.* [B1172]
'Once accepted you were [sat] stuck with it.'

(53) *Het stadion waar het duel wordt gespeeld ligt op nog geen tien kilometer van de plaats waar in december president Musharraf van Pakistan aan twee moordaanslagen ontsnapte.* [F0001]
'The stadium where the match will be played is [lies] less than ten kilometers away from the site where in December president Musharraf of Pakistan survived two assassination attempts.'

(54) *Tabaksfabrikanten stonden zwaar onder druk na een rechterlijke beslissing in Florida.* [C0172]
'Tobacco manufacturers were [stood] heavily under pressure after a court ruling in Florida.'

(55) *De zoethoutthee is in opmars, maar er kan ook zoethoutextract zitten in kauwgum, Belgisch bier en ouzo.* [B0682]
'Licorice tea is becoming more popular, but there can also be [sit] licorice-extract in chewing gum, Belgian beer, and ouzo.'

Removing these types of noise from the corpus leaves 6,386 remaining items; these were annotated according to the procedures laid out in the next section.

3.2 Annotation procedure

The previous chapter presented an overview of properties of CPVs in Dutch, both generally and combined with PPs. The functions and patterns that were distinguished necessitate annotation procedures that differentiate between the various relationships than can exist between combinations of CPVs and PPs: complementive and adjunctive relations in the entire set of corpus items; and copulative and unclear relations within the complementive subset. These relations were made visible by annotating for five properties. This section will go over these annotations one-by-one, explaining their purpose and application.

3.2.1 Adjunctive or complementive status of the PP

PPs located next to a CPV may be in an adjunctive or complementive relationship with that CPV. This status difference corresponds to divergent syntactic behavior in the verbal end cluster of subordinate clauses, as was shown in Section 2.3.1. For the purpose of corpus annotation, this difference in behavior can be employed as a diagnostic that systematically establishes a given PP's status: each item is reformulated as a subordinate clause (if it is not one already) and both PP positions—i.e. within and outside the verbal end cluster—are assessed in terms of their acceptability. If only the intra-cluster position is acceptable, the PP is tagged as a complement; if only the extra-cluster position is acceptable, the PP is tagged as an adjunct.

Importantly, ambiguous items, i.e. whose PP is acceptable in both intra-cluster *and* extra-cluster position, are tagged as complementive. The reason for this is that this outcome of the syntactic test shows that a PP *can* function as complements to a CPV, which makes it relevant for the analysis of CPV-PP-patterns. In addition, the fact that a PP can function adjunctively to a CPV does not preclude it from serving as a complement to such a verb. For examples of adjunctive, complementive, and ambiguous corpus items, see Section 2.3.1.

3.2.2 Copulative or unclear status of the PP

Complementive PPs that are beside a CPV may be in a copulative relationship with that CPV, i.e. as a 'substitutive copula', as was explained in Section 2.1.3. It was then demonstrated in Section 2.3.2 that such copulative patterns differ from the CPV-PP-pattern under investigation in that the PP categorically cannot follow the CPV, whereas this is more doubtful in other cases. The annotation of this feature thus comprises reformulating the item as a subordinate clause (again, if it is not one already) and judging the acceptability of red order (CPV-PP). If it is acceptable or merely doubtful, it is tagged as an unclear CPV-PP-pattern; if it is judged categorically unacceptable, it is tagged as a copulative one. For examples, see Section 2.3.2.

3.2.3 Presence of locative adjunct in the clause

The third feature is the presence or absence of a locative adjunct in the clause. This feature serves to relate the corpus items to the more prototypical locative use of CPVs discussed in Chapter 2.1, assessing Lemmens & Slobin's (2008) claim that CPV-PP-patterns belong to the locational domain. This also includes the 'inverted' structures with the ground as the subject and the figure in a prepositional phrase headed by *met* 'with', as was illustrated by (21)-(22). (56) is an example of a corpus item with a locative adjunct, (57) without one, and (58) featuring the inverted *met*-structure; the adjuncts are underlined. Note that the ground in (58) is 'the Kennedy administration'.

(56) *Je vraagt je de hele tijd af of er <u>in de Nederlandse politiek</u> ook zo'n verhaal verborgen ligt.* [F0462]
'You constantly wonder whether there such a story is [lies] also hidden <u>in Dutch politics</u>.'

(57) *Ook de percentages waarmee de topinkomens zijn gestegen, staan vermeld.* [C0368]
'The percentages by which the highest incomes rose, are [stand] also mentioned.'

(58) *De Kennedy-regering zat volgestouwd <u>met verlichte Bilderbergers</u>.* [A0425]
'The Kennedy administration was [sat] packed full <u>with enlightened Bilderbelgers</u>.'

3.2.4 Main or subordinate status of the clause

Fourth is the status of the clause in which the CPV-PP-pattern is embedded: a main or subordinate clause. This is relevant because the acceptability judgements in the literature about CPV-PP-patterns' ordering behavior (i.e. Haeseryn et al. 1997; Broekhuis & Corver 2015)

pertain only to subordinate clauses. Since these judgements are used as arguments for (and against) particular analyses of the PP's syntactic status, demarcating a subset of subordinated CPV-PP-patterns in the corpus will allow for comparing these judgements to attested data in quantitative terms in Chapter 4. Item (59) is an example of a main clause featuring a CPV-PP-pattern, (60) a subordinate one; the clause is underlined.

(59) *De weg naar voorspoed en legitimiteit ligt bezaaid met obstakels*. [E0137]
'The road to prosperity and legitimacy is [lies] strewn with obstacles.'

(60) *Ze kunnen niet gebruik maken van hun traditionele migratieroute naar Angola en Zambia omdat die met landmijnen ligt bezaaid*. [E0215]
'They cannot use their traditional migration route to Angola and Zambia because that is [lies] strewn with landmines.'

3.2.5 Presence of resultative prefix on the PP

The final annotation indicates whether the PP has a resultative prefix, e.g. *vol-* 'full' in *volgeschreven* 'written full'. The purpose of this annotation is to characterize the meaning of the pattern as a whole, which was hypothesized to be resultative in Chapter 1; the reasoning behind this annotation is that a high frequency of resultative prefixes correlates with a high degree of 'resultativity' in the meaning of the pattern. The prefixes that were considered resultative were the following: *aan-* 'to', *aaneen-* 'together', *af-* 'off', *be-*, *bij-* 'at', *dicht-* 'closed', *door* 'through', *in-* 'in', *ineen-* 'into itself', *neer-* 'down', *om-* 'around', *onder-* 'under', *ont-* 'un-', *op-* 'on', *opeen* 'on top of each other', *open-* 'open', *samen-* 'together', *tentoon-* 'on display', *terug-* 'back', *toe-* 'towards', *uit-* 'out', *uiteen-* 'apart', *vast-* 'stuck', *ver-*, *vol-* 'full', *weer* 're-', and *weg-* 'gone'.

The reasoning behind this is that such prefixes profile a precise endpoint and end state, and that a high frequency of them at the aggregate level indicates that the pattern itself tends to profile that point and state and the resultative relationship between them. (61)-(63) are examples; the prefix is underlined. For instance, (63) profiles the state *vol* 'full' as it results from *volpakken* 'packing full', constructing a resultative link between *volgepakt* 'packed full' and *zat vol* 'was [sat] full' precisely through the resultative prefix.

(61) *Op trage samba-reggaeritmes trokken lange stoeten mensen langs het Palacio da Aclamaçaõ waar Amado lag opgebaard.* [E0340]
'To slow samba-reggae rhythms long rows of people passed the Palacio da Aclamaçaõ where Amado was [lay] laid out.'

(62) *De Farizeeën hielden zich strikt aan de joodse wetgeving zoals neergeschreven staat in* [sic.] *eerste Vijf Boeken van de bijbel.* [D1103]
'The Pharisees strictly observed the Jewish laws as is [stands] written down in first Five Books of the bible.'

(63) *De publieke tribune zat volgepakt met studenten, slachtoffers, academici en vertegenwoordigers van NGO's*. [A0551]
'The public gallery was [sat] packed full with students, victims, academics, and NGO representatives.'

3.3 Removing simple and complex noise

The 8,044 corpus items were first annotated for complementive or adjunctive status. Because adjunctive structures are not directly relevant for the present investigation, thereby constituting a type of 'noise', they were treated in tandem with the simple types of noise distinguished in Section 3.1; because they are more difficult to identify, I call them 'complex noise'. Table 3.2 presents the numbers of complementive, adjunctive, and simple noise items in the corpus, both for each CPV and overall.

	<PP> *zitten* <PP>		**<PP> *staan* <PP>**		**<PP> *liggen* <PP>**		**total**	
	n	%	n	%	n	%	N	%
complementive	1,599	72,1%	3,377	77,5%	1,075	73,1%	6,051	75,2%
adjunctive	131	5,9%	113	2,6%	75	5,1%	319	4%
simple noise	489	22%	865	19,9%	320	21,8%	1,674	20,8%
total	**2,219**	**100%**	**4,355**	**100%**	**1,470**	**100%**	**8,044**	**100%**

Table 3.2. *Overview of complementive, adjunctive, and simple noise items*

With a total of 4%, the adjunctive items make up only a small part of the corpus, which can be attributed to the methodological decision to annotate ambiguous items (i.e. that are acceptable in both adjunctive and complementive position) as complementive because this shows that they *can* appear in the complementive structures under investigation. This annotation step reduces the number of corpus items under investigation by 1,993 items, or roughly 25%, to 6,051 items.

More than four fifths of these reduction comes from the removal of simple noise (1,674/1,993=84%); the remainder is made up by unambiguously adjunctive PPs.

The next step was to exclude unambiguously copulative items, which differ from the structures under investigation in that red order (CPV-PP) in the subordinate verbal cluster is categorically unacceptable and in that the PP is clearly a static adjective, i.e. not derived from a verb. Whether or not these criteria apply is for the most part not very clear: the red/green order acceptability test produces mixed judgements among different speakers and even uncertain judgements from individual speakers. Still, some cases *are* clear-cut and these need to be excluded a priori. All cases where there was even the slightest doubt about the abovementioned criteria were tagged 'unclear' and included in the analyses in the following sections—most importantly, in the structural analysis in Section 4.3.

Table 3.3 presents the numbers of clear and unclear cases of copulative structures, and Table 3.4 specifies the PPs that were deemed clear-cut copulative patterns. PPs that are outlined in between two CPV rows were attested for both those CPVs, e.g. *gebeiteld* was attested for both *zitten* and *staan* in a clearly copulative structure, and *verlaten* for both *staan* and *liggen*.

	<PP> *zitten* <PP>		**<PP> *staan* <PP>**		**<PP> *liggen* <PP>**		**total**	
	n	%	n	%	n	%	N	%
clearly copulative	47	2.9%	85	2.5%	26	2.4%	158	2.6%
unclear	1,552	97.1%	3,292	97.5%	1,049	97,6%	5,893	97.4%
total	**1,599**	**100%**	**3,377**	**100%**	**1,075**	**100%**	**6,051**	**100%**

Table 3.3. *Overview of clearly copulative and unclear items within complementive subset*

<PP> *zitten* <PP>	<PP> *staan* <PP>	<PP> *liggen* <PP>
gebakken		
gebeiteld		
		gecompliceerd
		genuanceerd
geramd		
	gespannen	
		geteisterd
	gewonnen	
gewrongen		
		omgekeerd
	uitgespreid	
	verbaasd	
	verbijsterd	
	verbluft	
		vergruizeld
	verheugd	
	verlamd	
	verlaten	
	verloren	
		verpletterd
	verrukt	
	verslagen	
	verspreid	
	versteld	
	verstijfd	
	verstomd	
verstopt		
	verwilderd	
		verwoest

Table 3.4. *Overview of PPs deemed clearly copulative*

Due to the cautious application of the copulative/non-copulative annotation procedure, the clearly copulative patterns comprise only a small portion of the complementive subset, varying from 2.4% to 2.9% among the individual CPVs and averaging out at 2.6%. This leaves 5,893 CPV-PP-patterns of which the syntactic relation between CPV and PP is unclear, and which form the primary dataset for the quantitative and qualitative characterization of CPV-PP-patterns in the next chapter.

The clear-cut cases shown in Tables 3.3-3.4 are illustrated by corpus items (64)-(65). Note how red order (CPV-PP) is categorically unacceptable for these cases, as indicated by the starred cluster-final PPs. (The starred PPs were added in to illustrate the unacceptability of red order; the cluster-initial PPs are in their attested position.)

(64) *Zijn gemoedsgesteldheid toont heel duidelijk hoezeer hij <gewrongen> zit <*gewrongen>.* [B1112]
'His state of mind shows very clearly how much he is [sits] constrained.

(65) *De Amerikaanse verkiezingsstrijd wordt altijd gevoerd met een hardheid waarover de Europeanen <verbaasd> staan <*verbaasd>.* [D0671]
'The American electoral battle is always waged with a harshness by which the Europeans are [stand] surprised.

As an additional 'sanity check', I verified whether the 158 items that were tagged as clearly copulative did not feature red order (CPV-PP) in subordinate clauses, and indeed, all subordinate corpus items that were tagged as such have green order (PP-CPV). These 158 items were excluded from further analysis In the remaining 5,893 items, this relationship is not so clear, and neither is their syntactic behavior. The remaining 5,893 items are analyzed quantitatively and qualitatively in the next chapter.

Chapter 4

Results

This chapter presents the results of the corpus compilation and annotation procedures described in Chapter 3. More specifically, it seeks to formulate an answer to the fourth through sixth sub-questions of this thesis, characterizing CPV-PP-patterns in terms of their meaning, productivity, and structure. The corpus data will be examined both in quantitative terms, by aggregating over different sets of annotations, e.g. comparing clause type (main/subordinate) with verbal cluster order (red/green) to analyze the patterns structurally; and in qualitative terms, by zooming in on individual corpus items, e.g. discussing the semantic relation between CPVs and PPs to explore the idea of a 'resultative' meaning. First, I analyze the meaning of the CPV-PP-patterns in the corpus (Section 4.1), next is their productivity (Section 4.2), and last is their structural behavior (Section 4.3).

4.1 Meaning of the pattern

Several proposals have been made in previous research regarding the meaning of CPV-PP-patterns: Cornelis (1997) and Haeseryn et al. (1997) claim it specifies a 'way of being with respect to position' vis-à-vis the passive and perfect; Lemmens & Slobin (2008) make a similar claim in their characterization of the PP as a 'cognitively salient disposition' but connect it more explicitly to the locational domain; and Bogaards (2019*b*) suggests that the link between PP and CPV is resultative. In the following subsections, I will first explore locativity in the corpus data, and then resultativity.

4.1.1 Locativity of CPV-PP-patterns

All 5,893 relevant corpus items were annotated for the presence or absence of a locative adjunct. Table 4.1 presents the results of this annotation procedure: the distribution of locative adjuncts over the CPV-PP-patterns in the corpus.

presence of loc. adjunct	*zitten*		*staan*		*liggen*		total	
	n	%	n	%	n	%	N	%
locative adjunct	1189	76.6%	2753	83.6%	938	89.4%	4880	82.8%
no adjunct	294	18.9%	524	15.9%	48	4.6%	866	14.7%
'inverted' *met*-adjunct	69	4.5%	15	0.5%	63	6%	147	2.5%
total	**1,552**	**100%**	**3,292**	**100%**	**1,049**	**100%**	**5,893**	**100%**

Table 4.1. *Distribution of locative adjuncts over CPVs*

Table 4.1 shows that a locative adjunct is present in a very large number of cases, varying from 76.4% for *zitten* to 89.4% for *liggen*, and averaging out at almost 83% overall. For a complete characterization of locativity, the *met*-adjuncts should also be included, since they likewise encode the location of a figure and ground, only in mirrored positions (i.e. with the ground as subject and the figure in the adjunct). This produces an even higher figure of 81.1% locative adjuncts for *zitten*, 84.1% for *staan*, and a striking 95.4% for *liggen*, averaging out at 85.3%. Lemmens & Slobin's (2008) connection of these patterns to the locational domain thus appears to be strongly supported by the corpus data.

It can be added here that corpus items with locative adjuncts across all CPVs occur in both literal and figurative meanings, thereby corresponding to both the locative and metaphorical categories of CPV use distinguished by Lemmens (2007). Items (66)-(67) illustrate locative and metaphorical use of the combination *zitten gevangen* 'be [sit] imprisoned': in (66) there is the physical prison of the internment camp 'Erika'; in (67) that prison is an abstract, metaphorical space constructed through agreements and coercion, described as 'an imposed silence'.

(66) *Zijn vader, ook verzetsman, zat gevangen in kamp Erika in Ommen.* [A0182]
'His father, also a member of the resistance, was [sat] imprisoned in camp Erica in Ommen.'

(67) *De grote en kleine partijen zitten gevangen in een opgelegd stilzwijgen, […].* [A0347]
'The large and small parties are [sit] imprisoned in an imposed silence.'

The question remains whether the roughly 15% of items without a locative adjunct are indeed non-locative, or whether there is some implicit ground that can be reconstructed contextually or on the basis of the CPV's and/or PP's meaning. I examined the 866 items without a locative adjunct for implicit locativity by checking whether a basic locative adverb *er* 'there' or *ergens* 'somewhere' could be added felicitously and without substantially altering the meaning. For instance, in (68)-(69), *er* or *ergens* can be supplemented, either because the CPV and PP imply in a general sense to locate (e.g. *onderduiken* 'going into hiding' in (68) implies being located in a specific hiding place or set of hiding places) or because the context specifies a location (e.g. it is clear in (69) that *het blad* 'the magazine' from the preceding clause is the place where the letter was printed). In other words, supplemented *ergens* in (68') has a highly general meaning whereas *er* in (69') has a specific antecedent, i.e. *het blad* 'the magazine'. Both can be said to be implicitly locative, however.

(68) *De fractievoorzitter las tevens een brief voor van Kamerlid Ayaan Hirsi Ali, die sinds de moord op Van Gogh zit ondergedoken.* [A0041]
'The party leader moreover read a letter from MP Ayaan Hirsi Ali, who since the murder of Van Gogh is [sits] in hiding.'

(68') *[…] die sinds de moord op Van Gogh ergens zit ondergedoken.*

(69) *Ook rkk.nl, het blad van de rooms-katholieke kerk in Nederland, staat in het teken van het vasten. De Vastenbrief van de Nederlandse Bisschoppenconferentie staat afgedrukt en wordt uitgelegd.* [C1224]
'Rkk.nl, the magazine of the Roman Catholic church in the Netherlands, also has a fasting theme. The Lent pastoral letter from the Dutch episcopal conference is [stands] printed and is explained.'

(69') *De Vastenbrief […] staat er afgedrukt […].*

There were also cases of '*met*-inversion' in which the figure appears to be implicit, i.e. the ground functions as subject but there is no *met*-adjunct. Here, I tested for implicit locativity by adding the corresponding prepositional adverb *ermee* 'with it', cf. (70) and (70').

(70) *Door die zandverplaatsingen worden wrakken als de BZN 10, die ooit totaal bedolven lagen, plotseling zichtbaar.*
'Because of those sand movements, wrecks like the BZN 10, that once were [lay] totally buried, suddenly become visible.'

(70') *[…] wrakken als de BZN 10, die er ooit totaal mee bedolven lagen, […].*

Finally, there were items where *er*, *ergens* or *ermee* could not be added, or where it was not very clear whether or not this could be done, cf. (71) and (71') below.

(71) *In 'Ingooigem' ensceneert de auteur een dialoog. De aangesprokene is dan telkens het meisje dat hem vergezelt: "Zie, het land ligt toegedekt."*
'In 'Ingooigem', the author stages a dialogue. The addressee is then each time the girl that accompanies him: "Look, the land is [lies] tucked in."'

(71') *[…] "Zie, het land ligt* $^{??}$*er/*ergens/*ermee toegedekt."*

In other words, it is unclear whether the CPV in these items locates a given figure somewhere (literally or figuratively) while the PP indicates the disposition of that 'locatedness', or whether the property expressed by the PP is attributed to the subject without a sense of locativity. These items function similarly in that sense to the unambiguously copulative cases discussed in Section 2.3.2, e.g. (35), repeated below as (72) and behaving similarly to (71') in (72').

(72) *Ik wil echt niet vanalles goedpraten of bagatelliseren, maar het ligt genuanceerd.* [E0307]
'I really do not want to justify or trivialize all these things, but it is [lies] nuanced.'

(72') *[…] maar het ligt *er/*ergens/*ermee genuanceerd.*

It should be noted that items without implicit locativity were quite rare, averaging out at only 4.4% of the total set of items without a locative adjunct, as is shown in Table 4.2 below.

implicit locativity	*zitten*		*staan*		*liggen*		total	
	n	%	n	%	n	%	N	%
yes (*er/ergens/ermee* felicitous)	284	96,6%	504	96.2%	40	83.3%	828	95.6%
no/unclear (*er/ergens/ermee* infelicitous)	10	3.4%	20	3.8%	8	16.7%	38	4.4%
total	**294**	**100%**	**524**	**100%**	**48**	**100%**	**866**	**100%**

Table 4.2. *Distribution of implicit locativity over patterns without locative adjunct*

As a percentage of all 5,893 corpus items, no/unclear explicit/implicit locativity makes up an even smaller percentage, at 0.6% (38/5,893=0.006). This makes a striking 99.4% of the corpus locative in some way. Items like (71) therefore likely constitute a residual category of 'copulaesque' CPV-PP-patterns resulting from the cautious application of the red/green syntactic test (cf. Section 3.3). This intermediate category between clear copulativity and clear locativity suggests that there may be a subtle synchronous cline for the relation between CPV and PP, from the 'locative disposition' (Lemmens & Slobin 2008) of sentences like (66)-(70) to the conventionalized copulativity and non-locativity of sentences like (72), perhaps diachronically accounted for by the metaphorical erosion of physicality discussed in Section 2.1.3. The great majority—in fact, nearly all—of the CPV-PP-patterns can be accounted for in terms of locativity, however, very much confirming that CPV-PP-patterns are a part of the 'locational domain' (Lemmens & Slobin 2008).

4.1.2 Resultativity of CPV-PP-patterns

Having established the strong locativity of CPV-PP-patterns, the next meaning component to examine is that of resultativity, i.e. the idea that the completion of the action encoded by the PP is the direct and salient cause of the state encoded by the CPV. This can be examined at an aggregate level through the distribution of resultative prefixes (*neer-* 'down', *vol-* 'full', *uit-* 'out', and so on; cf. Section 3.2.5), the idea being that such prefixes construct an explicit resultative link between the PP and the CPV. This distribution is shown in Table 4.3.

presence of res. prefix on CPV	*zitten*		*staan*		*liggen*		total	
	n	%	n	%	n	%	N	%
resultative prefix	949	61.2%	1840	55.9%	995	94.9%	3784	64.2%
no resultative prefix	603	38.8%	1452	44.1%	54	5.1%	2109	35.8%
total	**1552**	**100%**	**3292**	**100%**	**1049**	**100%**	**5893**	**100%**

Table 4.3. *Distribution of resultative prefixes over all items*

Resultative prefixes are quite frequent on the PPs in CPV-PP-patterns, but the distribution varies considerably per CPV, ranging from just over half for *staan* (55.9%) to nearly all PPs for *liggen* (94.9%). The PPs for *zitten* are in between at 61.2%, and the average over all corpus items is 64.2%. These figures suggest that the end point and state profiled by resultative prefixes are salient for a majority of CPV-PP-patterns, but much more so for *liggen* than for *zitten* and *staan*. In the terms by which PPs were characterized in Section 2.2, this may suggest that *zitten* and *staan* overall have a more *processual* profile, with more focus on the actions leading up to the present state, while *liggen* has a more *resultative* profile, focusing on the end point and the resultant state connected to it (cf. Coussé 2011).

This quantitative line of reasoning remains rather abstract, however, so it is useful to explore this argument further by means of individual instantiations of CPV-PP-patterns, especially vis-à-vis non-CPV-PP-patterns (i.e. adjunctive and copulative structures) which a resultative account would predict to be *non*-resultative (or at least not resultative in the same way) since it analyzes the resultativity as a property of the CPV-PP-pattern. (73)-(78) present complementive corpus items with and without a resultative prefix for each CPV; for convenience of analysis the resultative prefix is in each case *vast-* 'stuck'. I discuss the items with a resultative prefix first, and then move on to those without one.

(73) *Sa'idi betast de trapleuning waaraan hij veertien dagen <u>vastgeketend</u> <u>zat</u>.* [B0624]
'Sa'idi touches the banister to which he <u>was</u> [sat] <u>chained</u> for fourteen days.'

(74) *En zelfs toen de stoelen in rijen aan de vloer stonden vastgeschroefd en de deuren dicht waren, was niet iedereen even aandachtig.* [C2027]
'And even when the chairs were [stood] screwed down to the floor and the doors were closed, not everyone was equally attentive.'

(75) *Ze vond dat deze actie indruiste tegen het recht op religieuze vrijheid dat in de Duitse Grondwet sinds 1949 ligt vastgelegd.* [F0025]
'She thought that this action went against the right to religious freedom that is [lies] recorded in the German constitution since 1949.'

In (73)-(75), the actions encoded by the PP, i.e. *vastketenen* 'to chain', *vastschroeven* 'screw down', and *vastleggen* 'record' have a clear resultative relation to the state encoded by the combination of CPV and PP. Moreover, that resultant state appears to be *locative* itself, as is to be expected from the dominance of locativity that was found in the previous subsection. That locativity is, again, both literal and figurative: in (73) and (74) the actions of *vastketenen* and *vastschroeven* have caused the figures to be firmly aligned physically with the ground, whereas that firm alignment is metaphorical in the case of *vastleggen* in (75). Notably, the resultative locativity encoded by the CPVs appears to be coded to hold *alongside* the PPs' resultant state: that is, the states *vastgeketend* 'chained', *vastgeschroefd* 'screwed down', and *vastgelegd* 'recorded' still hold, or perhaps *precisely* hold, after their corresponding actions were completed. Based on these items, a resultative account (Bogaards 2019*b*) may thus be specified in two ways: (i) the resultativity appears to be locative in nature, in the sense that the completion of the action encoded by the PP has led directly to some literal or figurative location encoded by the CPV; and (ii) the PP's completion has resulted in not only the CPV's locative state, but also the 'dispositional' state—to borrow Lemmens & Slobin's (2008) term—encoded by the PP itself.

The resultative analysis thus seems to be supported by corpus items with resultative prefixes, but how about items without such prefixes? (76)-(78) provide three examples.

(76) *Haal ook het plaatje(deksel) weg waar het filtertje in zit geclikt, dan krijg je veel meer ruimte […]*. [A0329]
'Also remove the disc(lid) into which the filter is [sits] clicked, then you get a lot more room.'

(77) *Ook moest hij niets hebben van de klachten van zijn overbuurvrouw dat een van de twee camera's aan zijn gevel recht op haar huis stond gericht.* [C0005]
'He also refused to acknowledge the complaints from his opposite neighbor that one of the two cameras on the front of is house was [stood] aimed straight at her house.'

(78) Het lukte de helft van de proefpersonen niet om te plassen terwijl hun hoofd gefixeerd lag in een PET-scanner. [F0102]
'Half of the test subjects were not able to urinate while their head was [lay] secured in a PET scanner.'

Although (76)-(78) do not feature any resultative prefixes, the resultative connection that followed from my analysis of (73)-(75) is apparent in these items as well. In (73), an act of *clikken* (or *clicken*)[25] 'clicking' has led to *geclikt zitten* 'being clicked', and the same goes for *richten* 'aiming' → *gericht staan* 'being aimed' and *fixeren* 'secure' → *gefixeerd liggen* 'being secured'. Again, the result is in each case a locative state encoded by the CPV and further specified by the PP's resultant state. So, although end point and resultative state are not always made explicit by means of a resultative prefix, such a prefix appears not to be necessary for the pattern to encode resultative meaning.

As I noted above, this would also imply that CPV-PP-combinations that are not instances of the CPV-PP-pattern, do not feature this resultative link. I already pointed out briefly in Section 2.3.1 that this in my view may indeed differentiate complementive CPV-PP-patterns from adjunctive ones. To further explore this possibility in light of the analysis discussed in this section, (79) and (80) present two additional adjunctive corpus items.[26]

(79) Hij staat verveeld voor de etalage van een fotowinkel in Utrecht Oost. [C0004]
'He is standing in front of the display window of a picture store in Utrecht East, bored.'

(80) *Ik lig uitgeput in bad, te moe om te beseffen dat mijn kind op mijn buik ligt.* [E0264]
'I'm lying in the bathtub, exhausted, too tired to realize that my child is lying on my belly.'

---

[25] This is in fact not a very common Dutch verb; it seems to have been formed here by analogy with the English expression *to click into*, i.e. 'to secure something in such a way that you hear a clicking sound'. In my view, the fact that the resultative link *clicken → geclikt zitten* is construed *also* with a highly uncommon verb further supports the position that the resultativity is a property of the pattern.

[26] Recall that their adjunctive status was established through subordinate intra-cluster inacceptability (Section 2.3.1), cf. (79') *…dat hij <verveeld>$_{ADJN}$ voor de etalage *<verveeld>$_{CMPL}$ staat *<verveeld>$_{CMPL}$* and (80') *…dat ik <uitgeput>$_{ADJN}$ in bad *<uitgeput>$_{CMPL}$ lig *<uitgeput>$_{CMPL}$.*

Contrary to (73)-(78), the PPs in (79)-(80) do not profile a completed action—*vervelen* 'to bore' and *uitputten* 'to wear out'—resulting in the state encoded by the combination of CPV and PP. Put more concretely, the 'boring' and 'wearing out' did not lead directly or relevantly to the 'standing in front of the display windows' or the 'lying in the bathtub'. Instead, the two hold at the same time, without the clausal pattern profiling any salient relationship between them.

Does the same hold, then, for the clearly copulative patterns distinguished in Section 3.2? (81)-(82) provide two further examples of those structures.[27]

(81) *Ik stond verrukt over zoveel branie, waarin ik de essentie zelf der poëtische hooghartigheid meende te herkennen.* [C1887]
'I was [stood] thrilled with this much swank, in which I thought I recognized the essence itself of poetic arrogance.'

(82) *Maar het onderzoek in Ede laat zien dat de situatie zelfs eerder omgekeerd ligt.* [F0375]
'But the investigation in Ede shows that the situation even rather is [lies] the other way round.'

The CPV and PP in these items also deviate from the 'resultative locativity' of (73)-(78), but in different ways than (79)-(80). First, the CPV appears not to locate at all: the subject is not indicated to stand anywhere in (81), nor is it encoded to lie anywhere, even metaphorically, in (82). Second, the PP does not encode any action that can be completed since it constitutes a 'specialized' stative adjective (in the sense of Section 2.2) that is not derived from a verb stem. The locative-resultative link characterizing (73)-(78) is thus made impossible on both counts.

In this section, I have argued that the combined notions of location, disposition, and resultativity can account for the CPV-PP-patterns under investigation not only in the characterization of their meaning as such, but also in their semantic differentation from syntactically divergent patterns. Taking resultativity—or something along the lines of 'resultative locativity' or 'locative resultativity'—as the core meaning of CPV-PP-patterns helps to make sense of the complexity and gradience involved in differentiating adjunctive, copulative, and complementive patterns. I will also consider the consequences of the resultative account in the analyses of CPV-PP-patterns' productivity and structure in the following subsections.

[27] Recall that their copulative status was established through subordinate red order unacceptability (Section 2.3.2), cf. (81') *…dat ik over zoveel branie <verrukt> stond *<verrukt>* and (82') *…dat de situatie zelfs eerder <omgekeerd> ligt *<omgekeerd>*.

4.2 Productivity vs. fixedness

Previous analyses of CPV-PP-patterns disagree on how 'fixed' they are, i.e. whether they constitute 'fixed combinations' (Haeseryn et al. 1997:963) or even 'collocations' (Broekhuis & Corver 2015:993), or, alternatively, that they may feature 'all kinds of PPs' albeit 'within the limits of semantic compatibility' (Cornelis & Verhagen 1995:51). This section addresses this question on the basis of the 5,893 complementive, not clearly copulative corpus items that remain after the annotations in Section 3.3.

To make the concept of productivity more concrete, I take from Barðdal's (2006) approach to syntactic productivity a set of quantitative and qualitative measures that can in general be used to assess the productivity of linguistic schemas at different levels of abstraction. The main quantitative measures are type frequency—which abstracts over sets of tokens featuring the same PP—and its proportion to the token frequency.[28] The qualitative measure that I use to supplement this quantitative perspective is 'semantic coherence' (Barðdal 2006:469), i.e. whether sets of types can be grouped under some generalized or abstracted meaning. The idea behind this is that a high degree of semantic coherence in a set of corpus items (i.e. many or all tokens being semantically similar) corresponds to a lower degree of productivity for the pattern, since it suggests that the pattern is not extended to new, semantically distant tokens. Taken together, these quantitative and qualitative measures count as evidence for or against a 'fixed' analysis. Finally, since all of these measures are gradual in nature, I follow Barðdal (2006) in taking productivity to be a gradual notion, i.e. not binary: patterns are not simply productive or non-productive, but can be productive to different degrees.

4.2.1 Quantitative measures for productivity

Table 4.4 presents relevant quantitative measures for the first aspect: token and type frequency, type/token-ratio (TTR), and hapaxes[29] for each CPV. The TTR and hapaxes give an indication of the lexical diversity among PPs combined with each CPV: TTR expresses the total number of types relative to the total tokens, so a higher percentage implies a more diverse set of PPs (Richards 1987); the hapaxes signify those PPs that appear only once with a given CPV, in both

[28] Although Barðdal (2006) proposes that these quantitative figures are measures for productivity, she does not specify what number of types qualifies as 'high' or 'low', presumably because such qualifications depend too much on the nature of the investigated pattern and the source material to establish any universal criteria. With the limited scope of this thesis in mind, this question is not explored further here.

[29] The complete name of this term is *hapax legomenon* (Greek for 'that what is said only once'), plural *hapax legomena*, but for readability's sake I will use the abbreviated form *hapax*, plural *hapaxes*.

absolute and relative terms (Vermeer 2000). Finally, two additional—somewhat more *ad hoc*—measures were included: 'hapaxes/types' presents the hapaxes as a percentage of the total number of types, indicating how large of a portion the 'one-off' PPs represent out of all PPs combined with a given CPV; and 'top-10/tokens' presents the ten most frequent PPs for each CPV as a percentage of the total number of tokens, which gives an indication of the share of the most dominant PPs within the total collection of corpus items.

	<PP> *zitten* <PP>	**<PP> *staan* <PP>**	**<PP> *liggen* <PP>**
token frequency	1,552	3,292	1,049
type frequency	154	210	103
type/token-ratio	9.9%	6.4%	9.8%
hapaxes	75 / 4.8%	104 / 3.2%	52 / 5%
hapaxes/types	48.7%	49.5%	50.1%
top-ten/tokens	68.6%	67.3%	73.3%

Table 4.3. *Measures of frequency and lexical diversity for PPs*

A first observation is that the patterns differ considerably in their token frequency per CPV: the pattern with *staan* is more than twice as frequent as *zitten* (3,292/1,552=2.1) and about three times as frequent as *liggen* (3,292/1,049=3.1); *zitten*, then, is one and a half times as frequent as *liggen* (1,552/1,049=1.5), In all three patterns, though, the type frequency is rather high: *zitten* and *liggen* combine with well over one hundred different types of PPs, and *staan* with more than two hundred. The TTR corresponding to these numbers shows that the sets of PPs combining with *zitten* and *liggen* are 1.5 times more diverse than that combining with *staan* (9.9/6.4=1.5; 9.8/6.4=1.5). This does not contradict the high type frequency exhibited by all three CPVs, but does suggest that there may be relevant differences between CPVs concerning the *degree* of diversity in this pattern.

The figures under 'hapaxes' correspond to the number of 'one-off' tokens, i.e. PPs that occur only once with a given CPV. For *zitten* and *liggen*, there are tens of these hapaxes, and for *staan* over a hundred; these figures run parallel to each CPV's TTR, corresponding to about half the TTR in each case. The hapaxes thus not only reinforce the idea of different degrees of diversity for *zitten/liggen* versus *staan*; the fact that every CPV combines with at least 52 PPs *only once* also suggests at least some degree of productivity. The high type frequencies likewise pointed in this direction, and this point is further corroborated by the relative frequency of the hapaxes with regard to the type frequency: hapax PPs make up more than half of the total types of PPs in the case of *liggen* (50.1%) and almost half of them for *zitten* and *staan* (48.7% and 49.5% respectively). In other words: half of all the PP types with which the CPVs are combined in the

corpus appear with that CPV only once, which seems difficult to reconcile with a fixed analysis that postulates a limited set of combinatory options. The three CPVs are also strikingly more similar in this respect than regarding their TTR, with only about a percentage point between them. This suggests that the differences in degrees of productivity between CPVs—specifically *zitten/liggen* and *staan*—are likely quite subtle.

At the same time, the ten most frequent PPs make up almost or more than 70% of the entire set of corpus items. So while the number of hapaxes is considerable, the bulk of the tokens are accounted for by only about 5% (for *staan*) to 10% (for *liggen*) of the tokens (*zitten* is, again, in between these two with 6.5%). It is thus to be expected that certain highly frequent PPs dominate language users' experiences with the pattern; this may explain the impression of fixedness voiced in the literature by Haeseryn et al. (1997) and Broekhuis & Corver (2015). As the TTR and hapax figures revealed, however, the remaining third of the corpus outside the top-ten is much more diverse than one may gather from the two-thirds made up by the ten most frequent types.

4.2.2 Semantic coherence

The second aspect to be considered with regard to the issue of productivity is the internal semantic coherence of PPs: can recurring meaning components be identified across PPs, or is the pattern extended to PPs that appear semantically unrelated? And if the PPs are indeed semantically coherent, how can that coherence be explained and what does that mean for the productivity or fixedness of the pattern in light of the quantitative measures presented in the previous section and the pattern's general meaning discussed in Section 4.1? In order to address these questions, table 4.4 presents the fifteen most frequent PPs for each CPV, which together comprise about three-fourths (*zitten*, with 73.6%) to four-fifths (*liggen*, with 80.5%) of the corpus (*staan* is in between, with 77.7%).[30]

[30] For the convenience of the (Dutch) readers of this thesis, English translations were not included in the following tables, because that would greatly compromise the readability of the tables.

	<PP> *zitten* <PP>			<PP> *staan*<PP>			<PP> *liggen* <PP>		
	PP	n	%	PP	n	%	PP	n	%
1	*gevangen*	445	28.7%	*vermeld*	471	14.3%	*begraven*	235	22.4%
2	*opgesloten*	240	15.5%	*geschreven*	415	12.6%	*besloten*	144	13.7%
3	*verborgen*	92	5.9%	*gepland*	248	7.5%	*opgeslagen*	84	8%
4	*verstopt*	86	5.5%	*beschreven*	205	6.2%	*ingeklemd*	64	6.1%
5	*ondergedoken*	53	3.4%	*opgesteld*	196	5.6%	*bezaaid*	61	5.8%
6	*opgescheept*	46	2.7%	*ingeschreven*	182	5.5%	*verborgen*	56	5.3%
7	*verscholen*	39	2.5%	*geregistreerd*	132	4%	*verscholen*	43	4.1%
8	*gekluisterd*	25	1.6%	*genoteerd*	126	3.8%	*verspreid*	30	2.9%
9	*verwerkt*	20	1.3%	*geparkeerd*	123	3.7%	*opgebaard*	29	2.8%
10	*verstrikt*	19	1.2%	*afgebeeld*	117	3.6%	*verankerd*	23	2.2%
11	*ingeklemd*	18	1.2%	*aangegeven*	116	3.5%	*afgemeerd*	19	1.8%
12	*vastgeplakt*	18	1.2%	*opgetekend*	94	2.9%	*opgesloten*	15	1.4%
13	*ingebouwd*	16	1%	*afgedrukt*	48	1.5%	*verwijderd*	15	1.4%
14	*verpakt*	16	1%	*aangeschreven*	43	1.3%	*aangemeerd*	13	1.2%
15	*ingebakken*	15	0.9%	*gedrukt*	42	1.2%	*verstopt*	13	1.2%
	[remaining]	404	26.4%	[remaining]	734	22.3%	[remaining]	205	19.5%
	total	**1552**	**100%**	**total**	**3292**	**100%**	**total**	**1049**	**100%**

Table 4.4. *Top-fifteen PPs for each CPV*

The PPs within each of the three top-fifteens show considerable semantic similarity. These similarities differ per CPV, although *zitten* and *liggen* appear to be more alike in this respect than *staan*. For *zitten*, these similarities can without exception be connected to the 'figure/ground alignment' encoded by non-postural *zitten* according to Lemmens (2002) that was discussed in Section 2.1.2, namely that 'the figure is either closely contained by or in close contact with the ground' (*ibid*.108), i.e. CONTACT-*zitten* and CONTAINMENT-*zitten*. All PPs in *zitten*'s top-fifteen appear to be associated with these notions: for instance, *gevangen* 'imprisoned', *verborgen* 'hidden', and *ingebakken* 'ingrained' imply that the subject to which they are attributed is contained by something, e.g. a jail cell for *gevangen* or a treasure chest for *verborgen*; and *opgescheept* 'saddled', *gekluisterd* 'bound', and *ingeklemd* 'wedged in' all entail close contact with, or even being fixed to, something else. Notably, *zitten*'s CONTAINMENT and CONTACT components appear to be manifested both literally (e.g. *gevangen* and *ingeklemd*) and figuratively (e.g. *ingebakken* and *opgescheept*), corresponding to the locative/metaphorical distinction discussed in Section 2.1. To illustrate, (83)-(86) present literal and figurative CONTAINMENT and CONTACT meanings in the PPs. They also indicate the figure and ground involved in the (literal or figurative) CONTAINMENT or CONTACT figure/ground alignment in the following format: [ALIGNMENT:*figure/ground*].

(83) *Zijn vader, ook verzetsman, zat gevangen in kamp Erika in Ommen.* [A0182]
'His father, also a member of the resistance, was [sat] imprisoned in camp Erica in Ommen.'
[literal CONTAINMENT:*father/camp*]

(84) *Het credo 'doe maar gewoon, dan doe je al gek genoeg' zit ingebakken in de Nederlandse cultuur.* [A0075]
The motto 'just act normal, that is already crazy enough' is [sits] ingrained in Dutch culture. [figurative CONTAINMENT:*motto/culture*]

(85) *Deze spaken zitten ingeklemd tussen twee kleinere 'ringen'.* [A0593]
'These spokes are [sit] wedged in between two smaller 'rings'.' [literal CONTACT:*spokes/rings*]

(86) *Minister Beckstein van de Duitse deelstaat Beieren zit opgescheept met vier Skoda's, uitgerust als politiewagen.* [A0062]
'Secretary Beckstein of the German state of Beieren is [sits] saddled with four Skodas, equipped as police cars.' [figurative CONTACT:*Skodas/Secretary*]

In (83) and (85), the figure is literally contained by or in contact with the ground, or put differently, the figure is located within or beside the ground: 'his father' in 'camp Erica' and 'these spokes' in between 'two smaller rings'. In (84) and (86) this same alignment is figurative: (84)'s 'motto' is not literally contained by 'Dutch culture' and (86)'s 'four Skodas' are not in literal close contact with 'Secretary Beckstein'. In the latter case, the idea of very close contact, or fixedness as I called it earlier, is exploited to express that Beckstein has unwanted cars on his hands; they are 'fixed' to him, but he would rather get rid of them.

Moving on from *zitten, staan*'s central semantic characteristic—IMPRINTMENT—is also clearly present in its top-fifteen PPs, namely in 14 out of the 15 types: *vermeld* 'mentioned', *geschreven* 'written', *gepland* 'planned', *beschreven* 'described', *opgesteld* 'formulated', *ingeschreven*/*geregistreerd* 'registered', *genoteerd/aangeschreven* 'noted', *afgebeeld* 'depicted', *aangegeven* 'indicated', *opgetekend* 'recorded', and *afgedrukt/gedrukt* 'printed' all literally or figuratively evoke the idea of text, images or something else being depicted on some flat surface.

Finally, as I mentioned earlier, *liggen*'s top-fifteen appears rather similar to that of *zitten*: the notions of CONTACT and CONTAINMENT are likewise frequent, even featuring several identical PPs, e.g. *verstopt* and *verborgen* 'hidden'. The POINT and PLANE notions that are central to *liggen* (Lemmens 2002) are difficult to apply to the corpus material because they are rather general and in practice partially overlap with the notions of CONTACT and CONTAINMENT; for example, if someone *ligt begraven* 'is [lies] buried' somewhere, then they are located on a small

horizontal plane, but simultaneously contained by the earth. While I did use the notions of CONTACT/CONTAINMENT to semantically characterize *liggen*'s PP set, since these were highly apparent in a large proportion of *liggen's* PPs, it should also be noted that the proportion of PPs corresponding to the POINT/PLANE-generalization may in fact also cover part of the CONTACT/CONTAINMENT set.

Table 4.5 presents the total distribution of semantic characterizations per CPV in terms of both type and token frequency. (The abbreviation CT/CM in Table 4.5 stands for 'CONTACT/CONTAINMENT'.) Table 4.6, then, specifies all PPs that I classified under these categories. The PPs presented in Table 4.6 are listed in order of frequency, from high to low, and then in alphabetical order, for all PPs that were attested only once.

semantic category	***zitten***				***staan***				***liggen***			
	types		tokens		types		tokens		types		tokens	
	n	%	n	%	n	%	n	%	n	%	n	%
CT/CM	138	89.6%	1496	96.4%	39	18.6%	69	2.1%	57	55.3%	787	75%
IMPRINTMENT	-	-	-	-	113	53.8%	2,876	87.4%	-	-	-	-
POINT/PLANE	-	-	-	-	-	-	-	-	19	18.5%	194	18.5%
other	16	10.4%	56	3.6%	58	27.6%	347	10.5%	27	26.2%	68	6.5%
total	**154**	**100%**	**1,552**	**100%**	**210**	**100%**	**3,292**	**100%**	**103**	**100%**	**1,049**	**100%**

Table 4.5. *Distribution of semantic categories over* zitten, staan, *and* liggen

Characterizing the PPs combined with these CPVs shows that there is remarkable semantic coherence among all CPVs, especially in terms of token frequency. For instance, although IMPRINTMENT can only account for about half *staan*'s types, it accounts for almost 90% of its tokens, which means that the great majority of instances of *staan* and a CPV that language users come in contact with, involves the literal or metaphorical location of a printed entity on some surface. This is true to an even greater degree for *zitten*, where both the type frequency (89.6%) and token frequency (96.4%) are dominated by instances of CONTACT or CONTAINMENT. Strikingly, a large proportion of *liggen*'s PP types (55.3%) and tokens (75%) are also associated with CONTACT/CONTAINMENT, but as noted previously, these semantic notions likely overlap partially with those of POINT/PLANE. All in all, these figures show that CPV-PP-patterns are on the aggregate level rather coherent, as the great majority of the PPs combined with CPVs can be characterized semantically in terms of only a few abstracted notions.

CPV	semantic category	PPs
zitten	CONTACT/ CONTAINMENT (138 types, 1496 tokens)	*gevangen, opgesloten, verborgen, verstopt, ondergedoken, opgescheept, verscholen, gekluisterd, verwerkt, verstrikt, ingeklemd, vastgeplakt, ingebouwd, verpakt, ingebakken, ingesloten, geplakt, vastgeklonken, vervat, opeengepakt, bekneld, opgezadeld, opgeborgen, verankerd, bevestigd, geklemd, gekoppeld, vastgebonden, vastgeroest, verweven, gebakken, ingebed, opgeslagen, vastgeketend, vastgesnoerd, aangesloten, gebonden, weggestopt, gemonteerd, opgepropt, vastgekleefd, vastgeklemd, besloten, geïsoleerd, beklemd, gedrukt, gegijzeld, gekleefd, gekneld, gepakt, gepropt, samengepakt, volgepakt, volgepropt, geïntegreerd, gevestigd, gewikkeld, geworteld, vastgenageld, vastgeschroefd, verstrengeld, verzameld, geweven, ingekwartierd, ingesneeuwd, opgepot, verschanst, versleuteld, volgestouwd, aaneengesmolten, aangekoekt, aangeplakt, aangeschurkt, aangetrokken, gebeiteld, geblokkeerd, gebrand, geclikt, gefixeerd, gefocust, gegroepeerd, gekerfd, geklit, geklonken, gemangeld, geplaagd, geprikt, geramd, geregen, geschroefd, gesmolten, gesmoord, gesnoerd, gespeld, gesponnen, ondergespat, opgedraaid, vastgegrepen, vastgegroeid, vastgeklonterd, vastgekoppeld, vastgepind, vastgeslagen, vastgespeld, vastgespijkerd, vastgezogen, verbonden, vergroeid, verkleefd, versmolten, vervlochten, verwikkeld, verzonken, belegd, dichtgetimmerd, gebundeld, gedetineerd, geschoven, gevuld, ingebunkerd, ingegraven, ingekapseld, ingemetseld, ingepakt, ingeplakt, ingeschoven, ingesleten, opgedeeld, opgehoopt, opgekropt, opgelost, samengehokt, verdisconteerd, volgepland, volgeplempt, weggeborgen, voorgeprogrammeerd, weggestoken*
	other (16 types, 56 tokens)	*gebogen, verspreid, gehurkt, opgevouwen, gedraaid, verdeeld, opgerold, gedoken, geleund, gevouwen, bedrogen, geëvacueerd, geknikt, gekruld, teruggetrokken, verscheurd*
staan	IMPRINTMENT (113 types, 2876 tokens)	*vermeld, geschreven, gepland, beschreven, opgesteld, ingeschreven, geregistreerd, genoteerd, afgebeeld, aangegeven, opgetekend, afgedrukt, aangeschreven, gedrukt, omschreven, gegrift, geprogrammeerd, aangekondigd, opgesomd, verwoord, gegraveerd, genoemd, opgeschreven, weergegeven, bijgeschreven, gebeiteld, geboekt, gesignaleerd, voorgeschreven, gereserveerd, gebrand, geformuleerd, geschilderd, opgenomen, uitgelegd, gemeld, aangeduid, gekerfd, ingepland, ingetekend, opgegeven, genomineerd, geplaatst, ingeklemd, uitgebeeld, aangemerkt, gedefinieerd, gekrabbeld, geprijsd, gespeld, ingeroosterd, uitgedrukt, vastgelegd, geboekstaafd, geciteerd, gedocumenteerd, gefotografeerd, gepubliceerd, gerangschikt, gespecificeerd, getatoeëerd, getekend, neergeschreven, aangeprezen, aangetekend, afgekort, afgetekend, begroot, besproken, geadverteerd, geafficheerd, geagendeerd, geborduurd, gebudgetteerd, geclassificeerd, gedateerd, geëtst, gekalkt, gekwast, geportretteerd, geprint, gerapporteerd, geregeld, geregisterd, gerubriceerd, geschetst, geschuurd, geseind, geserveerd, gespoten, gestempeld, getikt, getypt, geverfd, ingebeiteld, ingeboekt, ingekaderd, ingevuld, opgenoemd, samengevat, toegelicht, toegeschreven, uiteengezet, uitgelicht, uitgemeten, uitgetekend, uitgetypt, uitgewerkt, vastgesteld, verhaald, vertolkt, volgepland, volgeschreven*
	CONTACT/ CONTAINMENT (39 types, 69 tokens)	*gegroepeerd, vastgebonden, gepakt, verscholen, volgepakt, gedekt, geïnstalleerd, geworteld, geklasseerd, gevangen, geklemd, geselecteerd, opgetast, volgestouwd, dichtgespijkerd, geblokkeerd, gesloten, aangeplakt, aangesloten, ingeschoven, toegekromd, geperst, geplakt, geschakeld, ingekneld, omwonden, opeengepakt, opgesloten, verborgen, opgepakt, vastgeschroefd, verankerd, verzameld, verbonden, volgestapeld, volgebouwd, volgepropt, voorgeprogrammeerd, voorgeselecteerd*
	other (58 types, 347 tokens)	*geparkeerd, gericht, gebogen, uitgestald, opgeslagen, verspreid, tentoongesteld, afgesteld, geïsoleerd, geleund, ingeplant, geplant, ingesteld, opgestapeld, gekeerd, verwijderd, gepositioneerd, geposteerd, gesorteerd, gebouwd, doorgeschakeld, ingeschakeld, gestationeerd, gestemd, gewonnen, ingedeeld, vereeuwigd, verenigd, verheven, aangetreden, aangevallen, afgekeerd, afgestemd, berekend, beschermd, bekrachtigd, bewezen, gegeven, gegroeid, gekanteld, gekend, ingelogd, georiënteerd, geramd, gesteld, gestoeld, geteld, gewend, ingesproken, opgebaard, opgeborgen, opgebrand, opgedeeld, uitgezet, verbrand, uitgeschakeld, verwrongen, verzopen*

CPV	coherence	PPs
liggen	POINT/PLANE (19 types, 194 tokens)	*bezaaid, verspreid, opgebaard, afgemeerd, opgetast, opgestapeld, uitgestald, opengeslagen, verdeeld, gelegen, gespreid, uitgerold, uitgespreid, uitgestrekt, afgezonderd, gelegerd, bestrooid, geconcentreerd, opgesteld*
	CONTACT/ CONTAINMENT (57 types, 787 tokens)	*begraven, besloten, opgeslagen, ingeklemd, verborgen, verscholen, verankerd, opgesloten, aangemeerd, verstopt, ingesloten, ingebed, vastgebonden, bedolven, geklemd, bekneld, vervat, ingegraven, opgeborgen, bewaard, gevangen, opgehoopt, vastgelegd, verzonken, aangekoppeld, aangelegd, aangeschurkt, afgeschermd, bedekt, beklonken, beschermd, bezonken, geblokkeerd, gefixeerd, gekoppeld, genesteld, geplakt, gestapeld, gevat, geworsteld, ineengestrengeld, ingebakerd, ingebakken, ingesmoord, neergedrukt, toegedekt, toegesneeuwd, vastgegroeid, vastgeketend, vastgekleefd, vastgesjord, verbonden, verpakt, verstrengeld, verstrikt, volgestapeld, weggedrukt*
	other (27 types, 68 tokens)	*verwijderd, bestorven, geïsoleerd, geborgen, gebogen, gedrapeerd, gekanteld, gescheiden, gesnookerd, geworpen, opgevouwen, beladen, beschoren, gedraaid, geduisterd, gekapseisd, geknield, geposteerd, gescheisterd, neergeknield, ontbonden, onttrokken, opgebold, verduisterd, vernield, vertrapt, verwaaid*

Table 4.6. *Semantic coherence of PPs for each CPV*

So, what does this high degree of coherence say about the *productivity* of CPV-PP-patterns? Although a high degree of coherence generally suggests a lower degree of productivity, I would argue that the *kind* of coherence observed in Tables 4.5-4.6 does not necessarily contradict the idea that the patterns are productive. That is to say, the coherence observed for *zitten*, *staan*, and *liggen* can large part be explained in terms of characteristics of the individual CPV: CONTACT/CONTAINMENT for *zitten*, IMPRINTMENT for *staan*, and POINT/PLANE for *liggen*. As such, these clusters of coherence are in my view not a property of the pattern as a whole, but should be attributed to one of the elements in the pattern, i.e. the CPV.

The CPV may thus be a relevant predictor of the kinds of elements with which it combines, but the semantic coherence that follows from this prediction is not necessarily a direct constraint on the pattern's productivity. Instead, the constrained productivity of the pattern as a whole can be accounted for in terms of the *locative/resultative link* postulated in Section 4.1. This also explains why a small but still significant subset of PPs (under 'other') cannot straightforwardly be explained in terms of the semantic characteristics of each CPV: they are *less likely* candidates than those PPs that directly align with the CPVs' central semantic characteristics, but not *impossible* candidates provided that they are compatible with a resultative interpretation.

In sum, this section showed that relevant quantitative measures point at CPV-PP-patterns' productivity, while the qualitative measure of semantic coherence pointed at significantly more constrained combinatory possibilities. However, the high degree of coherence was explained in terms of the lexical properties of one of the constituent parts, while the 'resultative meaning' of

the pattern was proposed to account also for the PPs that could not be connected to the semantic categories of CONTACT/CONTAINMENT, IMPRINTMENT, and POINT/PLANE. In this way, a 'productive' account along the lines of Cornelis & Verhagen (1995) more accurately predicts the attested data than a 'fixed' analysis (Haeseryn et al. 1997; Broekhuis & Corver 2015), while the 'limits of semantic compatibility' postulated by Cornelis & Verhagen (1995) appear to be active in both a predictive but non-restrictive sense at the level of the CPV, and in a restrictive sense at the level of the pattern as a whole.

4.3 Syntactic behavior of the PP

In this section, I explore the syntactic behavior of the PP in complementive CPV-PP-patterns. Previous analyses diverge in their analysis of the status of the PP as adjectival or verbal, and consequently, of the CPV as some sort of copula or rather some sort of auxiliary. In Section 2.2 I emphasized the 'two-sidedness' or 'transcategoriality' of PPs in general, which suggests that the status of the PP likely cannot be pinned down to *one* category for *all* CPV-PP-patterns. However, the large amount of corpus data collected for this investigation does make it possible to carefully examine the syntactic behavior of attested PPs, by checking whether PPs conform to the red/green ordering generalization for adjectives in subordinate clauses (cf. Section 2.3.2).

In other words: I will check whether the PPs in CPV-PP-patterns behave more like adjectives (for which a larger percentage of green order (PP-CPV) would be expected) or more like verbs (for which that would be expected for red order (CPV-PP)), and if there is a difference, whether that correlates systematically with certain PPs or CPVs. It is important to note here that I take potential differences in behavior to be gradual, in line with Coussé's (2011) continuum representation of PPs (cf. Section 2.2), so that different CPVs or PPs may correspond to different (extreme or intermediate) positions on a verbal-adjectival scale.

For this part of the investigation, only the subordinate clauses are needed, which, as it turns out, make up a considerable majority of the total set of corpus items: of all 5,893 complementive CPV-PP-patterns, 4,145 are in a subordinate clause, which is about 70% (4,145/5,893=0.703). Table 4.7 shows the distribution of red order (CPV-PP), suggesting more verbal behavior, and green order (PP-CPV), suggesting more adjectival behavior, over all subordinate verbal clusters.

order in sub. clauses	*zitten*		*staan*		*liggen*		total	
	n	%	n	%	n	%	N	%
red order (CPV-PP)	182	16,3%	1,234	51,9%	199	30,4%	1,615	39%
green order (PP-CPV)	932	83,7%	1,143	48,1%	455	69,6%	2,530	61%
total	**1,114**	**100%**	**2,377**	**100%**	**654**	**100%**	**4,145**	**100%**

Table 4.7. *Distribution of red and green order over subordinate verbal clusters*

The differences in Table 4.7 are striking, especially given the relative similarity of the quantitative measures in Table 4.3. The distribution for the PPs combined with *zitten*, at only 16.3% red order, suggests that they behave considerably more like adjectives than those combined with *staan*, where well over half of the PPs in subordinate clauses feature red order (51.9%). The PPs combined with *liggen* are in between the two, at 39%. It can be noted already at this point that the claim in Broekhuis & Corver (2015:993) that 'placing the participle after the finite verb is always the marked option' appears to hold for *zitten* and to a lesser degree for *liggen*, but not for *staan*, which in fact features this order predominantly. It thus appears that not all CPV-PP-patterns have similar structural behavior: at the level of the CPV, there are already significant differences.

Is the same true for the level of the PP? Or put differently, is the syntactic behavior of CPV-PP-patterns strictly correlated to the type of CPV that is used, or do PPs also behave differently among themselves? I will first consider this question for *zitten*. Table 4.8 shows the percentage of items with red order per PP. In order to produce meaningful percentages, I set the minimum token frequency for this table (and the tables to follow) at 15 tokens; in cases with very low token frequency, the affinity for red or green order could otherwise easily be coincidental.

PP	**n**	**% of red order (CPV-PP) in sub. clauses**
opgescheept	30	43.3%
opgesloten	185	35.1%
verstopt	46	34.8%
ondergedoken	44	34.1%
verwerkt	19	15.8%
gekluisterd	18	5.6%
verborgen	58	5,2%
gevangen	333	0%
verscholen	30	0%

Table 4.8. *Distribution of red order in subordinate verbal cluster over PPs (n≥15) per CPV:* zitten

Although this distribution—at a maximum of 43.3%—aligns with the relatively low proportion of red order at the level of the CPV, the PPs in Table 4.8 also show a considerable spread. While

the PP *opgescheept* ‘saddled’ is near an equal red/green distribution, the PPs *verscholen* ‘concealed’ and *gevangen* ‘imprisoned’ were *never* attested in red order and thus in all cases behave like adjectives. This is especially striking for *gevangen*, as it has the highest token frequency of all of *zitten*’s PPs: the fact that it occurred 333 times, but not once in red order, points at very strong adjectival behavior.

Next, Table 4.9 shows this same distribution for *staan*.

PP	n	% of red order (CPV-PP) in sub. clauses
afgebeeld	99	92,9%
afgedrukt	39	92,3%
opgetekend	31	90,3%
opgesteld	167	89,8%
opgesomd	17	88,2%
aangegeven	92	81,5%
ingeschreven	158	75,3%
aangeschreven	43	58,1%
aangekondigd	19	57,9%
omschreven	31	51,6%
geprogrammeerd	26	50%
vermeld	348	49,4%
genoteerd	63	46%
beschreven	133	41,4%
geregistreerd	109	39,4%
geparkeerd	102	39,2%
gericht	29	34,5%
gepland	132	34,1%
gegrift	29	24,1%
geschreven	266	20,3%
gedrukt	39	12,8%

Table 4.9. *Distribution of red order in subordinate verbal cluster over PPs (n≥15) per CPV:* staan

Overall, the distribution for *staan* is considerably broader than that for *zitten*, with a minimum and maximum at almost extreme ends of the scale (12.8% and 92.9%). This aligns with *staan*’s substantially higher percentage of red order at the CPV level. What is striking about this distribution is the high number of PPs that occur predominantly with red order, which diverges strongly from the adjectival analyses of Haeseryn et al. (1997) and Broekhuis & Corver (2015). With red order in over 90% of the subordinate items, *opgetekend* ‘recorded’, *afgedrukt* ‘printed’, and *afgebeeld* ‘depicted’ appear to behave much more like verbs than like adjectives.

Last, Table 4.10 presents the distribution of red order for *liggen*.

PP	n	% of red order (CPV-PP) in sub. clauses
opgeslagen	75	81,3%
opgebaard	23	69,6%
ingeklemd	16	37,5%
verankerd	16	25%
begraven	103	22,3%
besloten	100	17%
bezaaid	24	12,5%
verscholen	25	12%
verwijderd	15	6,67%
verborgen	47	6,38%
verspreid	21	4,76%

Table 4.10. *Distribution of red order in subordinate verbal cluster over PPs (n≥15) per CPV:* liggen

The red order distribution for *liggen* looks similar to that of *staan* in terms of spread, but is about 8-10 percentage points lower overall. That is to say: the PPs combined with *staan* and *liggen* show a greater variety of syntactic behavior than those combined with *zitten*, but *liggen* features considerably fewer PPs that behave verb-like than *staan*. So while syntactic behavior is indeed strongly correlated to the PP that a given CPV is combined with, the aggregate CPV level is also a meaningful factor in characterizing the structural relationship between PP and CPV: in the case of *staan*, the combinatory possibilities for PPs that behave more like verbs appear to be greater than those for *liggen* and especially those for *zitten*, which features zero PPs that behave predominantly like adjectives.[31]

This raises the question whether even more specific properties of PPs can be identified that correlate with a tendency for verbal or adjectival syntactic behavior. To explore this question, Table 4.11 presents the red order distribution aggregated over *all* CPVs.

[31] It should be noted here that red and green order do not have a one-to-one correspondence to verbal or adjectival PP status; they only serve here as indicators of general behavioral tendencies. That is to say: I take the dominance of one of the two orders merely to suggest a position on Coussé's (2011) continuum representation of PPs on the 'more verbal side' or the 'more adjectival side'; the percentages are not an exact indication of their position on the continuum (which not its intended purpose anyway).

PP	n	% of red order (CPV-PP) in sub. clauses
afgebeeld	99	92,9%
afgedrukt	39	92,3%
opgetekend	31	90,3%
opgesteld	168	89,9%
opgesomd	17	88,2%
aangegeven	92	81,5%
uitgestald	16	81,3%
opgeslagen	91	76,9%
ingeschreven	158	75,3%
opgebaard	24	70,8%
aangeschreven	43	58,1%
aangekondigd	19	57,9%
omschreven	31	51,6%
geprogrammeerd	26	50%
vermeld	348	49,4%
genoteerd	63	46%
opgescheept	30	43,3%
beschreven	133	41,4%
geregistreerd	109	39,4%
geparkeerd	102	39,2%
ingeklemd	24	37,5%
opgesloten	198	36,9%
gericht	29	34,5%
gepland	132	34,1%
ondergedoken	44	34,1%
verstopt	54	33,3%
gegrift	29	24,1%
begraven	103	22,3%
verankerd	23	21,7%
geschreven	266	20,3%
gebogen	22	18,2%
besloten	102	17,6%
vastgebonden	17	17,6%
verwerkt	19	15,8%
gedrukt	42	14,3%
bezaaid	24	12,5%
geplakt	16	6,25%
verborgen	106	5,66%
gekluisterd	18	5,56%
verwijderd	19	5,26%
verscholen	58	5,17%
verspreid	30	3,33%
gevangen	335	0%
geïsoleerd	18	0%

Table 4.11. *Distribution of red order in subordinate verbal cluster over PPs (n≥15) for all CPVs*

What is striking about the distribution in Table 4.11 is that the PPs that behave predominantly like verbs (i.e. that feature red order in more than 50% of the items) *all* have a resultative prefix. Such prefixes also occur on PPs that feature less than half or very low proportions of red order,

but the correlation of the two is prominent nonetheless. Moreover, the two PPs that do not appear in red order once, do not have such a prefix.

What could these prefixes have to do with the syntactic behavior of PPs? To answer that question, it is necessary to return to the continuum representation of PPs proposed by Coussé (2011), which was discussed in Section 2.2. I repeat Coussé's (2011:630) visualization below in Figure 5.1.

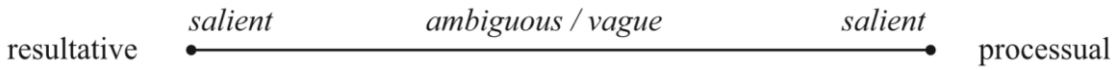

Figure 5.1. *Continuum representation of ambiguous PPs (Coussé 2011:630)*

Coussé (2011) pairs the syntactic properties of PPs with a difference in focus: a *processual* focus for verbal PPs, which profile primarily the complete set of actions leading up to the end point; and a *resultative* focus for adjectival PPs, which profile mainly a present state that is understood to have resulted from that same end point. The difference between a CPV-PP-pattern that behaves more like an adjective, e.g. *gevangen zitten* 'to be [sit] imprisoned', and one that behaves more like a verb, e.g. *afgebeeld staan* 'to be [stand] depicted', may thus lie in their compatibility with a processual profile. Or put differently: whether it is generally desirable for a given PP to focus also on the steps leading up to the locative-resultative link between PP and CPV or not.

It should be pointed out here that Coussé's use of the term 'resultative' does not necessarily overlap with my use of the term in Section 4.1 (cf. Note 20). I characterized CPV-PP-patterns' meaning in Section 4.1 as 'locative resultativity', i.e. the idea that CPV-PP-patterns are characterized by a connection between the end point of the PP's action and the locativity of the CPV which is at the same time specified by the disposition encoded by that same PP. My use of 'resultative' is therefore restricted to the specific link between PP and CPV, and does not refer to the 'end state' meaning of adjectival PPs for which Coussé (2011) uses the term. Crucially, 'locative resultativity' in the sense of this particular link is compatible with *both* a more processual focus *and* a more resultative focus in the sense of Coussé (2011). After all, in this analysis, the stativity of CPV-PP-patterns comes primarily from the CPV, which is secundarily modified by the PP in terms of cause and disposition as a property of the pattern; whether the PP itself then predominantly profiles the process preceding this state (verbal) or

the endpoint and the state itself (adjectival) is a different matter. In this way, a CPV-PP-pattern could be both resultative (in terms of locative resultativity) *and* processual—or resultative *and* resultative.

However, why would *resultative* prefixes then correlate with syntactic behavior corresponding to *processual* interpretations, as Table 4.11 suggests? Somewhat paradoxically, I would argue that resultative prefixes like *op-* 'on' and *uit-* 'out' in this pattern put more focus on the process, precisely because they emphasize the end state that the steps in the process lead up to. Conversely, in cases like *gevangen* for *zitten* (0% red order) and *gedrukt* (12.8%) and *geschreven* (20.3%) for *staan*, the absence of such an explicit 'turning point' from process to resultative state is more compatible with a lack of processual focus. In other words, all PPs in CPV-PP-patterns maneuver between processual and resultative focus, just like PPs in general, but they do so in the presence of an added 'locative resultative' link imposed by the pattern. Precisely this link may be more compatible with the resultativity of adjectival PPs than with the processual focus of verbal PPs; I would argue that resultative prefixes make the processual side more salient, by emphasizing a 'turning point' from process to result that precedes the 'locative-resultative' link. Put differently, such a prefix 'looks back' vis-à-vis the locative-resultative link, in the direction of the preceding process.

How well does this analysis hold up when actual attestations are examined? Corpus (87) and (88) below present maximally adjectival and verbal cases of CPV-PP-patterns in subordinate clauses: *gevangen zitten* in green order in (87), and *staan afgebeeld* in red order in (88).

(87) *[…] een Bosnische gegijzelde vrouw die als onderpand dient voor de mogelijke vrijlating van zijn zoon die in Bosnië gevangen zit.* [B0075]
'[…] a Bosnian woman held hostage who functioned as collateral for the possible release of his son who is imprisoned in Bosnia.'

(88) *Hij laat zijn Bert & Ernie agenda zien waarop de twee Sesamstraat figuren als dj's staan afgebeeld.* [C0135]
'He shows his Bert & Ernie diary on which the two characters from Sesame Street are depicted as DJs.'

The processual/resultative analysis laid out above implies that the processual focus is stronger in (88) than in (87): the steps leading up to Bert & Ernie's depiction on the dairy, i.e. the *depicting* itself, would be more salient than the steps leading up to the son's imprisonment in Bosnia, i.e. the *imprisoning*. In my view, this is indeed the case: although both feature a locative-resultative link in that the *depicting* and *imprisoning* led directly and saliently to the position in Bosnia and on the diary, respectively, the process of *depiction* in (88) is in my interpretation indeed salient *next to* that resultative link, contrary to the process of *imprisonment* in (87). These two items thus support the idea that certain PPs behave more adjectivally and others more verbally, and suggest that these differences in syntactic behavior may correspond systematically to different interpretations of CPV-PP-patterns.

In sum, the analysis of these patterns' structural behavior aligns with the expection voiced in Section 2.2 that the transcategoriality of PPs in general would make it impossible to characterize CPV-PP-patterns' syntax in terms of *one* analysis. Instead, I hope to have shed some light on the potential systematicity of the somewhat chaotic ordering distributions in Tables 4.8-4.11. Above all, the three aspects of CPV-PP-patterns discussed in this chapter were complementary: the analysis of their meaning can help explain the apparent discrepancy between the quantitative measures for productivity and the qualitative one; and the observation that certain PPs behave more like adjectives and others more like verbs, is compatible with an account in terms of different kinds of resultativity.

Chapter 5

Discussion & conclusion

This thesis set out to characterize CPV-PP-patterns in terms of their meaning, productivity, and structure. On the basis of a large amount of corpus material, I argued that CPV-PP-patterns are always *locative*, and that the limits on their productivity can be understood in terms of a kind of *resultativity* that is closely intertwined with that locativity. Put differently, CPV-PP-patterns appear to encode a (literal or metaphorical) location that is the direct and salient result of completing the action encoded by the PP, and that is simultaneously modified in terms of disposition by that same PP. I also examined the patterns' productivity, and concluded that quantitative measures suggest that the pattern is in fact productive, but that the PPs with which CPVs are most frequently combined can be predicted for a large part through the properties of the individual CPVs. This does not contradict the productivity of the pattern as whole, however, since these properties do not exclude other PPs from being used in the pattern as well; the productivity itself, I argued, can be accounted for by the locative-resultative link that I analyzed as the meaning of the pattern.

For the question of structure, the results were less clear-cut. While previous research mainly analyzed the PPs in CPV-PP-patterns as adjectival, the syntactic behavior of the attested PPs was considerably more heterogeneous: some PPs behaved more like verbs, others more like adjectives. This behavior appeared to correlate with processual or resultative (non-processual) focus of the PP—notions which, as I argued, are compatible with the locative resultativity that is a property of the pattern as a whole.

As an explorative investigation with limited scope, this thesis also left a great deal of questions unanswered, however. I will discuss four of them here, before concluding the thesis. First, although I argued that 'resultativity' (Bogaards 2019*b*)—or rather a more specific *locative version* of resultativity—can account for the meaning and productivity of CPV-PP-patterns, I did not compare the meaning components of 'locative resultativity' with that of formally similar patterns, most notably the passive and passive perfect (*worden* and *zijn* combined with a PP), but also other combinations with a PP, e.g. *komen*+PP (Beliën 2016). It would be useful to contextualize the extended characterization of CPV-PP-patterns presented in this thesis with the properties of PP-patterns *without* a CPV to determine whether 'locative resultativity' is truly

a meaning of CPV-PP-patterns as such, or whether it should be ascribed to a more abstract schema, as Cornelis (1997) argues. The theoretical framework of Construction Grammar (e.g. Goldberg 1995; Verhagen 2005; Hilpert 2014) would be useful in such a characterization, as it provides tools to compare similar constructions in terms of their structure and meaning.

Second, the semantic notions that I used as a measure of the PPs' semantic coherence (in the analysis of their productivity) were kind of vague; especially when metaphorical extensions are allowed, a lot can be understood to fall under CONTACT/CONTAINMENT, for instance. One possibility for sharpening these notions could be a 'bottom-up' approach, where the PPs with which the CPVs were combined serve to specify the semantic notions that are relevant for CPV-PP-patterns. Furthermore, assuming that the selection of PPs in CPV-PP-patterns is indeed predicted by the semantic properties of the individual CPV, the sets of PPs presented in this thesis could perhaps help to sharpen the semantic characterization of the CPVs themselves.

Third, more syntactic tests could be used to differentiate distinct combinations of CPVs and PPs and to further characterize the heterogeneous structural behavior of PPs within complementive CPV-PP-patterns. Some doubt has been cast upon the validity of the green/red order test, for instance (e.g. Van der Wal 1986:153), although the test is still very much in use (cf. Broekhuis & Corver 2015). In tandem with this, it would be useful to contextualize these syntactic tests in terms of a more coherent, extensive, and explicit syntactic account.

Fourth and last, the analyses in Chapter 4 open up several avenues for further research that I was not able to explore within the scope of this thesis. For instance, the correlation of adjectival/verbal PP behavior with individual CPVs, most notably the predominantly adjectival behavior in the case of *zitten*, raises the question whether there is something to the structure or semantics of that CPV that can help explain these considerable differences. Is the CONTAINMENT meaning of *zitten* perhaps less compatible with a processual interpretation, for example? This question could be taken up in further research.

All in all, with this thesis I hope to have provided a broader and more empirically founded characterization of CPV-PP-patterns in Dutch. I especially hope to have shown that CPV-PP-patterns are in fact productive structures with a clear meaning. Even if the homogeneity of their most frequent attestations may make it seem otherwise, CPV-PP-patterns are structures with a (locative-resultative) personality of their own.

References

Barðdal, J. 2006. "Predicting the productivity of argument structure constructions." *Proceedings of the Berkeley Linguistic Society 32*, 467-478.

Beliën, M. 2016. "Exploring semantic differences in syntactic variation: Dutch *komen* 'come' with a past participle or an infinitive." *From variation to iconicity: Festschrift for Olga Fischer on the occasion of her 65th birthday*, ed. by A. Bannink & W. Honselaar, 17-32. Amsterdam: Pegasus.

Bogaards, M. 2018. *500-zhe corpus: A Mandarin-Dutch parallel corpus of durative constructions*. https://www.maartenbogaards.nl/resources/bogaards_2018_500zhecorpus.xlsx.

Bogaards, M. 2019*a*. "De quotatieve sterrenhemel: Constellaties met *echt*, *helemaal*, *zo* en *van*" (paper presented at the annual Anéla/VIOT Juniorendag, 5 April 2019, Ede). https://www.maartenbogaards.nl/presentations/2019/avjd_pres_quotatieven.pdf.

Bogaards, M. 2019*b*. "A Mandarin map for Dutch durativity: Parallel text analysis as a heuristic for investigating aspectuality." *Nederlandse Taalkunde 24*(2).

Boogaart, R. 1991. "Progressive aspect in Dutch." Linguistics in the Netherlands 1991, ed. by F. Drijkoningen & A. van Kemenade, 1-9. Amsterdam: John Benjamins.

Boogaart, R. 1999. *Aspect and temporal ordering: A contrastive analysis of Dutch and English*. PhD thesis, Vrije Universiteit Amsterdam.

Booij, G. 2002. *The morphology of Dutch.* Oxford: Oxford University Press.

Brisau, A. 1969. "English progressive tenses and their Dutch equivalents." *Studia Germanica Gandensia* 11, 73-85.

Broekhuis, H. & N. Corver. 2015. *Syntax of Dutch: Verbs and Verb Phrases. Volume 2.* Amsterdam: Amsterdam University Press.

Cornelis, L. & A. Verhagen. 1995. "Does Dutch really have a passive?" *Linguistics in the Netherlands 1995*, ed. by M. den Dikken & K. Hengeveld, 49-60. Amsterdam: John Benjamins.

Cornelis, L. 1997. *Passive and perspective*. Amsterdam: Rodopi.

De Sutter, G. 2006. *Rood, groen, corpus! Een taalgebruiksgebaseerde analyse van woordvolgordevariatie in tweeledige werkwoordelijke eindgroepen*. PhD thesis, University of Leuven.

Elffers, E., S. de Haan & I. Schermer. “Het voltooid deelwoord in het Nederlands: beperkingen op het attributief gebruik.” *Nederlandse Taalkunde 19*(1), 47-76.

Gibbs, R., D. Beitel, M. Harrington & P. Sanders. 1994. “Taking a stand on the meanings of *stand*: Bodily experience as motivation for polysemy.” *Journal of Semantics 11*, 231-251.

Goldberg, A. 1995. *Constructions. A construction grammar approach to argument structure.* Chicago/London: University of Chicago Press.

de Haan, S. 1997. “Grammaticale status en betekenis van het voltooid deelwoord in het Nederlands.” *Grammaticaal spektakel*, ed. by E. Elffers, J. van der Horst & W. Klooster, 89-101. Amsterdam: Vakgroep Nederlandse Taalkunde, Universiteit van Amsterdam.

Haeseryn, W., K. Romijn, G. Geerts, J. de Rooij & M. van den Toorn, eds. 1997. *Algemene Nederlandse Spraakkunst. Tweede, geheel herziene druk*. Groningen: Martinus Nijhoff.

Hilpert, M. 2014. *Construction grammar and its application to English*. Edinburgh: Edinburgh University Press.

van der Horst, J. 1995. *Analytische taalkunde.* Groningen: Martinus Nijhoff.

van der Horst, J. 2008. *Geschiedenis van de Nederlandse Syntaxis*. *Deel 2*. Leuven: Leuven University Press.

Janssen, T. 1994. “Preterit and perfect in Dutch.” *Tense and aspect in discourse*, ed. by C. Vet & C. Vetters, 115-145. Berlin: Mouton de Gruyter.

Kutscher, S. & E. Schultze-Berndt. 2007. “Why a folder lies in the basket although it is not lying: The semantics and use of German positional verbs with inanimate figures.” *Linguistics 45*(5), 983-1028.

Langacker, R. 1991. *Concept, image, and symbol. The cognitive basis of grammar.* Berlin/New York: Mouton de Gruyter.

Lemmens, M. 2002. “The semantic network of Dutch posture verbs.” *The Linguistics of Sitting, Standing, and Lying*, ed. by J. Newman, 103-140. Amsterdam: John Benjamins.

Lemmens, M. 2005. “Aspectual posture verb constructions in Dutch.” *Journal of Germanic Linguistics 17*(3), 183-217.

Lemmens, M. 2007. “Caused posture: Experiential patterns emerging from corpus research.” *Corpora in Cognitive Linguistics: Corpus-based approaches to syntax and lexis*, ed. by S. Gries & A. Stefanowitsch, 261-296. Berlin: Mouton de Gruyter.

Lemmens, M. 2015. “Zit je te denken of ben je aan het piekeren?” *Nederlandse Taalkunde 20*, 5-36.

Lemmens, M. & D. Slobin. 2008. “Positie-en bewegingswerkwoorden in het Nederlands, het Engels en het Frans.” *Verslagen en mededelingen van de Koninklijke Academie voor Nederlandse Taal-en Letterkunde 188*(1), 17-32.

Lesuisse, M. & M. Lemmens. 2018. “Grammaticalisation cut short. A diachronic constructional view on English posture verbs.” *Grammaticalization meets Construction Grammar*, ed.by E. Coussé, P. Andersson & J. Olofsson, 43-73. Amsterdam: John Benjamins.

Newman, J. 2002. “A cross-linguistic overview of the posture verbs ‘sit’, ‘stand’, and ‘lie’.” *The Linguistics of Sitting, Standing, and Lying*, ed. by J. Newman, 103-140. Amsterdam: John Benjamins.

Newman, J. 2009. “English posture verbs: An experientially grounded approach.” *Annual Review of Cognitive Linguistics 7*(1), 30-57.

Oostdijk, N., M. Reynaert, V. Hoste & I. Schuurman. 2013. “The construction of a 500-million-word reference corpus of contemporary written Dutch.” *Essential Speech and Language Technology for Dutch: Results by the STEVIN-programme*, ed. by P. Spyns & J. Odijk, 219-247. Dordrecht: Springer.

van Oosten, J. 1984. “Sitting, standing and lying in Dutch: A cognitive approach to the distribution of the verbs *Zitten, Staan*, and *Liggen*.” *Dutch Linguistics at Berkeley*, ed. by J. van Oosten & J. Snapper, 137-160. Berkeley: Dutch Studies Program, University of California at Berkeley.

Pauwels, A. 1953. *De plaats van het hulpwerkwoord, verleden deelwoord en infinitief in de Nederlandse bijzin.* Leuven: Symons. https://www.dbnl.org/tekst/pauw022plaa01_01.

Richards, B. 1987. “Type/Token Ratios: What do they really tell us?” *Journal of Child Language 14*(2), 201-209.

Sanders, E. 2006. *Zitten te lopen.* NRC Handelsblad, 23 January 2006.

Serra Borneto, C. 1996. “*Liegen* and *stehen* in German: A study in horizontality and verticality.” *Cognitive Linguistics in the Redwoods*, ed. By E. Casad, 458-505. Berlin: Mouton de Gruyter.

Stoett, F. 1923. *Middelnederlandsche spraakkunst: Syntaxis*. The Hague: Nijhoff.

Talmy, L. 1978. “Figure and ground in complex sentences.” *Universals of human language IV: Syntax*, ed. By J. Greenberg, C. Ferguson & E. Moravcsik, 625-649. Stanford: Stanford University Press.

van den Toorn, M. 1975. “Het probleem van een syntactische verandering (over enkele werkwoorden van aspect en *te* + infinitief).” *Tijdschrift voor Nederlandse Taal- en Letterkunde* 91, 256-267.

Vandevoorde, L., G. De Sutter & K. Plevoets. 2016. “On semantic differences between translated and non-translated Dutch. Using bidirectional parallel corpus data for measuring and visualizing distances between lexemes in the semantic field of inceptiveness.” *Empirical translation studies: Interdisciplinary methodologies explored*, ed. by M. Ji, 128-146. Sheffield: Equinox.

Verhagen, A. 1992. “Praxis of linguistics: Passives in Dutch.” *Cognitive Linguistics 3*, 301-342.

Verhagen, A. 2005. “Constructiegrammatica en ‘usage based’ taalkunde. *Nederlandse Taalkunde* 10(3), 197-223.

Vermeer, A. 2000. “Coming to grips with lexical richness in spontaneous speech data.” *Language Testing 17*(1), 65-83.

van der Wal, M. 1986. *Passiefproblemen in oudere taalfasen. Middelnederlands sijn/werden + participium praeteriti en de pendanten in het Gotisch, het Engels en het Duits.* PhD dissertation., Leiden University. https://hdl.handle.net/1887/43836.