

6

Decomposing adverbs and complementizers

A case study of Dutch *hoe* ‘how’

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6.1 Introduction

Homonymy is a characteristic phenomenon of human language. Natural languages have words that have different meanings but share the same pronunciation.¹ A fine illustration of this phenomenon comes from Dutch *wat* ‘what’. As shown in (1), this *wh*-word *wat* can have a great variety of meanings.

- (1) a. Jan heeft *wat* gedronken. (*wat* = indefinite pronoun, ‘something’)
Jan has WAT drunk
‘Jan drank something.’
- b. Jan heeft *wat* water gedronken. (*wat* = quantifier, ‘some’)
Jan has WAT water drunk
‘Jan drank some water.’
- c. *Wat* heeft Jan gedronken? (*wat* = interrogative pronoun, ‘what?’)
WAT has Jan drunk
‘What did Jan drink?’
- d. *Wat* heeft Jan een bier gedronken! (*wat* = exclamative marker)
WAT has Jan a beer drunk
‘Jan drank so much beer!’
- e. Alles *wat* zij maakt smaakt. (*wat* = relative pronoun)
all WAT she makes tastes
‘Every meal she prepares tastes great.’

In traditional grammar, each meaning is associated with a different part of speech. In other words, each of the instances of *wat* in (1) corresponds to a different lexical item in the Dutch lexicon. Thus, based on the examples in (1), Dutch would have five different lexical items *wat*, which happen to have the same pronunciation.

¹ Specifically, they have the same I-sound (i.e. mental phonological representation) in the sense of Chomsky’s (2000) notion of I-language. See Chomsky (2000: 181) for the notion of I-sound in the context of homonymy. It is the I-sound representation that gets externalized in speech.

Rather than interpreting the multifunctionality of *wat* in (1) as a lexical matter, several linguistic studies have argued that there is only a single lexical item *wat* in the Dutch lexicon, and that the multifunctionality of *wat*—that is, its different semantic readings—is a consequence of the different structural environments in which *wat* appears (Postma 1994; Bennis 1995; Bennis et al. 1998; Barbiers et al. 2009).² For example, when *wat* is *in situ*, it gets an indefinite reading, namely ‘something’, as in (1a); when *wat* acts as a modifier within a noun phrase, as in (1b), it gets a quantificational reading, namely ‘some’/‘a bit of’; when *wat* occupies the specifier position of an interrogative C(omplementizer) head (i.e., C_Q), it gets an interrogative reading. In short, it is the structural configuration in which the (lexically unique) functional category *wat* appears that determines (part of) its meaning.³ Crucially, from the perspective of the mental lexicon, there is no homonymy in (1); there is only a single function word *wat*.⁴

This chapter focuses on another instance of apparent homonymy in the realm of Dutch *wh*-words, namely the *wh*-element *hoe* ‘how’. This lexical item is most familiar from its use in interrogative sentences like (2a), which is an interrogative root sentence, and (2b), which is an embedded interrogative clause:

- (2) a. *Hoe* wilde Jan het probleem oplossen?
 how wanted Jan the problem solve
 ‘How did Jan want to solve the problem?’
 b. Ik vroeg [*hoe* Jan het probleem wilde oplossen].
 I asked how Jan the problem wanted solve
 ‘I asked how Jan wanted to solve the problem.’

The element *hoe* in (2) is traditionally classified as an interrogative adverb with a manner interpretation (‘in what way?’). Besides the *wh*-interrogative use of *hoe*, there is also the use in (3); (3a) drawn from Overdiep (1936: 598–599), (3b) from Geerts et al. (1999).⁵

² See Cheng (1997) for Chinese, and Hachem (2015) for German and Dutch.

³ This reductionist strategy has been used at various places in the history of generative linguistics. Postal (1966), for example, points out the homonymy of definite articles and direct object clitics in languages such as French: *les₁ filles* ‘the girls’ and *Je les₂ ai vus* (I them have seen, ‘I saw them’). He argues that *les₁* and *les₂* instantiate the same category, viz., D. Another illustration comes from Emonds (1976), who points out that the ‘adverb’ *fast*, as in *John drove too fast for me*, and the adjective *fast*, as in *John is too fast for me*, actually instantiate one and the same category, viz. A(djective).

⁴ The function word *wat* is homonymous with the content word *wat*, meaning ‘cotton-wool’, as in *Er zit wat wat op je wang* (there sits some cotton-wool on your cheek, ‘There is a bit of cotton-wool on your cheek’).

⁵ See also Overdiep (1935) for a brief discussion of non-interrogative *hoe* in seventeenth-century Dutch. Overdiep characterizes the phenomenon as the weakening (Dutch: *verzwakking*) of the interrogative meaning of *hoe*. One of the illustrations he gives is given in (i):

- (3) a. In hun haast merkten de jongens niet eens op *hoe*
 in their haste noticed the boys not even PRT how
 daar in de verte twee mannen naderden.
 there in the distance two men approached
 ‘Being hasty, the boys didn’t see two men approaching from the
 far distance.’
- b. Jan vertelde *hoe* ’s nachts een wolf in de schaapskooi
 Jan told how at-night a wolf in the sheep-fold
 was gekomen en zeven schapen had gedood.
 had entered and seven sheep had killed
 ‘Jan told about a wolf’s entering the sheep-fold and killing seven sheep.’

Clearly, in these examples, *hoe* does not carry the interrogative meaning ‘in what way?’. Overdiep (1936: 598–599) notes that *hoe*’s interrogative meaning has become ‘blurred’ (Dutch: *vervaagd*) and that *hoe* in (3) behaves like the conjunction *dat* ‘that’, which typically introduces finite clauses, as in *In hun haast merkten de jongens niet eens op dat daar in de verte twee mannen naderden*, which is the same clause as (3a) except for the use of *dat*.

In line with Overdiep (1936), Geerts et al. (1999) classify the non-interrogative *hoe* in (3) as a ‘conjunctive adverb’ (Dutch: *voegwoordelijk bijwoord*). According to this classification, interrogative *hoe* in (2) and conjunctive *hoe* in (3) are different lexical items having the same pronunciation. In short, these are homonymous items according to traditional grammar.

Just as with the *wh*-word *wat*, the question arises as to whether the two instances of *hoe* can be reduced to a single linguistic expression, with its exact meaning being determined by the structural configuration in which *hoe* is embedded. My answer to this question will be affirmative. More specifically, this chapter aims to show the following about the grammar of *hoe*: Firstly, the linguistic expression *hoe* is not a simplex lexical item of the categorial type ‘adverb’ but rather a structurally organized nominal phrase headed by a silent root (WAY), as in (4a).⁶ Secondly, this phrasal expression *hoe* can occupy different structural positions within the clause. In its interrogative use, as in (2), *hoe* starts out as a nominal complement of a silent adposition that is the head of a PP; see (4b). Its appearance in the left periphery of

- (i) Sy voelt *hoe* dit gevoel allencxen grooter wert.
 she felt how this sentiment gradually bigger became
 ‘She felt this sentiment getting bigger and bigger.’

(Cats 888^b; seventeenth-century Dutch)

For recent discussion of the non-interrogative *hoe*-pattern in present-day Dutch, see Nye (2012; 2013a, b). For discussion of non-interrogative ‘how’-patterns in other languages, see Legate (2010) and Liefke (2023) for English, Umbach et al. (2021) and Umbach et al. (2023) for German, and Irurtzun (2023) for Basque.

⁶ *ZO* is a silent demonstrative element.

the clause results from movement of this PP to the specifier position of a functional head which can surface as *of* ‘if’ and will be analysed as a dummy adposition; see (4c). In its conjunctive use, as in (3), the nominal expression *hoe* is base-generated in [Spec, CP], where it assigns substantive contents (‘manner’/‘way’) to C(P); see (4d). It will be argued that this conjunctive *hoe* undergoes a local movement step within the complementizer system, as depicted in (4e).

- (4) a. [DP *hoe* [_{DemP} ZO [_{NP} n° [WAY]]]]
 b. ... [PP Spec [_{P'} (of) [_{CP} Spec [_{C'} C [TP ... [PP P [_{DP} *hoe*]]...]]]]] (interrogative *hoe*)
 c. ... [PP *hoe*_{PP} [_{P'} (of) [_{CP} Spec [_{C'} C [TP ... ~~hoe~~_{PP}...]]]]]
 d. ... [PP Spec [_{P'} P [_{CP} [_{DP} *hoe*] [_{C'} C [TP ...]]]]]] (conjunctive *hoe*)
 e. ... [PP *hoe*_{DP} [_{P'} P [_{CP} ~~hoe~~_{DP} [_{C'} C [TP ...]]]]]]

This chapter is organized as follows: In Section 6.2, it is shown that clausal complements introduced by conjunctive *hoe* typically present an eventuality as ongoing. Following Umbach et al. (2021), I will henceforth call this conjunctive *hoe*-element ‘eventive *hoe*’ (abbreviated: *hoe*_E). Section 6.3 focuses on the different grammatical behaviour of *hoe*_E, on the one hand, and interrogative *hoe* (abbreviated: *hoe*_Q, where Q stands for ‘question’), on the other hand. Their contrastive behaviour is interpreted as evidence in support of different syntactic derivations of the two patterns: Specifically, *hoe*_E is base-generated in the left periphery, *hoe*_Q is moved from a clause-internal position to the clausal left periphery. Section 6.4 aims to show that, even though conjunctive *hoe*_Q and adverbial *hoe*_E look like simplex lexical atoms at the surface, they have a phrasal structure, which obviously has consequences for their syntactic placement in the clausal structure. More specifically, it is proposed that they are nominal expressions (DPs). Furthermore, it is claimed that *hoe*_Q starts out as a nominal complement of a silent adposition that is the head of a PP. In Section 6.5, it is proposed that the nominal expression *hoe*_E is base-generated in [Spec, CP], where it assigns substantive contents to the clause (CP). Section 6.6 discusses the displacement process that brings *hoe*_Q to the clausal left periphery, and Section 6.7 examines the linguistic nature of the subordinator *of* ‘if’, whose specifier position is the landing site for displaced *hoe*_Q. In Section 6.8, it is proposed that *hoe*_E, which is base-generated in [Spec, CP] undergoes a local movement step within the complementizer system. Specifically, it moves from [Spec, CP] to [Spec, PP]. Section 6.9, finally, concludes this chapter.

6.2 Some introductory remarks on eventive *hoe*-complements

Just like any other language, Dutch makes a formal distinction between embedded declarative clauses and embedded Y(es)/N(o)-interrogative clauses. The former are introduced by the subordinator *dat* ‘that’ (5a), while the latter start with the subordinator *of* ‘whether’/‘if’ (5b).

- (5) a. Ik vertelde aan Jan [*dat* de studenten het probleem
I told to Jan that the students the problem
hadden opgelost].
had solved
'I told Jan that the students had solved the problem.'
- b. Ik vroeg aan Jan [*of* de studenten het probleem
I asked to Jan whether the students the problem
hadden opgelost].
had solved
'I asked Jan whether the students had solved the problem.'

As shown in (6a), interrogative clauses can also be introduced by a *wh*-word, such as the *wh*-word *hoe* 'how', which typically has a manner interpretation. In (6a), for example, *hoe* asks for the way in which the students solved the problem. As indicated, *hoe* originates in a clause-internal position, where it fulfils its role as a VP-modifier, and ends up in the clausal left periphery as a result of movement. For the sake of completeness, I added example (6b), which represents a Y/N-interrogative clause containing the manner-adverbial expression *snel en adequaat* 'fast and adequately'. Note that, as opposed to interrogative *hoe*, the non-interrogative manner-adverbial occupies a clause-internal position.

- (6) a. Ik vroeg aan Jan [*hoe* zij het probleem *hoe*
I asked to Jan how they the problem
hadden opgelost].
had solved
'I asked Jan how they had solved the problem.'
- b. Ik vroeg aan Jan [*of* zij het probleem *snel en*
I asked to Jan whether they the problem fast and
adequaat hadden opgelost].
adequately had solved
'I asked Jan whether they had solved the problem fast and adequately.'

Interestingly, the *wh*-element *hoe* can also introduce an embedded clause that has a declarative interpretation instead of an interrogative one. This non-interrogative use of the *wh*-element *hoe* is exemplified in (7); see also (3).

- (7) Ik vertelde aan Jan [*hoe* de studenten het probleem
I told to Jan how the students the problem
snel en adequaat oplosten].
fast and adequately solved
'I told Jan about the students' quickly and adequately solving the problem.'

Observe that *hoe* in this non-interrogative clause cannot be interpreted as a modifier that specifies the manner in which the eventuality (*in casu*, the students' solving the problem) was performed; this for the reason that the manner adverbial *snel en adequaat* already fulfils this modifying role within the VP (see section 3 for further discussion).

As noted by Umbach et al. (2021) for the German equivalent of the *hoe*-complement in (7), the non-interrogative *hoe*-complement has a process-like character.⁷ Specifically, it is imperfective in the sense of presenting a process as ongoing. In (7), the ongoing process consists of the various stages that the students went through while trying to find a solution for the problem. Umbach et al. state that these stages can be qualified as being 'similar' in the sense of representing possible natural continuations of the initial (problem-solving) stage. Thus, in (7), these stages correspond to the (temporal) sequence of actions that the students undertook for finding a solution to the problem. Following Umbach et al., I will call the non-interrogative *hoe*-element in (7) 'eventive *hoe*' (abbreviated: *hoe*_E). The interrogative *hoe*-element in (6a) will be represented as *hoe*_Q, where 'Q' stands for 'question'.⁸

Having given a brief characterization of the meaning of *hoe*_E-complements, I will now turn to some evidence in support of their process reading. This evidence comes from the contrastive behaviour of verbs denoting an activity and verbs denoting a state.⁹ The former can be part of a *hoe*_E-complement, the latter cannot. A first illustration of this contrast comes from the minimal pair in (8):

⁷ An example of a non-interrogative *wie*-complement in German is given in (i):

- (i) Anna sah, *wie* Berta schnell ihre Tasche packte. (Umbach et al. 2021; ex. 9)
 Anna saw how Berta quick her bag packed
 'Anna saw Berta quickly packing her bag.'

⁸ Besides eventive *hoe*, there is another non-interrogative use of *hoe*, namely its use in free relative clauses like (ia, b):

- (i) a. Jan loopt [hoe zijn vader loopt].
 Jan walks how his father walks
 'Jan walks the way his father walks.'
 b. [Hoe Jan zijn burens helpt] is bewonderenswaardig.
 how Jan his neighbors helps is admirable
 'The way in which Jan helps his neighbors is admirable.'

In this chapter, I won't discuss *hoe*-clauses like (ia, b). See note 50, though, for a brief remark about a grammatical difference between eventive *hoe*-clauses, on the one hand, and the free relative clauses in (i), on the other hand. See also Umbach et al. (2021) for a discussion of the two types of non-interrogative *wie*-clauses in German.

⁹ See also Clement (1971), Vater (1975), and Falkenberg (1989), Umbach et al. (2021) for German. All these authors point out that eventive *wie*-complements, as opposed to *dass* 'that' complements, highlight the process of the described event and block stative verbs. For Dutch, see Nye (2012, 2013a, b).

- (8) a. De bakker voelde [dat_{Decl}/hoe_E hij makkelijk door
 the baker felt that /how he easily through
 het brood heen *sneed*]. (activity)
 the bread PRT cut
*dat*_{Decl}: ‘The baker felt/noticed that he could cut through the bread
 easily.’
*hoe*_E: ‘The baker felt himself cutting the bread easily.’
- b. De bakker voelde [dat_{Decl}/hoe_E het brood makkelijk
 the baker felt that / how the bread easily
sneed]. (state)
 cut
*dat*_{Decl}: ‘The baker felt/noticed that the bread cuts easily.’

(8a) shows that *hoe*_E can occur in an active clause involving an agentive subject (*hij*), but not in a Middle-clause like (8b), which typically refers to an individual property of the subject and denotes a state (Broekhuis et al. 2015). As indicated, both active *snijden* ‘cut’ and stative *snijden* can be part of a clause introduced by the declarative subordinator *dat* ‘that’. In line with what was noted earlier, the *hoe*_E-complement in (8a) has a process-like reading, *in casu* the sequence of ‘cutting stages’ during the cutting of the bread. When *dat* introduces the embedded clause, the event (i.e., the baker’s cutting of the bread) is not presented ‘from the inside’ as an ongoing event consisting of ‘cutting stages’. The *dat*-clause simply states the fact that the baker cut through the bread easily.

A second piece of evidence which supports the process reading of *hoe*_E-complements comes from clauses featuring the verb *wegen* ‘to weigh’. As shown in (9), *hoe*_E can occur with measure verbs denoting an activity (9a), but not with measure verbs denoting a state (9b).¹⁰

- (9) a. Jan zag [dat_{Decl}/hoe_E de boer het varken
 Jan saw that /how the farmer the pig
 zorgvuldig aan het *wegen* was]. (activity)
 painstakingly on the weighing was
*dat*_{Decl}: ‘Jan saw that the farmer was weighing the pig painstakingly.’
*hoe*_E: ‘Jan saw the farmer weighing the pig painstakingly.’

¹⁰ A reviewer raises the interesting question as to whether the contrast between the well-formed *hoe*-complement in (9a) and the ill-formed one in (9b) might be related to the distinction between direct perception and indirect perception. As the reviewer points out, some of the stative sentences might just be out because they describe non-perceivable properties (e.g. weighing 100k). I leave this issue for future research and restrict myself to the following observation: Adding the phrase *op de weegschaal* (‘on the balance/‘weighing machine’) to the matrix clause, this way making the perception (more) direct, does not change the grammaticality judgement of the *hoe*-complement.

- (i) Jan zag op de weegschaal [dat/*hoe het varken 100 kilo woog].

- b. Jan zag [dat_{Decl} /*hoe_E het varken 100 kilo woog]. (state)
 Jan saw that / how the pig 100 kilo weighed.
*dat*_{Decl}: ‘Jan saw that the pig weighed 100 kilo.’

In (9a), the measure verb *wegen* combines with a subject carrying the semantic role Agent (*de boer*) and a direct object carrying the semantic role Theme (*het varken*). When the embedded clause is introduced by the subordinator *dat*, the activity represented by the embedded clause is presented as a fact. When it is introduced by *hoe*, however, the activity is presented as an ongoing process comprising various stages of the weighing process. As shown in (9b), *hoe_E* is impossible when it introduces a clause featuring the stative verb *weigh*, which takes a measure phrase (100 kilo) as its complement and combines with a subject noun phrase carrying the semantic role *Theme*. As indicated, such a clause denoting a stative event can only be introduced by the subordinator *dat*.

A third argument in support of the process reading of *hoe_E*-complements is based on the examples in (10), in which the embedded clause is a copular construction. As shown in (10a), *hoe_E* can occur with the copular verb *worden* ‘to become/get’, which denotes a change of state (process), but not with the non-dynamic copula *zijn* ‘to be’, which denotes a state; see (10b).

- (10) a. Jan zag [dat_{Decl}/hoe_E de ballon langzaam
 Jan saw that /how the balloon slowly
 kleiner werd]. (change of state/dynamic)
 smaller became
*dat*_{Decl}: ‘Jan saw that the balloon slowly got smaller.’
hoe_E: ‘Jan saw the balloon slowly getting smaller.’
- b. Jan zag [dat_{Decl}/*hoe_E de ballon rood was]. (state)
 Jan saw that / how the balloon red was
*dat*_{Decl}: ‘Jan saw that the balloon was red.’

Let me, finally, point out that the verbs in (8a), (9a), and (10a), which are part of the *hoe_E*-complement, can all be used in the Dutch progressive construction: *aan het V_[+infinitive] + zijn*. Stative verbs cannot be used in this construction. This contrast is exemplified in (11) on the basis of the copular verb *worden* ‘to become’, which has a dynamic reading (i.e. change of state), and the copular verb *zijn*, which has a stative reading.

- (11) a. Jan zag [dat_{Decl} de ballon langzaam kleiner
 Jan saw that the balloon slowly smaller
aan het worden was]. (dynamic)
 Prep. the_{neuter} become was
 ‘Jan saw that the balloon was slowly getting smaller.’

- b. *Jan zag [dat_{Decl} de ballon rood aan het
 Jan saw that the balloon red Prep. the_{neuter}
zijn was]. (state)
 be was
 *Jan saw that the balloon was being red.'

In summary: the Dutch word *hoe* 'how', just like its equivalent in many other languages (cf. Umbach et al. 2021), can be used as an interrogative adverb carrying the meaning 'in what way', or as a conjunction-like element with a non-interrogative interpretation. The clause introduced by this non-interrogative *hoe* typically presents a process as ongoing, which implies that the process comprises various stages that take place sequentially. Having introduced some basic meaning properties of *hoe_E*-complements, I will next address the question as to how *hoe_E* and *hoe_Q* end up in the left periphery of the finite clause.

6.3 *Hoe_Q* as a displaced phrase, *hoe_E* as a base-generated phrase

So far, we have seen that *hoe_Q* and *hoe_E* occupy a syntactic position in the left periphery of the clause. The question, obviously, arises as to how they end up in this position: Is the same type of computational operation involved in their left-peripheral placement, or do different operations underlie their syntactic placement? In line with earlier studies (Chomsky 1986; Frey 2003), I propose that *hoe_Q* starts out as a VP-modifier and undergoes displacement (in minimalist terms: I-Merge) to a specifier position in the so-called complementizer system. *Hoe_E*, on the contrary, is taken to be base-generated in the left periphery of the clause (cf. Legate 2010 for English *how*, Nye 2012 for English *how*/Dutch *hoe*, and Umbach et al. 2021 for German *wie*). In what follows, I will give a number of arguments in support of the different derivational processes underlying *hoe_Q*-complements, on the one hand, and *hoe_E*-complements, on the other hand. As will become clear, the two types of *hoe* display different grammatical behaviour, which is expected if they have a different underlying syntax.

A first point of contrast—one already mentioned briefly in Section 6.2; see (7)—regards the possibility of co-occurring with a clause-internal (event-modifying) manner-adverbial (see Umbach et al. 2021 for German). As shown in (12a), *hoe_Q* cannot co-occur with a clause-internal manner adverbial, while *hoe_E* can.

- (12) a. Zij vroeg *hoe_Q* ik de buurman (**vriendelijk*) had
 she asked how I the neighbor friendly had
 aangekeken.
 at-looked
 'She asked how I had looked at the neighbor (*friendly).'

- b. Zij vertelde *hoe_E* ik hem *vriendelijk* had aangekeken
 she told how I him friendly had at-looked
 en vervolgens was weggerend.
 and then had away-run
 ‘She told about my looking at him friendly and subsequently running
 away from him.’

This contrast follows if *hoe_Q* and the *in situ* manner adverbial (*vriendelijk*) compete for the same base position, and if *hoe_E* and the *in situ* manner-adverbial do not.

One might question this argument based on complementary distribution, and raise the question as to whether it is really true that there is only one syntactic position available for event-modifying manner adverbials. The examples in (13) seem to suggest that it is, but a more systematic investigation of these co-occurrence patterns is definitely needed (see also Umbach et al. 2021, footnote 2). As these examples show, there is a clear contrast between the sequential pattern ‘Adv_{manner} Adv_{manner}’ and the coordinate pattern ‘Adv_{manner} en Adv_{manner}’. The former pattern involves two separate modifying constituents, the latter a single modifying constituent.

- (13) a. Hij spreekt altijd {luid/duidelijk/??/*luid duidelijk /
 he speaks always loudly/clearly / loudly clearly /
 luid en duidelijk}.
 loudly and clearly
 ‘He always speaks loudly / clearly / loudly and clearly.’
 b. Hij las het boek {aandachtig / grondig / ??/*aandachtig
 he read the book attentively / thoroughly / attentively
 grondig / aandachtig en grondig} door.
 thoroughly / attentively and thoroughly PRT
 ‘He read the book attentively / thoroughly/ attentively and thoroughly.’

Also the conclusion, based on (12b), that *hoe_E* does not originate in a clause-internal position and is simply base-generated in the clausal left periphery might be questioned. Even if *hoe_E* does not originate as a VP-modifying manner-adverbial, it might be argued that it constitutes another kind of clause-internal modifier that can undergo movement to the clausal left periphery. Interestingly, it turns out that the *wh*-element *hoe* can have different types of modifying functions (Broekhuis and Corver 2016: 1127–28). This is exemplified by the following *wh*-questions, where the clause introduced by *hoe* contains a manner-adverbial (*het snelst, nauwkeurig*):

- (14) a. *Hoe* worden deze brieven *het snelst* gesorteerd?
 how are these letters the fastest sorted.out
 Handmatig of machinaal?
 by.hand or mechanically

- b. *Hoe* kun je hem *het snelst* bereiken? Telefonisch of
 how can you him the fastest reach by,phone or
 per e-mail?
 by e-mail
- c. *Hoe* heb je hem *nauwkeurig* onderzocht?
 how have you him accurately examined
 Lichamelijk of psychisch?
 physically or psychically

In (14a), interrogative *hoe* can be replaced by *waarmee* (wherewith, ‘with what?’) and functions as an instrumental adverbial. It specifies the instrument used in performing the action. In (14b), *hoe* functions as a modifier designating a means of communication. In (14c), finally, *hoe* asks for the domain (*in casu* a medical domain) to which the process designated by the verb (*onderzocht*) is restricted. Notice that, in each example, *hoe* co-occurs with a true manner-adverbial (*het snelst*, *nauwkeurig*) and that the adverbial role of *hoe*—instrument, means, domain—is indicated by the disjunctive pattern *X of Y* that follows the *wh*-interrogative clause. The fact that these adverbials can occur with the manner-adverbial clause-internally, as exemplified in (15a) for *machinaal*, suggests that interrogative *hoe* in (14a) has been moved from a clause-internal to a clause-external position, as in (15b).

- (15) a. Deze brieven worden *machinaal* *het snelst* gesorteerd.
 these letters are mechanically the fastest sorted.out
- b. *Hoe* worden deze brieven ~~*hoe*~~ het snelst gesorteerd?
 how are these letters the fastest sorted.out

On the basis of the examples in (14) and (15), one might hypothesize that the locus of *hoe_E* in (12b) also results from movement from a clause-internal position to a clause-external position. Such an analysis, however, would raise a number of questions: Firstly, all non-manner-adverbial patterns in (14) involve interrogative *hoe_Q*, which typically involves displacement. The pattern in (12b), however, involves a non-interrogative *hoe* (i.e. *hoe_E*) at the beginning of a declarative clause. It is not immediately clear from which clause-internal position *hoe_E* would have been moved. Secondly, while *hoe* in (14a–c) clearly has a non-interrogative counterpart (*handmatig*, *telefonisch*, *lichamelijk*) it is not so obvious what the clause-internal counterpart of *hoe_E* is. Let me, finally, add that *hoe_E* does not only co-occur with a true manner-adverbial but also with adverbials designating an instrument (16a), means (16b) or domain (16c). The fact that *hoe_E* can co-occur with all these other types of adverbials that can be questioned by interrogative *hoe*, hints at an analysis in which *hoe_E* is ‘simply’ base-generated in the left periphery of the embedded clause.

- (16) a. Zij vertelde [*hoe* Jan de brieven *snel*_{manner}
 she told how Jan the letters fast
*handmatig*_{instrument} sorteerde].
 by.hand sorted.out
- b. Zij vertelde [*hoe* Jan mij *snel*_{manner} *per e-mail*_{means}
 She told how Jan me fast via e-mail
 had ingelicht].
 had informed
- c. Zij vertelde [*hoe* Jan de patiënt *lichamelijk*_{domain}
 she told how Jan the patient physically
*nauwkeurig*_{manner} onderzocht].
 accurately examined

Having tried to give some further substance to the argument based on the contrast between (12a) and (12b), I will now turn to a second contrast that hints at a different derivational analysis of *hoe*_Q-complements, on the one hand, and *hoe*_E-complements, on the other hand. This second contrast concerns the question as to whether *hoe* can be associated with floating material, such as *zoal* ‘all’ and *nog meer* ‘additionally’/‘also’, and *in godsnaam* ‘for god’s sake’. As shown below, *hoe*_Q can ((17a) and (18a)), but *hoe*_E cannot ((17b) and (18b)).

- (17) a. Zij vroeg [*hoe*_Q de artsen mij *zoal/nog meer*
 she asked how the doctors me among-others/in-addition
 behandeld hadden].
 treated had
 ‘She asked me in what ways the physicians had treated me among
 others/additionally.’
- b. Zij vertelde [*hoe*_E de artsen mij (**zoal*/**nog meer*)
 she told how the doctors me among-others/in-addition
 zorgvuldig behandelden].
 carefully treated
 ‘She told about the doctors’ treating me carefully.’
- (18) a. Jan vroeg [*hoe*_Q wij *in godsnaam* dit probleem
 Jan asked how we for god’s-sake this problem
 hadden opgelost].
 had solved
 ‘Jan asked how on earth we were able to solve this problem.’
- b. Jan vertelde [*hoe*_E wij dit probleem (**in godsnaam*)
 Jan told how we this problem for god’s-sake
vakkundig hadden opgelost].
 adequately had solved
 ‘Jan told about our solving this problem professionally.’

The dependency between *hoe_Q* and the clause-internal floating element can easily be accounted for if it is assumed, in the spirit of Sportiche's (1988) analysis of Quantifier floating, that the *wh*-phrase *hoe_Q* and the floating element start out as a syntactic unit (e.g. [*hoe_Q* [*zoal*]]), where *zoal* is adjoined to *hoe_Q*). Movement of just the *wh*-phrase *hoe_Q* leaves behind the floating element (*zoal/nog meer/in godsnaam*). As shown by the b-examples, it is impossible for *hoe_E* to be associated with floating material. This suggests that *hoe_E*'s placement in the left periphery of the clause does not result from movement.

A third phenomenon for which the two types of *hoe* display contrastive behaviour is syntactic coordination. As opposed to *hoe_Q* (19a), *hoe_E* cannot be coordinated with another interrogative *wh*-phrase (19b).

- (19) a. De patiënt vroeg [*hoe_Q* en waar_Q] de arts de
 the patient asked how and where the doctor the
 naald zou plaatsen.
 needle would put
 'The patient asked how and where the doctor would put the needle.'
- b. De arts vertelde [*hoe_E* (*en waar_Q)] hij de naald
 the doctor told how and where he the needle
voorzichtig in de huid duwde.
 carefully in the skin put

A fourth contrast between *hoe_Q* and *hoe_E* concerns scopal interaction with a quantifier (see also Nye 2012). As illustrated by (20b), there is no scopal interaction between *hoe_E* and the quantifier *iedereen* 'everyone'. The embedded clause introduced by *hoe_E* represents the process—that is, the various problem solving stages—that everyone went through for finding an efficient solution to the problem. As shown by (20a), *hoe_Q*, as opposed to *hoe_E*, does permit two scopal readings: *hoe* can have scope over *iedereen* (meaning: 'In which (single) way was it that all people solved this problem?'), and *iedereen* can have scope over *hoe* (meaning: 'As for every individual person, how did s/he solve the problem efficiently?').

- (20) a. Ik vroeg [*hoe_Q* *iedereen* dit probleem had opgelost].
 how > ∀ / ∀ > how
 I asked how everyone this problem had solved
 'I asked how everyone had solved this problem.'
- b. Ik vertelde [*hoe_E* *iedereen* dit probleem *zorgvuldig*
 I told how everyone this problem efficiently
 had opgelost] how > ∀
 had solved
 'I told about everyone's solving this problem in an efficient way.'

A fifth phenomenon for which *hoe_Q* and *hoe_E* display contrastive behaviour concerns the possibility of having a long distance reading. As shown in (21a), *hoe_Q* can get a long distance interpretation; that is, *hoe_Q* is interpreted as a manner adverb that modifies the event—say, ‘we solve the problem’—in the most deeply embedded clause. This long distance reading of *hoe_Q* follows from the fact it is connected to the embedded clause via its trace/copy. As shown in (21b), *hoe_E* does not get a long distance interpretation; that is, *hoe_E* cannot be interpreted as being part of a clause lower than the matrix clause in which it is contained. Thus, *hoe_E* in (21b) says something about the process of quickly discovering something but not about the process of our solving the problem accurately. The latter reading is only possible when *hoe_E* is at the beginning of the most deeply embedded clause, as in (21c).

- (21) a. Jan vroeg [*hoe_Q* zij dacht [dat wij het probleem
 Jan asked how she thought that we the problem
hoe konden oplossen]].
 could solve
 ‘Jan asked how she thought we could solve the problem.’
- b. Jan vertelde [*hoe_E* zij *snel* ontdekte [dat wij het
 Jan told how she quickly discovered that we the
 probleem *zorgvuldig* oplosten]]
 problem accurately solved
 ‘Jan told about her quickly discovering that we solved the problem
 accurately.’
 (The process = ‘quickly discovering something’)
 Impossible (long-distance reading): ‘Jan told that she quickly learned
 about our accurately solving the problem.’ (the process = ‘accurately
 solving the problem’)
- c. Jan vertelde [dat zij ontdekte [*hoe_E* wij het probleem
 Jan told that she discovered how we the problem
zorgvuldig oplosten]]
 accurately solved
 ‘Jan told that she learned about our accurately solving the problem.’
 (The process = ‘accurately solving the problem’)

A final point of contrast between *hoe_Q* and *hoe_E* comes from Sluicing: *hoe_Q* can occur as a *wh*-remnant in Sluicing constructions, *hoe_E* cannot. This contrast is shown in (22).

- (22) a. De arts dichte de wond. Ik weet alleen
 the doctor closed the wound I know but
 niet meer *hoe_Q*.
 not anymore how
 ‘The doctor closed the wound but I don’t remember how.’

- b. De arts dichtte zorgvuldig de wond. ^{*/}Marie
 the doctor closed carefully the wound Marie
 legde uit hoe_E.¹¹
 explained how

The question arises as to what excludes *hoe_E* as a remnant of a sluiced clause. Although I don't have a full answer to this question, there are a number of observations worth mentioning here. Firstly, as noted by Lobeck (1995: 54–62) and Merchant (2001: 54–61), sluicing is restricted to *wh*-questions. It never occurs, for example, in English relative clauses (**Somebody stole the bike, but they couldn't find the person who*). In short, the property of interrogativity (say, +Q) matters for sluicing. Clearly, *hoe_E* does not have this property. Secondly, even if a *wh*-element is associated with interrogativity, sluicing is not always possible. The subordinate conjunction *whether*, for example, cannot be used as a remnant within a sluice: **John said that he would come to the party but, admittedly, I wonder whether*. Possibly, the conjunctive nature of *whether* plays a role in this. On analogy with this, the conjunctive nature of *hoe_E* possibly blocks its appearance as a remnant in a sluice. Finally, sluicing constructions typically display a certain parallelism between the antecedent clause and the sluice, as in *John stole something, but I don't know what John stole*, where *something* is similar to *what*. In a sentence like (22a), this parallelism is implicit: the closing of the wound is realized in a certain way. The *wh*-phrase *hoe* at the beginning of the sluice parallels this implicit element of the antecedent clause. Notice now that this parallelism is absent in (22b): there is no (implied) element in the antecedent clause that is similar to *hoe_E*.

Summarizing, I have shown that *hoe_Q* and *hoe_E* display different external syntactic behaviour. This different behaviour suggests that their syntactic position in the clausal representation is derived in different ways. Specifically: *hoe_Q* is a phrase that is moved (I-merged) from a VP-internal position to the left periphery of the clause, as in (23a), while *hoe_E* is a phrase which is base-generated in the left periphery, as in (23b).¹²

- (23) a. Zij vroeg [*hoe_Q* Jan ~~hoe~~ gekeken had].
 she asked how Jan looked had
 'She asked how (e.g. in a strange way) Jan had looked.'
 b. Zij vertelde [*hoe_E* Jan voorzichtig de deur opende].
 she told how Jan carefully the door opened
 'She told about Jan's opening the door carefully.'

¹¹ It should be noted that the sentence is fine when *hoe* has an interrogative-instrumental reading (see (14a)), that is, 'with what tool', as in *The doctor closed the wound with a special glue*.

¹² This conclusion is in line with earlier proposals, such as Legate (2010) for English, Nye (2012, 2013a, b) for Dutch and English, and Umbach et al. (2021) German. In this chapter, I won't discuss the English non-interrogative *how*-pattern (e.g. *I told them how I had once been bitten by a snake*). See Legate (2010) for in-depth discussion of its syntax and semantics; see also Liefke (2023).

The question, obviously, arises as to what position in the left periphery of the clause *hoe*_Q and *hoe*_E occupy. Is it the same structural position, or do they occupy different positions in the clausal left periphery? Another question that arises regards the grammatical nature of the linguistic expression *hoe*. Specifically, is it a primitive lexical atom, or is it a Syntactic Object (SO) with an inner structure? After having argued for the latter perspective on *hoe*, I will discuss in Sections 6.5–6.8 what this means for the external syntax (i.e. distributional behaviour) of *hoe*_Q and *hoe*_E.

6.4 Decomposing adverbs: The inner structure of *hoe* ‘how’

Although from a surface perspective *hoe* looks like a simplex lexical atom, I aim to show in this section that it has a composite inner organization. Specifically, it will be argued that *hoe* is a nominal expression (DP). In my quest for inner structure, I will, initially, focus on *hoe*_Q. In line with the discussion of the *wh*-phrase *wat* in Section 6.1, I will argue that *hoe*_Q and *hoe*_E are not distinct linguistic expressions which happen to have the same pronunciation (homonymy). Rather, *hoe*_Q and *hoe*_E are the same type of linguistic expression, namely a nominal phrase. Their different ‘grammatical contribution’ to the clause relates to the syntactic configuration in which they are embedded.

Let us now turn to the proposal that *hoe*_Q is not a simplex lexical atom but rather a linguistic expression with a composite syntactic structure. For the origins of this idea, we need to go back to the early days of generative syntax. Ever since Postal’s (1966) seminal study *On so-called ‘Pronouns’ in English*, linguists are aware that linguistic expressions that look like single words (i.e. lexical atoms) may have a more complex hidden structure. Postal, for example, shows that personal pronouns like *he/him* or *we/us* are complex noun phrases featuring an overt determiner, namely *he/him* and *we/us*, which is followed by a silent noun. Thus, the so-called pronoun *he* has the inner structure [*he*_{DET} + *ONE*_{Noun}], where *he* is a subtype of determiner, closely related to definite articles, and small capital *ONE* the silent noun. Importantly, as Postal points out, in certain environments the noun can be overt, as in cases such as *we students*, *you guys* and dialectal forms such as *we’uns* and *us’uns*.¹³ He further suggests that his decompositional analysis of English pronouns can be extended to adverbs such as *then* (temporal), *there* (locative), and *thus* (manner). Rather than being simplex lexical items of the categorial type ‘adverb’, these pro-forms have an inner structure of the following type: [*then*_{DET} [TIME_{Noun}]], [*there*_{DET} [PLACE_{Noun}]], and [*thus*_{DET} [WAY]].¹⁴

¹³ For other studies on the decomposition of pronouns, see, among others, Cardinaletti and Starke (1999), Corver and Delfitto (1999), Déchaine and Wiltschko (2002), and van Koppen (2005).

¹⁴ See Kayne (2003a, 2004) for extensive discussion of silent nouns. As Kayne (2004) points out, there are reasons for decomposing *there/then/thus* into *th-ere/th-us/th-en*. In the context of this chapter, I will abstract away from this more fine-grained decomposition of these adverbial elements.

This decompositional approach to adverbs can already be found in Katz and Postal (1964: 98), where it is proposed that manner adverbs such as *carefully* derive from underlying adpositional structures of the type $[_{PP} IN + [_{NP} \textit{careful(ly)} + WAY]]$, where *IN* is a silent adposition, *careful* an attributive AP, and *WAY* a silent noun designating manner (see also Emonds 1976).¹⁵ Building on Katz and Postal (1964), Collins (2007) also claims that locative ‘adverbs’ such as *here*, *there*, and *somewhere* involve a silent noun, as in $[_{here} + PLACE]$.¹⁶ As an additional ingredient of the structural analysis of locative adverbs, he proposes that the silent noun (*PLACE*) is a light nominal expression that must raise to the specifier position of the adpositional phrase (*PP*).^{17,18} Thus, the surface form *there* has the underlying structure in (24a) and the derived structure in (24b):¹⁹

- (24) a. $[_{PP} IN [_{NP} \textit{there} + PLACE]]$
 b. $[_{PP} [_{NP} \textit{there} + PLACE] [_{P'} IN [_{NP} \textit{there} + PLACE]]]$

According to Collins, the non-pronunciation of the (English) adposition follows from a more general version of the Doubly Filled Comp Filter (Koopman 2000a). Collins’s formulation of this filter is given in (25):

- (25) a. Edge(X) must be phonetically overt.
 b. The condition in (a) applies in a minimal way so that either the head or the specifier, but not both, are spelled-out overtly.

In (25a), ‘Edge(X)’ comprises both X (the head) and the specifier of X. As stated in (25b), these two edge components interact with each other as far as spell-out goes.²⁰

¹⁵ On the status of the adverbial marker *-ly*, see, among others, Emonds (1985), who analyses *-ly* as an inflection, and Déchaine and Tremblay (1996), Baker (2003), and Corver (2022), who take *-ly* to be a nominal element.

¹⁶ See also Kayne (2004), and Caponigro and Pearle (2009) for the claim that ‘adverbs’ such as *here*, *there*, etc. are nominal expressions.

¹⁷ As Collins (2007) points out, a language like Dutch provides clear evidence in support of such PP-internal movement operations. As shown in Van Riemsdijk (1978), certain pronouns move from the complement position of P to the specifier of P, where they turn into what Van Riemsdijk calls R-pronouns, where ‘R’ refers to the *r*-sound that is part of these pronouns: e.g. *daar op* (there on, ‘on that’), *waar op* (where on, ‘on what’), *ergens op* (somewhere on, ‘on something’), *hier op* (here on, ‘on this’). See also Koopman (2000b).

¹⁸ For discussion of light nouns, see Kishimoto (2000). In other studies, different labels are used to refer to this class of ‘semantically weakened’ nouns. Emonds (1985) calls them ‘grammatical nouns’, Corver and Van Riemsdijk (2001) ‘semi-lexical nouns’, Postal (2004) ‘nonchromatic nouns’.

¹⁹ I abstract away here from issues regarding the ban on movement operations that are too local (e.g. from the complement position of X to the specifier position of X). For discussion of so-called ‘anti-locality’, see Abels (2003) and Grohmann (2003).

²⁰ In the course of this chapter, we will come across a few Spec-head configurations in which both the head and the specifier position are spelled out by overt material. This seems to suggest that condition (25b) is parametrized. Alternatively, one has to assume that there is a more articulated syntactic structure, as in (i), so that the materialized specifier and the materialized head are contained in different functional layers. This more articulated structure could offer a possible answer to the anti-locality issue mentioned in footnote 19.

- (i) $[_{FP} [_{NP} \textit{there} + PLACE] [_{F'} F [_{PP} IN [_{NP} \textit{there} + PLACE]]]]]$

As Collins points out, it is not just R-pronouns such as *here*, *there*, and *where* that move to [Spec, PP], subsequently triggering non-pronunciation of P. Also nominal expressions headed by the overt light noun *place* can move to [Spec, PP] and trigger P's silence. This is exemplified in (26), and structurally represented in (27) for the locative expression *someplace different*.²¹

- (26) a. Every three years, we lived *someplace different*.
 b. He doesn't seem to settle *anyplace* for long, does he?
 c. Let's go see if he's *someplace obvious*, like at home in bed.
- (27) [PP [NP *someplace different*] [P' AT [~~NP *someplace different*~~]]]

Collins (2007: 4–5) provides some independent empirical support for the proposal that the locative 'adverb' *there* involves a silent adposition. His argument is based on the set of examples in (28):

- (28) a. I went there and to the place next door.
 b. I went *(to) the place next door.
 c. ?I went there and the place next door.

In (28a) *there* is coordinated with the directional PP *to the place next door*. If *there* is a PP, then we simply have a coordination of two PPs in (28a): [_{ConjP} [PP *there*] and [PP *to the place next door*]]. Consider next the pair (28b) and (28c). (28b) shows that a bare DP (*the place next door*) is impossible after *went*; the directional P *to* must be present. Interestingly, pattern (28c), featuring a coordination of *there* and a bare DP, is much more acceptable than the bare noun phrase in (28b). This acceptability can only be accounted for if (28c) has the constituent structure in (29a) below. Given the Coordinate Structure Constraint (Ross 1967), the sequence *there and the place next door* cannot result from displacement of just *there* to the specifier position of the silent P *TO*, as in (29b). As Collins points out, (28c) can only be derived if *there* pied pipes the rest of the material contained within the coordinate structure, as in (29c).

- (29) a. [PP TO [DP *there and the place next door*]]
 b. *[PP *there* [P' TO [DP ~~*there and the place next door*~~]]]
 c. [PP [DP *there and the place next door*] [P' TO ~~DP~~]]

Having given some evidence in support of displacement of *there* to [Spec, PP], I will now turn to the syntax of bare (i.e., preposition-less) manner-adverbial expressions, which will ultimately lead to a phrase-structural analysis of *hoe* 'how'. As shown in (30)–(32), manner adverbials can also have a 'bare' (i.e. preposition-less) surface form.

²¹ For discussion of the existence of silent prepositions, see Bresnan and Grimshaw (1978), Larson (1985), McCawley (1988), and Emonds (1987).

- (30) a. The staff gave all their love, care and support, *thus* enabling me to overcome my fears.
 b. The most beautiful village in England. *Thus* did the artist William Morris describe the village of Bibury.
- (31) a. Don't worry! I'll get there *someway*.
 b. Since childhood Susan behaved *someway different* and alienated with her schoolmates.
- (32) a. He was dressed *cowboy style*, like many of the men in the tavern.
 b. The house was decorated *Victorian style*, complete with red rugs laid out on the wood floors and antique pictures on the wall.

We have the pro-form *thus* in (30), a manner expression featuring the light noun *way* in (31), and a manner expression featuring the nominal element *style*, which I also take to be a light noun, in (32).²²

Building on Katz and Postal (1964) and Collins (2007), I propose that the manner-adverbial expressions in (30)–(32), which all lack an overt adposition, are hidden adpositional structures in which the pro-form (*thus*) or the light nominal expression (e.g. *someway (different)*) has undergone displacement to [Spec, PP]. Schematically²³:

²² The special status of the bare (i.e. prepositionless) light nouns *way* and *style* is also clear from the fact that they can't be pluralized, as shown in (i):

- (i) a. I did it *my way*(*s).
 b. The houses in this neighborhood are decorated *Victorian style*(*s).

Note that *way* and *style* can have a plural form when they are part of a noun phrase that combines with an overt preposition:

- (ii) a. I struggled *in my own ways*.
 b. Just over a mile away sits Nitre Hall, a nineteenth-century historic building decorated *in the Empire and Victorian styles* with colonial exhibits on display.

A similar contrast is found in Dutch. The bare manner noun phrase *mijn manier* 'my way' can't be pluralized. When *mijn manier* is preceded by an overt P, the plural form is possible:

- (iii) a. Ik doe het *mijn manier*(*en).
 I do it my way(s)
 'I do it my way.'
 b. Ik leef om te genieten en dat doe ik *op mijn eigen manier*(en).
 I live for to enjoy and that do I in my own way(s)
 'I live to enjoy life and I have my own way(s) of doing that.'

²³ If we follow this line of reasoning, manner adverbs such as *carefully* possibly also occupy [Spec, PP], as in (i):

- (i) [PP [NP [AP *careful*] -ly] [P' IN [NP [AP *careful*] [-ly]]]].

In Déchaine and Tremblay (1996), Baker (2003), and Corver (2022), it is proposed that *-ly* is a nominal element that is modified by an attributive adjective.

- (33) a. [PP [NP *thus*_{DET} + WAY] [P' IN [NP *thus* + WAY]]]
 b. [PP [NP *someway (different)*] [P' IN [NP *someway (different)*]]]
 c. [PP [NP *cowboy style*] [P' IN [NP *cowboy style*]]]

Notice that, just as bare locative expressions (cf. (28c)), bare manner expressions can have a coordinate structure.²⁴

- (34) He vowed that he would succeed [PP (in) one way or another].

In line with Collins (2007), I assume that *in one way or another* has the structure in (35a), while *one way or another* has the structure in (35b):

- (35) a. [PP in [ConjP [DP one way] or [DP another]]]
 b. [PP [[DP *one way*] or [DP *another*]] [P' IN \emptyset P]]

Having argued that so-called manner-adverbs such as *thus*, *someway*, and *cowboy style* are actually hidden PPs, it does not seem implausible to assume that the interrogative manner 'adverb' *how* (i.e. *how*_Q) also constitutes a hidden PP containing an unpronounced P, with *how* in [Spec, PP]. Schematically:

- (36) [PP [*how*] [P' IN [$\{how\}$]]]

Furthermore, if Postal (1966) is right in claiming that 'adverbs' such as *then*, *there*, and *thus* are nominal expressions with an inner structure, it seems like a natural step to say that the same holds for *wh*-counterparts such as *when*, *where*, and *how*: [*when*_{DET} [TIME_{Noun}]], [*where*_{DET} [PLACE_{Noun}]], and [*how*_{DET} [WAY_{Noun}]].²⁵ This line of analysis leads to the following more articulate structure of the 'adverb' *how*:

- (37) [PP [*how*_{DET} [WAY]]] [P' IN [$\{how\}$ _{DET} [WAY]]]]

In the spirit of Chomsky's (2001) Uniformity Principle, and in view of their family-relatedness (both being Germanic languages), I assume that Dutch *hoe*_Q has the same inner organization as English *how*_Q.²⁶ This leads us to the following structure for Dutch *hoe*_Q:

- (38) [PP [*hoe*_{DET} + WAY] [P' IN [$\{hoe\}$ _{DET} + WAY]]]

As indicated by this representation, Dutch *hoe*_Q 'how' is part of an adpositional structure containing a silent adposition (say, IN) and a silent (light) noun, just like English *how*_Q in (37). In line with Collins (2007), I assume that the nominal

²⁴ Presumably, the conjunct *another* is a noun phrase in which NP-ellipsis has taken place: *one way or another way*.

²⁵ The existence of composite indefinite forms such as *somehow* ('in some way not specified') and *anyhow* ('in any way whatever'), and also the existence of related forms such as *someway* ('in some way or other') and *anyway* (see (31)), obviously hints at a composite structure of adverbial forms featuring *how*. I leave the analysis of such forms for future research.

²⁶ Chomsky's (2001: 2) Uniformity Principle states the following: 'In the absence of compelling evidence to the contrary, assume languages to be uniform, with variety restricted to easily detectable properties of utterances.'

pattern [*hoe*+WAY], which features the silent light noun WAY, raises to the specifier position of the silent P.²⁷

Having claimed that Dutch *hoe*_Q is a nominal expression with the inner structure [*hoe*_{DET} + WAY], I will now try to give some further substance to this claim. As a preliminary remark, I note that the evidence for *hoe*_Q's nominal status will come not only from the manner-adverbial use of *hoe*_Q but also from other uses of *hoe*_Q, specifically its use as an interrogative kind-expression and its use as an interrogative degree-expression. Importantly, I take the inner organization of the nominal expression *hoe*_Q to be the same for these different uses.

My first piece of evidence for the presence of nominal structure comes from the examples in (39):²⁸

- (39) a. *Hoe* gaat het? (Standard Dutch)
 how goes it
 ‘How are you?’
 b. *Oes* gaat het? (Aarschot Dutch; Pauwels 1958: 392)
 how(-s) goes it
 ‘How are you?’
 c. *Oes* doe-re-ge da?
 how do-2PSg-you that
 ‘How do you do that?’
 (Balen Dutch; <https://www.mijnwoordenboek.nl/dialect/Balens>)

As shown in (39a), the manner adverb *hoe*_Q is superficially ‘bare’ in Standard Dutch (and also in certain dialectal varieties). Thus, there is no morphological material attached to the ‘adverb’ that signals the presence of composite structure. As shown by (39b, c), however, there are Dutch varieties, in which *hoe*_Q can be augmented with what is traditionally called ‘adverbial -s’.²⁹ These varieties are

²⁷ Dutch has a number of manner-adverbial expressions of the type ‘A+P’, such as *hardop* (loud+on, ‘aloud’), *rechtop* (right+up, ‘rightup’), *languit* (long+out, ‘stretched out’), and *voluit* (full+out, ‘fully’). Example (ia) gives an illustration of the use of such expressions. In Corver (2022), it is proposed that these patterns involve displacement of a nominal expression [_{NP} Adjective + WAY] from the complement position of P to [Spec, PP], as in (ib).

- (i) a. ...dat Jan de zin *hardop* voorlas.
 ...that Jan the sentence loud-up read
 ‘...that Jan read the sentence aloud.’
 b. [_{PP} [_{NP} [_{AP} *hard*] [_{NP} WAY]]] [_{P'} OP [_{NP} [_{AP} *hard*] [_{NP} WAY]]]]

²⁸ Also in other languages, there are signs of inner structure for the equivalents of the English *wh*-word *how*. In French *comment*, for example, the components *comme* ‘like’ and *-ent* can be identified. In Kayne (2005), it is proposed that *comment* has the inner structure *comme* + HOW + *-ent*. Also in Scandinavian languages, manner ‘how’ has a composite form, as in Danish *hvordan* (*hvor*+*dan*; lit.: *hvor*+done). Interestingly, the bare *wh*-form *hvor* means ‘where’. *Hvor* is also found in other composite ‘adverbs’, such as *hvorfor* (‘why’) and *hvornår* (‘when’), which have the inner structure *hvor*+Preposition.

²⁹ Adverbial -s is absent when *oe* ‘how’ is used as a degree word modifying a gradable adjective:

Southern Dutch varieties spoken in Flanders, such as Aarschot Dutch and Balen Dutch.³⁰

The question obviously arises as to what kind of grammatical formative this so-called adverbial *-s* is. Before answering this question, let me give some further illustrations of the appearance of this *-s* in Dutch adverbial patterns (see Corver 2019; 2022):³¹

- (40) a. Jan *liep zacht-je-s.* (Manner)
 Jan walked slow-DIM-s
 ‘Jan walked slowly.’
 b. Jan *hilde op-een-s.* (Time)
 Jan cried at-one-s
 ‘Jan cried at once.’
 c. Dit is *veels te duur.* (Measure)
 this is much-s too expensive
 ‘This is much too expensive.’

In line with Corver (2019, 2022), I assume that adverbial *-s*, historically a genitival case, instantiates the categorial node *n*, which combines with a silent root that represents a particular ‘adverbial meaning’ such as manner (WAY), time (TIME), or measure (MEASURE).³² This analysis yields the representations in (41a, b, c) for (40a, b, c), respectively:

- (41) a. [DP [AP *zacht*] [ClasP *-je* [nP WAY+n^o (= -s) [WAY]]]]³³
 b. [PP *op* [QP *een* [nP TIME+n^o (= -s) [TIME]]]]
 c. [DegP [QP *veel* [nP MEASURE+n^o (= -s) [MEASURE]]] *te duur*]

As indicated by these representations, I take *zachtjes*, *eens* and *veels* to be hidden noun phrases, whose silent root raises to the categorial node *n*. Under the

- (i) [Oe(*-s) *groot*] is uw *zoontje* al? (Aarschot Dutch, Pauwels 1958)
 how tall is your son-DIM already
 ‘How tall is your son now?’

This contrast between ‘independent’ *oes* in (39b,c), on the one hand, and ‘dependent’ *oe* in (i), on the other, is somehow reminiscent of the contrast between English ‘independent’ *yours*, where *-s* obligatorily occurs, versus ‘dependent’ *your* in *your car*, where *-s* must be absent after the possessive pronoun.

- (ii) a. This is your(*-s) car.
 b. This is your*(-s).

I will leave the investigation of this formal contrast between the manner expression *oes* and the degree expression *oe* for future research.

³⁰ The Aarschot Dutch example is taken from Pauwels (1958: 392), the Balen Dutch example from the website address: <https://www.mijnwoordenboek.nl/dialect/Balens>.

³¹ (40a, b) represent Standard Dutch, (40c) is attested in colloquial Dutch and dialectal varieties of Dutch.

³² See Marantz (1997, 2000) for arguments in support of the existence of categorial nodes like *n*.

³³ As indicated, I take the diminutive morpheme *-je* to be a classifier; see Wiltschko (2005), Ott (2011), Corver (2021). See also De Belder (2011) for the functional status of *-je*.

assumption that minimally one component of a complex head (e.g. [WAY+n^o]) must externalize, I take adverbial *-s* to be a last resort manifestation of the categorial node *n*. Since the root adjoined to *n* does not externalize (i.e. remains silent), *n* must be spelled out phonologically, as in (42)³⁴:

(42) [DP oe [NP [WAY+n^o (= -s)] [WAY]]] (Aarschot Dutch)

This, of course, raises the question as to why Standard Dutch *hoe* does not feature so-called adverbial *-s*. I tentatively propose that the linguistic expression *hoe* does not involve head-raising of the root to *n*. In other words, the root stays *in situ* and no complex head is formed, as in (43). Since no complex head of the type [WAY+n] is formed, *n* does not have to surface as a last resort.³⁵

(43) [DP hoe [NP n [WAY]]] (Standard Dutch)

I will now turn to a second argument in support of the hypothesis that *hoe*_Q is part of a larger nominal expression. The starting point of my argument is the well-known interrogative *wat voor (een) +N*-construction in Dutch (Den Besten 1985; Corver 1990; Bennis 1995; Bennis et al. 1998), which carries the meaning ‘what kind of N’. An example of this nominal construction is given in (44a). What is interesting is that, in certain varieties of Dutch, including Groningen Dutch (ter Laan 1953: 54), the interrogative pattern *hoe zo’n +N* (how so a, ‘what kind of’) is used instead of the standard Dutch *wat voor een* ‘what kind of’; see (44b).³⁶

(44) a. [Wat voor een potlood] heb je gekregen?
 what for a pencil did you get
 ‘What kind of pencil did you get?’

b. [*Hou*_{+wh} *zo*_{’n-wh} grivvel] hest kregen?
 how so-a pencil have-2P.Sg got
 ‘What kind of pencil did you get?’

(Groningen Dutch; ter Laan 1953)

From a surface perspective, the *hoe zo’n* pattern in (44b) is quite similar to the possessive doubling pattern *wie + z’n* (who + his; ‘whose’) in (45). In both patterns,

³⁴ I take the nominal expression *oes* to occupy [Spec, PP], just like Standard Dutch *hoe*. Interestingly, certain R-pronouns featuring so-called adverbial *-s* also occupy [Spec, PP]. This is exemplified in (i):

(i) Jan heeft toen [PP *ergens/nergens* op] gerekend.
 Jan has then somewhere/nowhere on counted
 ‘Jan counted on something/nothing.’

³⁵ This cross-dialectal variation as regards the appearance of adverbial *-s*, which I take to be a realization of the categorial head *n*, is more widespread. For example, certain Dutch dialects have the form *toen+s* (then+s, ‘then’) instead of the (Standard Dutch) form *toen*. See e.g. *tons* in Deinze Dutch (East-Flanders), *tongs* in Brugge Dutch (West-Flanders). See: <https://www.mijnwoordenboek.nl/dialect-vertaler.php?woord=toen>.

³⁶ See Corver and Van Koppen (2011a) for discussion of the various manifestations of the *wat voor*-construction across Dutch dialects.

a [+wh]-element is doubled by a related [-wh]-element. In (45), for example, we have the interrogative possessor *wèl* and the doubling possessive pronoun *z'n*, and, in (44b), we have the interrogative *wh*-word *hou* and the doubling demonstrative pro-form *zoo*.³⁷

- (45) [*Wèl*_{+wh} *zien*_{-wh} *bouk*] is dat? (Groningen Dutch; ter Laan 1953: 54)
 who his book is that
 'Whose book is that?'

In the generative-linguistic literature, doubling patterns involving personal pronouns have been analysed as composite pronominal forms in which the (strong-pronominal) doubler occupies the Spec-position of the (weak-pronominal) doublee.³⁸ Building on these proposals, I propose that the sequence *wèl zie'n* has the phrasal structure in (46a), while the sequence *hou zoo'n* has the phrasal structure in (46b):

- (46) a. [_{DP} *wèl* [_{PosP} *zie* [_{nP} *n*^o [^o 'n]]]] + *bouk* (Groningen Dutch; see (45))
 b. [_{DP} *hou* [_{DemP} *zoo* [_{nP} *n*^o [^o 'n]]]] + *grivvel* (Groningen Dutch; see (44b))

I take *'n* (pronounced: schwa + n) to be a pro-form similar to English *one* (see Corver and Van Koppen 2011b; Corver 2017). In (46a), it designates 'person', while in (46b) it designates 'type'/'kind'.³⁹

I will now turn to a third argument in support of the hypothesis that the *wh*-element *hoe*_Q is part of a larger nominal expression. The pertinent pattern comes from Katwijk Dutch, as discussed in Overdiep (1936: 600). Overdiep points out that Katwijk Dutch permits nominal expressions such as *hoe'n zuinige kok* in (47), in which the degree word *hoe*_Q is separated from the gradable adjective *zuinige* by an interspersed element *'n*.

³⁷ The doubling possessive construction is also possible in Standard Dutch: *wie z'n boek* 'whose book'.

³⁸ See Uriagereka (1995) for clitic-doubling (ia) and Van Craenenbroeck and Van Koppen (2008) for subject-doubling (ib) in West-Flemish.

- (i) a. *Lo* empujaron *a Juan* (Spanish)
 him pushed to Juan
 'They pushed Juan.'
 b. *He-de* *gij* *da* *gezien?* (Brabantish Dutch)
 have-you_{weak} you_{strong} that seen
 'Have you seen that?'

As proposed by these authors, the clitic/weak pronominal element (*lo, de*) and the strong (pro)nominal element (*a Juan, gij*) form a syntactic unit underlyingly. Somewhat simplified, these can be represented as follows: (i) [_{DP} *a Juan* [_{D'} *lo*]]; (ii) [_{DP} *gij* [_{D'} *de*]]. As the authors point out, the derived structure results from movement of the clitic/weak pronoun out of the complex pronoun.

³⁹ For reasons of space, I restrict myself here to giving some additional examples of the occurrence of the nominal pro-form *-en*. It should be noted that *-en* can represent different kinds of units or entities, such as 'space/location'—*naar achteren*, lit.: to behind-*en*, 'backwards'—and 'time'—*na en-en*, lit.: after one-*en*, 'after one o'clock'. Interestingly, many words for geographical locations end with *-en*: *Leid-en*, *Groning-en*, *Zwed-en* (Sweden). Note that the 'person' reading of *-en* can still be recognized in the noun *jongen* 'boy', which, historically, presumably relates to *jong-en* (young+one).

- (47) Dat kwam er an [_{NP} *hoe'n* zuinige] kok]
 that depended there upon how-a/one frugal cook
 of je 'n haai. (Katwijk Dutch)
 if you NEG had
 'It depended on how efficient a cook you had.'

Of course, it is tempting to analyse the component 'n of *hoe'n* as an indefinite article belonging to (i.e., combining with) the modified noun phrase *zuinige kok* 'frugal cook', and not to the *wh*-word *hoe*. Such an analysis, however, raises the question as to how the article 'n gets interspersed in between the degree element *hoe*_Q and the attributive adjective *zuinige*. One approach would be the following: *hoe*_Q starts out as a component of the attributive adjective phrase, as in [_N [*hoe* *zuinige*] kok], and ends up in a position preceding the indefinite article as a result of movement to, say, [Spec, DP], as in: [_{DP} *hoe* [_D 'n [*hoe* *zuinige*] kok]]. Such an analysis, however, raises the question as to why subextraction of *hoe* does not trigger a Left Branch Condition effect (Ross 1967; Corver 1990). Normally, the degree word *hoe* cannot be removed from within an adjective phrase, as exemplified in (48a); pied piping is required, as in (48b):

- (48) a. *Ik vraag me af *hoe* deze kok [*hoe* *zuinig*] is.
 I wonder REFL PRT how this cook frugal is
 'I wonder how frugal this cook is.' (Standard Dutch)
 b. Ik vraag me af [*hoe* *zuinig*] deze kok ~~*hoe* *zuinig*~~ is.

Another piece of evidence against interpreting 'n in (47) as an indefinite article comes from the following example, drawn from Overdiep (1936:600).

- (49) Dat kwam er an [_{AP} *hoe'n* lang] je zaewerd
 that came there on how-a/one long your journey
 en was. (predicative AP)
 NEG was
 'It depended on how long your journey lasted.'

In this example, there is no noun present to which 'n, if it were an article, could belong. Importantly, *hoe'n lang* is a predicative adjective phrase in (49). Since it is unlikely that 'n combines with the adjective *lang*, one comes to the conclusion that 'n forms a unit with *hoe*. Taking the position that Dutch varieties—in *casu*, Katwijk Dutch ((47), (49)) and Groningen Dutch (44b)—have the same underlying structure, I propose that Groningen Dutch *hoe'n* has the structure in (50), where ZO is a silent grammatical formative.⁴⁰

- (50) [_{DP} *hoe* [_{DemP} ZO [_{NP} n^o ['n]]]] + lang

⁴⁰ Overdiep (1936: 600) notes that Groningen Dutch has the patterns *hou'n dat* (how-*n* that) and *hou'n of* (how-*n* whether), where *dat* is a declarative subordinating conjunction and *of* an interrogative subordinate conjunction.

As shown by the Standard Dutch form *hoe* in (48b), Standard Dutch does not permit the presence of *'n* in combination with *hoe*. Under the assumption that the internal structure of adverbial pronouns is the same across dialectal varieties of Dutch, I take the inner organization of Standard Dutch *hoe* to be just like (50), the only difference being that the root does not externalize but remains silent (here represented as *MATE* ‘extent/degree’, a silent measure noun):

- (51) [DP *hoe* [DemP ZO [nP n° [MATE]]]]

Let me finish my discussion of the inner organization of *hoe*_Q with another pattern featuring *hoe*, namely the reason-adverbial *hoezo* ‘why’, which is exemplified in the discourse fragment in (52):

- (52) A: Je mag niet fietsen in dit park.
 you may not cycle in this park
 ‘You are not allowed to cycle in this park.’
 B: *Hoezo* mag je niet fietsen in dit park?
 how-so may you not cycle in this park
 ‘How come you are not allowed to cycle in this park?’

The linguistic expression *hoezo* has a reason-adverbial meaning (‘how come?’/‘why?’) and typically occurs in root (i.e. non-embedded) clauses. Although the grammatical nature of this interrogative element has remained quite mysterious so far, it seems to fall (more) into place if one assumes that this interrogative *hoe*-pattern has the same inner organization as the interrogative *hoe*-patterns discussed earlier, namely the one in (53):

- (53) [DP *hoe* [DemP ZO [nP n° [REASON]]]]

Note that the inner organization of *hoezo* in (53) is quite similar to that of Groningen Dutch *hou zo'n* in (44b). They only differ as regards the choice of the silent root.

Summarizing, I have tried to show that the linguistic expression *hoe*_Q, traditionally analysed as an interrogative adverb, is actually a nominal expression (DP) with a composite structure, as in (54). Evidence for this structure came from different types of interrogative *hoe*-patterns in dialectal/colloquial varieties of Dutch. In those varieties, components of the nominal expression (e.g. *-s*, *'n*, *zo*) externalize, this way providing evidence for the existence of a nominal structure. Taking structural symmetry seriously, both at the cross-constructional level (i.e., *hoe*_{manner}, *hoe*_{degree}, *hoe*_{kind}, etc.) and at the cross-dialectal level, I assume that the inner structure of these *hoe*-expressions is the same. Differences relate to the set of silent roots (WAY, EXTENT, KIND, REASON) that can combine with the categorizing node n°, and the externalization of the components within the extended nominal

projection, more specifically, the root (silent or pro-*nominal* 'n) and functional material (-s, zo, or silent).⁴¹

(54) [_{DP} hoe [_{DemP} (zo) [_{NP} n^o [_{Root} WAY/EXTENT/KIND/REASON]]]]

I propose that this approach, according to which the various manifestations of *hoe*_Q have the same underlying base structure, should be extended to eventive *hoe* (i.e. *hoe*_E). Specifically, *hoe*_E has the phrasal structure in (54), with WAY being the silent root. Being a phrase, *hoe*_E cannot occupy a functional head position in the left peripheral complementizer system. It rather occupies a specifier position. In Section 6.5, I will try to give more substance to this claim by examining more closely the syntax of declarative complement clauses in Dutch.

6.5 *Hoe*_E as a nominal marker of the complement clause

As shown in (55), declarative clauses in Standard Dutch are typically introduced by the subordinating conjunction *dat* 'that', which is typically analysed as the head of CP.

(55) Ze zeiden [_{CP} *dat* ik moest gaan zitten]. (Standard Dutch)
 they said that I had.to go sit
 'They said that I had to sit down.'

As shown by the English translation, English displays the same pattern: the declarative complement clause is introduced by the subordinator *that*, which functions as the head of CP.

The verb in (55) (*zeiden/said*) appears to merge directly with its complement clause. It has been argued, though, in the generative-linguistic literature that complement clauses are introduced by a nominal element. Rosenbaum (1967), for example, proposes that English *that*-clauses have the structure in (56):

(56) They said [_{NP} it [_{Clause} that I had to sit down]].

According to Rosenbaum, the *that*-clause in (56) is introduced by the pronoun *it*, which heads an NP in which the declarative clause is embedded. The pronoun gets deleted in the course of the derivation, yielding the surface pattern *They said that I had to sit down*.⁴²

⁴¹ According to the representation in (54), WAY is a basic (i.e. primitive) element. Carla Umbach (p.c.) raises the question as to whether WAY, understood as being similar to 'manner', might be reduced to 'similarity', which, in Umbach et al. (2021), is interpreted as 'indistinguishability'. At the moment, I don't have any clear thoughts on this issue, but I would like to point out that, if the meaning component 'similarity' is part of the nominal projection in (54), then the layer Dem(onstrative)P might be a plausible syntactic locus for the encoding of such a meaning property.

⁴² Recently, Rosenbaum's idea has been taken up by Kayne (2003b), who argues that 'For an IP to function as the argument of a higher predicate, it must be nominalized.'

Interestingly, there are languages in which the nominal material is not silent but (partially) overt. As shown in (57a), for example, Korean has the noun *kes* ‘thing’ as an ‘intermediate element’ between the verb (*mit-e*) and the clause (*kay-ka...ha-yass-ta-nun*); see Horie (2000); Kim (2009). In Spanish, it is not a noun that surfaces overtly but rather the definite article *lo* in combination with the prepositional element *de* ‘of’, as in (57b); see Picallo (2002); Serrano (2015).

- (57) a. Na-nun [kay-ka swukecey-lul ta ha-yass-ta-nun
 I-TOP he-NOM homework-ACC all do-PST-DECL-ADN
kes-ul] mit-e
kes-ACC believe-DECL
 ‘I believe that he finished his homework.’
- b. Juan ya me dijo [*lo* N₀ *de* que María compró
 Juan already to.me said the of that Maria bought
 una casa nueva].
 a house new
 ‘Juan already said to me that Maria bought a new house.’

Although in Standard Dutch (and also in certain dialectal varieties), there is no direct (i.e. overt) evidence for the presence of a nominalizing element in sentences like (55), there possibly is in other dialectal varieties. Consider for this the examples in (58), which represent dialects from different parts of the Netherlands and Flanders.⁴³

- (58) a. En (hy) heeft aan mij verhaalt, [*als dat* hij was
 and he has to me told *als* that he was
 aangesteld tot examinateur [..].
 appointed as examiner
 ‘And he told me that he was appointed examiner.’
 (Zaans Dutch; Boekenoogen 1897/1971: 88)
- b. Toen zegden ze [*(als) dat* ik most neerzitten].
 then said they *als* that I had.to sit.down
 ‘Then they said that I had to sit down.’
 (Aarschot Dutch; Pauwels 1958: 404)

⁴³ For discussion of the sequence *als dat*, see Overdiep (1936: 604), De Rooij (1965: 65–66), and Leys (2005). As Leys (2005: 112) notes, there are dialects in which *als* has been reduced to *l-* and fused with the subordinator *dat*, yielding the surface form *lat* (see also Paardekooper 1990).

- (i) Hij zegt *lat* de dokter kommen is. (De Bo 1873, West-Flemish)
 he says *l-that* the doctor arrived has
 ‘He says that the doctor has arrived.’

Leys points out that *lat* is also attested in ‘complex conjunctions’ of the type *foorlat* (before + *l* + that, ‘before’), *omlat* (because + *l* + that, ‘because’), *deurlat* (because + *l* + that, ‘because’).

- c. Ie zai [az dat ie zal komen].
 he said az that he would come
 ‘He said that he would come.’
 (Southern-East Flemish; Teirlinck 1924: 209)
- d. hje zéj [ol dat hen goenk komm].
 he said ol that he went come
 ‘He said that he would come.’
 (Oosterend Dutch; Desnerck 1972)
- e. Hai zee, [as dat e ’t doun zol].
 he said as that he it do would
 ‘He said that he would do it.’
 (Groningen Dutch; ter Laan 1953: 113)
- f. Wie verlangt dernöör [as dat iejluu komt]?
 who longs for.it as that you_{plur} come
 ‘Who wants you to come?’
 (Deventer Dutch; Kuijk 1993: 145)
- g. Ik ben bang [a’s tä de keerze geleek bevroore
 I am afraid a’s that the cherries all frozen
 zulle zen].
 will be
 ‘I am afraid that the cherries will all be frozen.’
 (Kempeland Dutch; De Bont 1958: 457)

The question obviously arises as to what kind of element *a(l)s* is and what grammatical role it fulfils within the clause in which it is embedded. As shown in (59a), I propose that *als* is not an atomic lexical item but rather has a composite structure consisting of three elements: (i) *al* (lit.: ‘all’), (ii) adverbial *-s*, which I analyse as a realization of little *n* (see Section 6.4), and (iii) a silent lexical root (THING). In line with the analysis in Section 6.4, I take adverbial *-s* to be a last resort manifestation of the categorial node *n*. When the silent root adjoins to *n*, as in (59b), *n* must be spelled out phonologically, the underlying assumption being that minimally one component of a complex head (e.g. [THING+n]) must externalize.

- (59) a. [_{DP} al [_{nP} n [THING]]]
 b. [_{DP} al [_{nP} THING+n (= -s) [THING]]]

Let me briefly dwell on the components *al* and THING in (59), starting with the latter. Following Moulton (2020), I assume that verbs such as ‘say’ (Dutch: *zeggen*), ‘believe’, ‘know’ etc. require a silent, semantically light noun (*thing*) that denotes a contentful object—an attitudinal object in the sense of Moltmann (2013)—whose content is the proposition that combines with the noun.⁴⁴ As for *al*, this element

⁴⁴ As an illustration of attitudinal objects, Moltmann (2013) gives complex NPs like (i), in which *belief/claim* combines with a clausal complement.

- (i) John’s belief/claim that Mary likes Bill

is most familiar from nominal expressions such as those in (60), where *al* fulfils the role of a universal quantifier that combines with a referential DP (Zwarts 1991:156).

- (60) a. *al de mannen* b. *al het water*
 all the men all the water
 ‘all men’ ‘all water’

Besides its role as a universal quantifier, *al* is also found as a sort of reinforcing element on various types of ‘adverbs’, such as locative adverbs (61a, b), manner adverbs (61c), and temporal adverbs (61d).⁴⁵

- (61) a. Hij woont in Rome en heeft (*al*)*daar* een goedlopend
 he lives in Rome and has (all)there a successful
 bedrijf.
 company
 b. De meeste mensen (*al*)*hier* keken uit naar zijn
 the most people (all)here looked forward to his
 komst.
 arrival
 c. De gemeenteraad besloot (*al*)*dus* op maandag 24 mei.
 the city-council decided (all)thus on Monday 24 May
 d. Ga je (*al*)*weer* naar het café?
 go you (all)again to the pub

Since the quantifier-like element *al* is typically found as part of a nominal expression, as in (60), I conclude that the italicized elements in (61), traditionally analysed as being adverbs, are actually nominal expressions.⁴⁶ According to this analysis, *aldaar*, for example, has the following structure: [*al daar* [PLACE]]. Since *al* in (61), unlike *al* in (60), does not seem to fulfil a quantificational role, but rather a reinforcing or strengthening role, I tentatively analyse it as an expletive element.

Having argued that *a(l)s* in (58) is a nominal expression (DP) that introduces a declarative complement clause, I will next address the question as to how this expression is combined with the declarative clause. One option would be to say that the declarative clause is a complement selected by the noun, as in Rosenbaum’s analysis in (56). According to this structural analysis, the Groningen Dutch sequence *as dat e ’t down zol* in (58e) would have the structure in (62):

⁴⁵ This reinforcing role of *al* is quite common, as is also clear from the following additional examples: *algeheel* (all+entire, ‘overall/total’), *al(s)maar* (all+yet, ‘continuously/repeatedly’), *alreeds* (all+ready, ‘already/by now’). Interestingly, *al* is also found on certain subordinating conjunctions, such as (*al*)*hoewel* (all+though, ‘(al)though’), and *alvorens* (all+before+en+s, ‘before/prior to’). The presence of *al* in these composite conjunctions hints at the presence of a nominal expression.

⁴⁶ See also the discussion of English *there*, *thus* and *then* in Section 6.4.

- (62) Hai zee [DP a(l) [nP n (= -s) [[THING] [CP dat e 't down
 he said all -s that he it do
 zol]]]]. (Groningen Dutch)
 would
 'He said that he would do it.'

Instead of adopting an (endocentric) head-complement analysis, I propose an analysis in which the nominal expression occupies the specifier position of the declarative clause. This specifier-analysis gives us the structural representation in (63) for example (58e):⁴⁷

- (63) Hai zee [CP [DP a(l) [nP n (= -s) [THING]]] [C' dat e 't down
 he said all -s that he it do
 zol]]. (Groningen Dutch)
 would
 'He said that he would do it.'

According to this analysis, the nominal expression occupying [Spec, CP] qualifies the proposition *dat e 't down zol* ('that he would do it') as being of the type 'thing'. This relationship might technically be implemented in terms of Rizzi's (1991) Criterion Condition. This configurational condition on the relationship between two markers designating the same meaning-related property states the following:

(64) Criterion Condition

- a. Each $X_{[F]}$ must be in a Spec-Head relation with a [F]-operator.
- b. Each [F]-operator must be in a Spec-Head relation with a $X_{[F]}$.

A nice parallel can be drawn here with bipartite negation (*ne...pas*) in a language like French. The relation between *ne* and *pas*, which historically relates to the noun *pas* carrying the meaning 'step', has been interpreted as one between a negative functional head (*ne*) and a negative phrase (*pas*).⁴⁸ More specifically, it has been proposed that the negative phrase *pas* occupies the Spec-position of the negative head Neg (*ne*), as in (65):

- (65) [_{NegP} [_{XP_{+neg}}] [_{Neg'} Neg]]

This NegP-configuration is exemplified in (66), where (66a) represents the base structure and (66b) the derived structure. As indicated in (66b), it is assumed that the negative clitic is picked up by the finite verb when it is on its way to I/Tense (Pollock 1989).

⁴⁷ According to Chomsky's (2013) theory of syntactic projection, the CP-structure of the embedded clause in (63) is an exocentric XP-YP-configuration (*in casu* DP-CP), where X and Y can be taken as the label of this syntactic object if X and Y are identical in a relevant respect (e.g., by sharing a certain feature, *in casu* the feature 'Substantive'; see (68) below).

⁴⁸ See also *ne...point* (lit.: not..point), as in *Je ne lui ai point révélé mon secret* ('I didn't reveal my secret to him').

- (66) a. Je crois que [_{IP} elle [_{I'} a [_{NegP} *pas* [_{Neg'} *ne* [a vu son père]]]]]
 I believe that she has not not has seen her father
 'I believe that she didn't see her father.'
- b. Je crois que [_{IP} elle [_{I'} [*ne+a*] [_{NegP} *pas* [_{Neg'} *ne* [a vu son père]]]]]

With $F = +neg$, we have the Neg-criterion. According to Rizzi (2006), the Criterion Condition can be looked upon as a universal well-formedness condition on the interface level LF expressing the way in which certain phrasal expressions (e.g. negative constituents, *wh*-phrases) are assigned scope or a special discourse property. The negative operator *pas* in (66), for example, enters into a Spec-Head relation with the negative clitic *ne*, which gives rise to the expression of sentential negation. Interestingly, the property of negation encoded by NegP is 'coloured' or specified by the phrasal negative marker that occupies [Spec, NegP]. This is exemplified in (67), where the negative phrases *plus*, *nullement*, and *aucunement*, which I take to occupy [Spec, NegP], co-occur with *ne*.

- (67) a. Le timbre *ne* colle *plus*.
 the stamp *ne* sticks *plus*
 'The stamp does not stick anymore.'
- b. Le timbre *ne* colle *guère*.
 the stamp *ne* sticks *guère*
 'The stamp hardly sticks.'
- c. Le timbre *ne* colle *aucunement/nullement*.
 the stamp *ne* sticks at.all
 'The stamp does not stick at all.'

Adopting the Criterion condition, I propose that the CP-structure in (63) is another instance of the criterial configuration. The question obviously arises as to what formal feature is shared by the nominal expression [$a(l)$ [$n (= -s)$ [THING]]] and the C-head in (63). I propose that this feature is 'Substantive' (see Chomsky 1970), which for the sake of convenience I represent as [S].⁴⁹ The criterial configuration of the CP in (63) thus looks as in (68), where the complementizer *dat* designates the formal property 'substantive' and *als* in [Spec, CP] determines the 'contents' of the substantive feature, specifically: it is a declarative clause that denotes a contentful object of the type 'thing' (see Moulton 2020).

- (68) [_{CP} [_{DP} *als*]_[+S] [_{C'} *dat*_S]]

Before turning to the structural representation of *hoe_E*-complements, let me return to the Standard Dutch clause in (55). Clearly, the object clause does not feature

⁴⁹ According to Chomsky (1970), the traditional notion 'substantive' corresponds to the categorial feature [+N], while the traditional notion 'predicate' corresponds to the categorial feature [+V]. Thus, [+S] in (68) represents the same feature as [+N]. In the spirit of Distributed Morphology, one might also represent the substantive feature by means of the categorial feature 'n'.

the nominal expression *als*. In line with Chomsky's (2001: 2) Uniformity Condition, I will assume that the structural configuration in (68) also underlies the Standard Dutch declarative clause in (55). As opposed to the dialectal varieties in (58), however, the nominal expression *als* remains silent, represented in (69) as ALS. Possibly, this silence of the nominal marker could be interpreted as a doubly filled XP-effect.

(69) [CP [DP ALS]_[+S] [C' dat_S]]

If my interpretation of *als* in the direct object clauses in (58) is on the right track, then it does not seem implausible to assume that eventive *hoe* (i.e. *hoe_E*), which occurs at the beginning of a non-interrogative complement clause, is another instance of a nominal marker that is base-generated in [Spec, CP] and assigns 'contents' to the substantive feature (S) associated with the complementizer. Under such an analysis, the eventive complement in (7), repeated here as (70), would have the structural representation in (71)⁵⁰:

(70) Ik vertelde aan Jan [*hoe* de studenten het probleem
I told to Jan how the students the problem
snel en adequaat oplossen].
fast and adequately solved
'Jan told about the students' quickly and adequately solving the problem.'

(71) ... [CP [DP *hoe* [_{NP} n [WAY]]]_[+S] [C' C_[S] [de studenten het probleem *snel enadequaat* oplossen]]].

As indicated in (71), I take *hoe_E* to be a phrasal expression with an inner structure.⁵¹ It is the same linguistic expression as *hoe_Q*, which was discussed in Section 6.4.⁵² In other words, *hoe_E* = *hoe_Q*. Just like *als* in (68), the nominal expression

⁵⁰ Importantly, *hoe_E*-clauses should not be analysed as free relatives such as (ia) and (ib).

- (i) a. Jan keurt [**hoe** jij _{t_{hoe}} haar behandelt] helemaal af.
Jan rejects how you her treats entirely PRT
'Jan completely rejects how/the way you treat her.'
- b. [_{PP} Over [**hoe** hij jou behandelt]] moeten we het nog een keer hebben.
about how he you treats must we it PRT one time have
'One day we should talk about how/the way he treats you.'

A characteristic property of the *wh*-element *hoe* in free relatives, is that it can be substituted for by *zoals* (lit.: so + all + -s, 'as/'like'). Thus, when *hoe* in (ia, b) is replaced by *zoals*, we still have a fully acceptable clause. Replacement of *hoe_E* by *zoals*, on the contrary, yields an ill-formed sentence. In (70), for example, *hoe* cannot be replaced by *zoals*:

- (ii) *Ik vertelde aan Jan [*zoals* de studenten het probleem *snel en adequaat* oplossen].

⁵¹ For the sake of simplicity, I have left out the DemP-layer; see (54).

⁵² See Umbach et al. (2021) for the claim that German *wie_Q* and *wie_E* are one and the same linguistic expression.

hoe in (71) specifies the contents of the substantive feature on C. Specifically, *hoe*_E assigns the contents ‘manner’/‘way’ to the substantive feature. Thus, the declarative clause designates a manner-like (eventive) object. The proposition that follows the sequence *hoe*_E+C gives further information (details) about this manner-like object.⁵³ It specifies the way in which the event (the students’ solving the problem quickly and adequately) ‘evolved’. This sequence of problem-solving steps can be seen as a method of problem solving; see Umbach et al. (2021).

As is clear from the analysis in (71), *hoe* does not occupy the C-head but is located in [Spec, CP], which is compatible with its (hidden) phrasal status.⁵⁴ There is also independent evidence that *hoe*_E does not instantiate the C-head. Consider for this the following examples:

- (72) a. En ik zag [*hoe dat* hij maar zijn best deed om
and I saw how that he but his best did for
toch maar aandacht te kunnen krijgen].
still but attention to be.able get
‘And I saw him doing his best for getting attention from other people.’
([http://www.dekiem.be/documents/tijdschrift/
2015%20De%20Kiem%204.pdf](http://www.dekiem.be/documents/tijdschrift/2015%20De%20Kiem%204.pdf))
- b. Ik zag [*hoe dat* hij nog verder in elkaar kroop].
I saw how that he even further in each.other crawled
‘I saw him cringing even more.’
(<https://www.wattpad.com/218876529-destroy-us-h-24>)
- c. Ik zag [*hoe dat* het beest daar ginds en weder
I saw how that the animal there to and fro
zwom, [...]].⁵⁵
swam
‘I saw the animal swimming to and fro.’
(<http://www.liederenbank.nl/liedpresentatie.php?zoek=19588>)

⁵³ The analysis of *hoe*_E proposed here seems quite similar in spirit to the one proposed by Umbach et al. (2023), who call non-interrogative manner complements ‘depictive complements’. According to their analysis, the high manner *wh*-element triggers what they call ‘a similarity cloud’. This cloud of similar eventualities serves as a cue for the addressee to think of ways picturing the content of the complement clause. See Umbach et al. (2023) for further details.

⁵⁴ Recall from Section 6.4 that there are dialects (e.g. Aarschot Dutch) in which interrogative manner *hoe* has the form *oes*, which was analysed as a composite form with the following structure:

(i) [Noun Phrase oe [_{nP} [WAY+N (= -s)] [~~WAY~~]]] (Aarschot Dutch)

Unfortunately, I haven’t been able to find any examples of *hoe*_E-complements in the available dialect grammars or electronic resources.

⁵⁵ Example (72c) is a verse taken from a song based on Jacob Cats’s *Huwelijk* (1847), cited from *Dichtwerken van Jacob Cats naar de behoeften van den tegenwoordigen tijd ingerigt*. 3de deel. Deventer (1847: 135).

As these examples show, it is possible (for certain Dutch speakers) to have *hoe_E*-complements in which there is an overt C-head *dat* in addition to the clause-introducing element *hoe_E*. The existence of this pattern (*hoe_E+dat*) suggests that *hoe_E* does not occupy the C-head.

Having argued that *hoe_E* is a nominal expression occupying [Spec, CP], which, just like *als*, assigns substantive contents to the clause (CP), I will now turn to the question as to what syntactic position the manner adverbial *hoe_Q* occupies in the clausal left periphery. As will be shown in Section 6.6, *hoe_Q* is moved from a VP-internal position to the specifier position of a functional phrase in which the (substantive) CP is embedded.

6.6 *Hoe_Q* as a displaced phrase within a complement clause

I start my investigation of the syntactic placement of *hoe_Q* with the *hoe_Q*-complement in (73)⁵⁶:

- (73) Ik vroeg aan Jan [*hoe* zij het probleem *hoe*
I asked to Jan how they the problem
hadden opgelost].
had solved
'I asked Jan how they had solved the problem.'

One might hypothesize that *hoe_Q* occupies exactly the same left-peripheral position as *hoe_E*, that is [Spec, CP]. Recall from the previous section that, for certain speakers of Dutch, *hoe_E* can co-occur with *dat* (see (72)). As shown in (74), we see a similar co-occurrence phenomenon with *hoe_Q* and the subordinating conjunction of 'if'/'whether'. On the basis of this similarity, one might come to the conclusion that *hoe_Q* and *hoe_E* both occupy [Spec, CP], under the assumption that subordinating conjunctions *dat* and *of* can both instantiate C.

- (74) Ik vroeg aan Jan [*hoe_Q* *of* zij het probleem *hoe*
I asked to Jan how if they the problem
hadden opgelost].
had solved
'I asked Jan how they had solved the problem.'

The conclusion that the sequences *hoe dat* in (72) and *hoe of* in (74) instantiate the same structural configuration should not be drawn too quickly, however. As noted in De Rooij (1965) and Hoekstra and Zwart (1994), there are patterns in colloquial/dialectal Dutch which strongly suggest that the interrogative subordinator

⁵⁶ Recall from Section 4 that *hoe* undergoes PP-internal movement; see (38). Thus, the displaced element in (73) is a displaced PP.

of and the declarative subordinator *dat* do not occupy the same syntactic slot in the complementizer system. Some pertinent examples are given in (75):

- (75) a. Jan vroeg [*of* [*dat* Marie ziek was]].
 Jan asked if that Marie sick was
 ‘Jan asked whether Marie was sick.’
 (colloquial Dutch; Hoekstra and Zwart 1994)
- b. Ik weet niet [*of* [*dat* hij nog ziek is]].
 I know not if that he still sick is
 ‘I don’t know whether he’s still sick.’
 (Aarschot Dutch; Pauwels 1958: 405)

As these authors observe, a *wh*-phrase like *wie* ‘who’ can be used in combination with the sequence *of* + *dat*. This is exemplified in (76):

- (76) Jan vroeg zich af [*wie of dat er wie ziek was*].
 Jan wondered REFL PRT who if that there ill was
 ‘Jan wondered who was ill.’

As indicated in (76), I assume that *wie* moves directly to the syntactic position that precedes the subordinator *of*. In other words, there is no stopover in the specifier position of the complementizer *dat*. As a matter of fact, such a stopover is impossible if it is assumed, in the spirit of my analysis in Section 6.5, that there is a silent nominal element (*ALS*) in [Spec, CP]; see (69).⁵⁷

Notice that the same sequence—that is, *wh*-phrase + *of* + *dat*—is found with *hoe*_Q. Two examples are given in (77)⁵⁸:

- (77) a. [...] en daarom begreep hij dat Dmitri Ivanovitsj
 and therefore understood he that D. I.
 hem vroeg hoe of dat het met hem ging.
 him asked how if that it with him went
 ‘[...] and that’s why he understood that Dmitri Ivanovitsj asked him
 how he was doing.’
 (<https://petermabelus.com/proza-2/rusland/>)
- b. Men achtte dat niet nodig, omdat iedereen toen
 one considered that not necessary because everyone then

⁵⁷ Thus, the derived structure of (76) looks as follows: [*wie* [*of* [_{CP} *ALS* [_C *dat* [_{TP} ...*wie*...]]]]].

⁵⁸ As the authors point out, there are also Dutch varieties in which the sequence *wie dat* is permitted. Example (i) is an illustration from Kempenland Dutch (De Bont 1958: 457):

- (i) Goo is keke *wie dāt* er is.
 go once look who that there is
 ‘Can you please check who is there?’

I assume that the sequences (i) *wie of dat*, (ii) *wie of*, and (iii) *wie dat* are surface manifestations of one and the same base configuration (see also Hoekstra and Zwart 1994).

wel wist *hoe of dat* het zat.
 PRT knew how if that it was
 ‘People thought it was not necessary because everyone knew by
 then how things stood.’

(<https://www.uitvaart.nl/juridisch/begraven/eigen-graf-particulier-graf-of-familiegraf/grafrechten-na-100-jaar-weer-kosten-in-rekening-brengen/5543>)

Also for the patterns in (77), I assume that the interrogative *wh*-phrase moves directly from a VP-internal position to the specifier position of *of* without making an intermediate stop in [Spec, CP]. Potential evidence for the proposal that the *wh*-phrase moves directly to [Spec, *of*] in patterns such as (76) and (77) comes from example (78), which is taken from Deventer Dutch (Kuijk 1993).

(78) lk wete neet *wanneer of as* ik kan.
 I know not when if as I can
 ‘I don’t know when I will be available.’

In this example, *of* is not followed by the complementizer *dat* but rather by the element *as*. Recall from Section 6.5—see (58), especially (58f)—that *as* was analysed as a nominal expression that is base-generated in [Spec, CP] and assigns substantive content (say, ‘thing’) to the substantive feature on C.⁵⁹ If this structural analysis of *as* is correct, then *wanneer* must move directly to [Spec, *of*] in (78). The derived representation is given in (79):⁶⁰

(79) lk wete neet [*wanneer* [*of* [_{CP} *as*_[+S] [_C C_S [_{TP} ik ~~*wanneer*~~ kan]]]]].

The question obviously arises as to what kind of syntactic projection *wh*-phrases such as *wie* (76), *hoe* (77) and *wanneer* (78) move to. This question will be addressed in Section 6.7.

⁵⁹ Importantly, Deventer Dutch has a distinct word for the declarative subordinator ‘that’; see (i) and (58f).

(i) lk geeluve [*dadde wie vanmiddag vrie hebt*].
 I believe that-1P.PI we this.afternoon free have
 ‘I believe that we don’t have to go to school this afternoon.’

⁶⁰ As noted in Kuijk (1993: 145), Deventer Dutch also permits patterns in which the *wh*-phrase is followed by a single conjunctive element:

(i) a. Weet iej *wat of e ezegd hef?*
 know you what if he said has
 ‘Do you know what he said?’
 b. Weet iej *wat as e ezegd hef?*

6.7 The subordinator *of* as a dummy adposition

Now that we know that the subordinators *of* and *dat* occupy different structural positions in the clausal left periphery, let us have a closer look at the grammatical nature of this layered complementizer system. As a starting point, I take the proposal, discussed in Section 6.5, that *dat*-clauses contain a nominal marker in [Spec, CP]. Recall that this nominal marker provides the substantive feature on C with contents (e.g. THING), this way satisfying the Criterial Condition (see (64)). If the conclusion that C(P) has a substantive 'flavour' is correct, then this may tell us something about the grammatical nature of the Dutch functional category *of* 'if'/'whether', which takes the 'substantive' CP as its complement. I tentatively propose that *of* is an adpositional complementizer (i.e. P).⁶¹ This implies that we have the structural configuration in (80) for the embedded clause in (75a).

(80) ... [PP Spec [P' of [CP [DP THING]_[+S] [C' dat_S Marie ziek was]]]].

In what follows, I will give some evidence in support of the claim that the subordinator *of* is an adpositional subordinator. A first potential argument comes from the observation that *of*, just like the prepositions *na* 'after', *voor* 'before', *tot* 'till', etc. can be followed immediately by the subordinator *dat*. In other words, besides the pattern *of* + *dat* in the left periphery of a clause (see (75)), we also have the pattern *na/voor/tot* + *dat*, as exemplified in (81); see Van Riemsdijk (1978); Bennis and Hoekstra (1984)⁶²:

(81) ... [PP voor /na/tot [CP dat Jan vertrok]].
 before/after/till that Jan left
 '...before/after/till John left.'

Interestingly, there do not seem to be any 'complex conjunctions' in which adpositions such as *voor/na/tot* are followed by *of*; that is, *P + *of*. The non-cooccurrence of P and *of* could be interpreted in terms of complementary distribution: these elements compete for the same syntactic slot.

⁶¹ See Emonds (1985: chapters 6 and 7) for a similar claim about English *if/whether*. Interestingly, Emonds analyses all embedded clauses (both complement clauses and adjunct clauses) as PPs.

⁶² In certain varieties of Dutch, the element *als* 'as' (instead of *dat* 'that') appears in adjunct clauses that start with a (temporal) adposition. Consider, for example, the following example from West-Flemish (De Bo 1873):

- (i) a. Ik las [PP tot [CP als ik moede wierd]].
 I read till as I tired got
 'I read till I got tired.'
 b. [PP Van [CP als hij mij zag]], kwam hij toegelopen.
 from as he me saw came he towards.walk
 'The moment he saw me, he came up to me.'

A second potential argument comes from the use of the subordinator *of* in adjunct clauses. Before turning to such examples, consider first the minimal pair (82a) and (82b), which are variants of a conditional clause:

- (82) a. *Indien* je dat doet, word je ontslagen.
 in.that you that do are you fired
 ‘If you do that, you’ll be fired.’
 b. *Als* je dat doet, word je ontslagen.
 if you that do are you fired
 ‘If you do that, you’ll be fired.’

Consider first (82a), where the embedded clause is introduced by *indien* (lit.: ‘in’ + demonstrative pronoun; meaning: ‘if’).⁶³ Rather than analysing *indien* as a single word with a composite structure (i.e. [_{Word} *in+dien*]), I propose it has a composite phrasal structure. Evidence against a complex word analysis comes from the stress pattern associated with the sequence *in+dien*. We typically do not find compound stress, as in (83a), but rather phrasal stress, as in (83b), where we have an adpositional phrase consisting of a preposition and a bare noun.⁶⁴ The phrasal stress pattern of *indien* in (82a) is illustrated in (83c):

- (83) a. INzicht (in-sight, ‘insight’), INborst (in-bosom, ‘nature/character’)
 b. in ZICHT (in sight, ‘visible’), in NOOD (in need, ‘in dire straits’)
 c. in DIEN

Having shown that *indien*, which orthographically is a single item, has a composite phrasal structure, I can turn to the next question: What is the placement of the components *in* and *dien* in the syntactic structure? In the spirit of my analysis of the nominal element *als* in (58), I propose that demonstrative *dien* is a nominal expression occupying [Spec, CP], which assigns contents (say, THING/CASE) to the substantive feature associated with C. I further assume that *in* is a functional adposition that takes the (substantive) CP *dien je dat doet* as its complement. Schematically:

- (84) [_{PP} in [_{CP} dien_{+S} [_C C_S [je dat doet]]]]

Let’s next consider the *als*-clause in (82b). Of course, one could propose an analysis in which the left-peripheral organization of the *indien*-clause and that of the *als*-clause are unrelated. Taking cross-constructional symmetry seriously, however, I propose that the two clauses in (82) instantiate the same base structure. A symmetric analysis can be obtained if we follow the idea, proposed in Section 6.5, that

⁶³ The form *dien* in *indien* used to be the dative case form of the demonstrative pronoun. One might argue that *dien* is an unanalysed form in present-day Dutch, which is stored in the lexicon. An alternative analysis would be one in which the *-n* following *die* is not a case form but a pro-form of the type *-en* (i.e. ‘one’); see note 39. Under such an analysis, *dien* would have a composite structure: *die* + *-n*.

⁶⁴ Stress is represented by small capitals.

als is a nominal expression occupying [Spec, CP], which assigns substantive contents ('thing') to the substantive feature associated with C. Suppose now that *als* originates in the same base position as *dien* but differs from the latter in being able to move from [Spec, CP] to the specifier-position of the functional adposition *OF*, whose silence might be interpreted as a doubly filled-XP effect. Schematically:

- (85) [PP *als* [P' OF [CP ~~als~~ [C' Cs [TP je dat doet]]]]]....

If this analysis is on the right track, one may assign the same analysis to other adjunct clauses featuring *als*. Consider, for example, the Standard Dutch temporal clause in (86a), which, under the proposed analysis, has the derived structure in (86b), where *als* stands for [*al* [_{NP} *n* (= -s) [TIME]]]:

- (86) a. Je moet hem altijd welkom heten *als* hij komt.
 you must him always welcome call when he comes
 'You should always welcome him when he comes to visit you.'
 b. [PP *als* [P' OF [CP ~~als~~ [C' C [TP hij komt]]]]]....

Interestingly, there turn out to be dialects in which the temporal clause is introduced by the 'subordinator' *of*, as in the West-Flemish example in (87a). Taking a cross-constructural symmetric approach, I propose that the *of*-clause has the derived structure in (87b). Just like in the Standard Dutch example in (86b), the nominal expression *als*, which has the inner structure [*al* [_{NP} *n* (= -s) [TIME]]], has been moved from [Spec, CP] to the specifier position of P. In this case, however, *als* does not surface and remains silent. It is P that lexicalizes, taking the form of:

- (87) a. Ge moet hem altijd wel ontvangen *of* hij komt.
 you must him always PRT welcome if he comes
 'You should always welcome him, when he comes to visit you.'
 (West Flemish; Van der Sijs 2010;
<https://etymologiebank.nl/trefwoord/of>)
 b. [PP *ALS* [P' of [CP ~~ALS~~ [C' C [TP hij komt]]]]]....

As a final illustration of the derivation of adjunct clauses featuring *als* and/or *of*, consider the simulative adjunct-clauses in (88a) from Standard Dutch and (88b) from Aarschot Dutch (Pauwels 1958: 403)⁶⁵:

- (88) a. Hij doet (als)of hij doof is.
 he does (as)if he deaf is
 'He acts as if he is deaf (i.e. He pretends to be deaf).'

⁶⁵ In the Deventer Dutch simulative construction, *as* also precedes *of* (see Kuijk 1993: 21):

- (i) 't Lik hoast *asof* hier 't geld in 't water wördt egooid.
 it looks almost as-if here the money in the water is thrown
 'It looks as if people are wasting money here.'

- b. Hij doet of dat hij doof is.
 he does if that he deaf is
 'He acts as if he is deaf (i.e. He pretends to be deaf).'

In line with the approach taken so far, I assume that *als* in (88a) originates as a nominal expression in [Spec, CP] and undergoes displacement to [Spec, PP], which I take to be realized as *of*.⁶⁶ I assume that there is a silent nominal expression ALS in the simplex *of*-pattern in (88a) and the complex *of+dat*-pattern in (88b). In the latter pattern, C surfaces as *dat*, as in (88b)⁶⁷:

- (89) a. [_{PP} *als*/ALS [_{P'} of [_{CP} ~~als~~ [_{C'} C [_{TP} hij doof is]]]]]....
 b. [_{PP} ALS [_{P'} of [_{CP} ALS [_{C'} dat [_{TP} hij doof is]]]]]....

According to the analysis sketched above, the conditional clause in (82b), the temporal clause in (86a), and the simulative clauses in (88) are all variations on a clause-structural theme.⁶⁸ Importantly, I assume that the subordinator *of* that appears in these (non-interrogative) clausal environments, is one and the same lexical item. Furthermore, I propose that this uniform structural analysis extends to the subordinator *of* that appears in *wh*-interrogative clauses like (74) and *Yes/No*-interrogative clauses like (75a). Interestingly, certain varieties of Dutch, including Deventer Dutch, permit both the pattern in (90a) and the pattern in (90b).

⁶⁶ If the sequence *als+of* (+ clause) instantiate an adpositional structure, one may raise the question as to whether *alsof* ever appears as a simplex PP (i.e. without the presence of a clause). The pattern in (i) is interesting at this point. Note that *alsof* occurs independently, that is, without the presence of a finite clause. Of course, one might treat these constructions as clausal structures in which the finite clause has been deleted. It should be noted, however, that in many cases *of* cannot be a remnant of deletion (see (ii)).

- (i) A: Jan is lange tijd ziek geweest. B: Volgens mij heeft hij
 Jan has long time ill been According to me has he
 lange tijd [*net alsof*] gedaan.
 long time just as-if done
 (ii) Jan beweert dat hij morgen komt. Nu is het afwachten *of*
 Jan claims that he tomorrow comes now is it wait.and.see if
 *(hij komt).
 he comes
 'Jan claims he will come to us tomorrow. Now we'll have to wait and see if he really will come and visit us.'

⁶⁷ Patterns in which three positions of the complementizer system are occupied, can also be found in certain varieties of Dutch:

- (i) Die verkoper aan de telefoon deed *alsof dat* hij tegen een oud
 that salesman on the phone did as-if that he to an old
 dement mens bezig was.
 demented person busy was
 'That salesman spoke as if he was talking to an old demented person.'

(<http://www.vlaamswoordenboek.be/definities/toon/15240>)

I assume that also in this pattern *als* originates in [Spec, CP] and moves to [Spec, PP], which is headed by *of*.

⁶⁸ This is in line with Chomsky's (1977) search for cross-constructional symmetry in different kinds of *wh*-constructions.

- (90) a. Ik wete neet *of* ik kan. (Deventer Dutch; Kuijk 1993: 145)
 I know not if I can
 'I don't know whether 'll be able to (e.g. visit you).'
 b. Ik wete neet *as* ik kan.

In the spirit of my analysis so far, I propose that the complement clauses in (90a) and (90b) have the structures (91a) and (91b), respectively:

- (91) a. ...<sub>[PP AS [_{P'} of [<sub>CP AS [_{C' C} [ik kan]]]]]] (AS is a silent phrase)
 b. ..._{[PP AS [_{P'} OF [_{CP AS [_{C' C} [ik kan]]]]]] (OF is a silent head)}}</sub></sub>

In (91a), the silent substantive element AS has moved from [Spec, CP] to [Spec, *of*], while in (91b), it is the overt counterpart *as* which undergoes movement to [Spec, *of*].

If all these different *of*-constructions feature one and the same adpositional subordinator *of*, the question obviously arises as to what kind of functional category it is. Under a unified analysis, *of* clearly can't be specified as [+interrogative]; such a specification would be incompatible, for example, with the temporal interpretation of the *of*-clause in (87a).⁶⁹ Given *of*'s appearance in different types of clausal constructions, I tentatively propose that it is a dummy adposition that acts as a linking element connecting the embedded substantive CP to the matrix clause.⁷⁰ Possibly, the nominal element *als/ALS* plays a role in establishing this relationship in non-interrogative clauses: In its base position, that is [Spec, CP], it has a CP-internal function, namely the assignment of substantive contents to the substantive feature associated with C (see (68)); in its derived position, that is [Spec, *of*], the nominal element *als/ALS* occupies the edge position of the 'complementizer system', this way making the information it represents accessible to the matrix clause. In (86a), for example, the nominal expression *als*, which has the inner structure [_{NP} *n* (= -s) [TIME]], occupies the specifier position of the silent dummy adposition OF and this way makes the temporal information (say, 'time') accessible to the matrix clause. In *wh*-interrogative clauses like (74), which features the sequence *hoe of* 'how if'/'whether', it is the displaced *wh*-phrase *hoe* in [Spec, *of*] which is accessible to the matrix clause. Specifically, the verb *vroeg* 'asked' in (74), which

⁶⁹ Other examples that suggest that *of* is a dummy-like element are given in (i):

- (i) a. de vrouw *of* die ik gezien had (Amsterdam Dutch; Hoekstra 1994: 316)
 the woman if who I seen had
 'the woman who I saw'
 b. A: Ken je deze jongen? B: OF ik hem ken! (Standard Dutch)
 know you this boy if I him know
 A: 'Do you know this boy?' B: For sure I know him!

In (ia), a relative clause is introduced by *of*, which is followed by a (displaced) relative pronoun. In (ib), person B emphatically affirms the proposition 'You know this boy', which is questioned by person A's utterance.

⁷⁰ See Kayne (1997, 1999), Den Dikken (2006), and Baker and Collins (2006) for discussion of linking adpositional elements in syntax.

requires an interrogative clause as its complement, has access to the *wh*-phrase *hoe* in the specifier position of the dummy adposition *of* and this way identifies the clause as being interrogative.

6.8 Nominal markers and displacement within the complementizer system

In Section 6.5, it was proposed that *als* and *hoe_E* are nominal expressions that occupy [Spec, CP] and provide substantive contents to the clause (CP) by entering into a Spec-head agreement relationship with a substantive feature on C. In Sections 6.6 and 6.7 it was shown on the basis of both complement clauses and adjunct clauses that the (substantive) CP layer can be part of a larger adpositional structure. Furthermore, it was argued that the nominal expression *als/ALS* sometimes moves from [Spec, CP] to [Spec, *of*], where *of* was analysed as a dummy adposition. The major aim of this section is to provide some further empirical support for the above-mentioned ‘components’ of the clausal left periphery in Dutch.

Further evidence for the existence of nominal expressions that assign substantive contents to the clause comes from the ‘complex conjunctions’ in (92):⁷¹

- (92) a. [_{PP} naar [**mate** [dat hij ouder werd]]]
 to measure/extent that he older grew
 ‘as he got older’
 b. [_{PP} in [**geval** [dat hij slaapt]]]
 in case that he sleeps
 ‘in case he sleeps’
 d. [_{PP} ter [**wijl** [dat hij slaapt]]]
 by time that he sleeps
 ‘while he sleeps’
 e. [_{PP} voor [**aleer** [dat je dat doet]]]
 before all-earlier that you that do
 ‘before you do that’

Each of these complex conjunctions instantiates the following pattern: *P + nominal element + clause*. In this respect, they are similar to the complex conjunction *indien* (lit.: in+that, ‘if’), which was analysed in Section 6.7 as a complex phrasal object, and not as a complex word. Specifically, it was argued that *dien* is a nominal expression base-generated in [Spec, CP], while *in* is an adposition that takes CP as its complement; see (84). I propose that the same structural analysis holds

⁷¹ In Dutch orthography, the P+N sequence is written as a single word, as in *naarmate*, *ingeval*, *terwijl*, etc.

for the patterns in (92). This means that the complex ‘conjunction’ *naarmate dat* in (92a) has the structure in (93):

- (93) [PP naar [CP mate+_S [C' dat_S [hij ouder werd]]]]

As indicated, I assume that the nominale expression *mate* assigns substantive contents, namely ‘extent’/‘measure’, to the substantive feature on C. Notice that each of the nominal elements in (92) represents a basic substantive notion such as ‘thing’/‘case’ (*geval*) and ‘time’ (*wijl, aleer*). Evidence in support of the phrasal (rather than word-level) analysis of *naar+mate* comes from phonological stress: The sequence *naar+mate*, and also the other patterns in (92), display phrasal stress (*naarMATE*) instead of compound stress (*NAARmate).

Let us next turn to the proposal that there can be a local movement operation within the complementizer system, specifically displacement of the nominal expression in [Spec, CP] to the specifier-position of the adposition that selects CP; compare *als* in (86b). Consider for this the minimal pairs *omdat/daar* in (94a) and *vooraleer/(al)eer* in (94b):

- (94) a. [*Omdat / Daar* het regende] ging het feest niet door.
 for+that / there it rained went the party not through
 ‘Because it rained, the party was canceled.’
 b. Ik ga niet weg [*vooraleer / (al)eer* ik u
 I go not away before+all+earlier /all+earlier I you
 overtuigd heb].
 convinced have
 ‘I won’t go away before having convinced you.’

A striking contrast between the members of each pair concerns the appearance of the adposition: In *omdat* and *vooraleer*, the adposition (*om, voor*) is present, while in *daar* and *(al)eer* it is absent. In the spirit of Collins’s (2007) analysis of English locative *there* (see Section 6.4, ex. (24)), I interpret these adpositionless ‘conjunctions’ as PPs whose head is absent in order to avoid a violation of the Doubly filled-XP filter (see (25) for Collins’s formulation of this filter). Specifically, as illustrated in (95b) and (96b), I assume that *daar* and *(al)eer* start out as nominal expressions in [Spec, CP] and undergo movement to the specifier position of the (silent) adposition that takes CP as its complement.⁷²

⁷² In present-day Dutch, concessive clauses can be introduced by the subordinator *ofschoon* ‘although’. Interestingly, archaic/more formal varieties of Dutch permit the subordinator *schoon* ‘although’, which lacks the element of ‘if’. These data seem to suggest that *ofschoon* ‘although’ has a composite structure, possibly as in (ia). Furthermore, if we follow the line of analysis taken in (95)–(96), the ‘bare’ pattern *schoon* possibly has the structure in (ib), where *schoon* has moved to the specifier position of the silent dummy adposition *OF*.

- (i) a. [PP [P'of [CP *schoon* [C'C [TP zijn vader het hem verbod]]]]]....
 if *schoon* his father it him forbade
 ‘even though his father had forbidden him,’

- (95) a. [PP [P' om [CP [C' dat [TP het regende]]]]]....
 b. [PP ~~daar~~ [P' P [CP ~~daar~~ [C' C [TP het regende]]]]]....
- (96) a. [PP [P' voor [CP aleer [C' C [TP ik u overtuigd heb]]]]]....
 b. [PP ~~aleer~~ [P' P [CP ~~aleer~~ [C' C [TP ik u overtuigd heb]]]]]....

I assume that this local movement operation within the Dutch ‘complementizer system’ is also present in adjunct clauses that are introduced by temporal elements such as *toen* ‘then’ and *wanneer* ‘when’, as in (97). Notice by the way that *wanneer*, just like *hoe_E*, is a *wh*-element with a non-interrogative meaning.

- (97) a. [*Toen* het die dag regende] werd het feest afgelast.
 then it that day rained was the party canceled
 ‘The party was canceled when it rained that day.’
- b. [*Wanneer* het *vanavond* gaat regenen] hoor je de
 when it tonight goes rain hear you the
 vogels fluiten.
 birds whistle
 ‘When its starts raining this evening, you’ll hear the birds sing.’

In line with Postal’s (1966) proposal that English ‘adverbs’ such as *when*, *then*, *there*, etc., are nominal expressions (see Section 6.4) and following Collins’s (2007) proposal that these elements occupy the specifier position of a silent P, I propose that the adjunct clauses in (97a) and (97b) have the underlying derivations in (98a) and (98b), respectively:

- (98) a. [PP *Toen* [P' P [CP ~~toen~~_{+S} [C' C_S [TP het die dag regende]]]]]....
 b. [PP *Wanneer* [P' P [CP ~~wanneer~~_{+S} [C' C_S [TP het vanavond gaat regenen]]]]]....⁷³

As indicated, the temporal noun phrase (*toen/wanneer*) assigns content (‘time’) to the substantive feature associated with C. It ends up in [Spec, PP] as a result of local movement within the ‘complementizer system’. P’s silence is caused by the Doubly Filled-XP Filter.

Notice that, in the adjunct clauses in (97a, b) and the corresponding structural representations in (98a, b), the temporal element at the beginning of the clause (i.e. *toen/wanneer*) co-occurs with a clause-internal temporal expression

- b. [PP *schoon* [P' OF [CP ~~schoon~~ [C' C [TP zijn vader het hem verbod]]]]]....

I will leave an in-depth investigation of the complementizer system of concessive clauses for future research.

⁷³ Certain dialects of Dutch have the *wh*-form *hoe_E* ‘when’ instead of *wanneer* (see: <https://www.mijnwoordenboek.nl/dialect-vertaler.php?woord=wanneer>). The existence of forms such as *wanneer* and *hoe_E* hints at a composite structure of these temporal ‘adverbs’; see Section 6.4.

(*die dag/vanavond*).⁷⁴ This co-occurrence phenomenon is reminiscent of the co-occurrence phenomenon in eventive *hoe*-complements, where clause-initial *hoe_E* co-occurs with a clause-internal manner adverbial expression, as in (7), repeated here as (99):

- (99) Ik vertelde aan Jan [*hoe_E* de studenten het probleem
 I told to Jan how the students the problem
snel en adequaat oplossen].
 fast and adequately solved
 ‘Jan told about the students’ quickly and adequately solving the problem.’

The analyses in (95), (96) and (98) trigger the question as to whether *hoe_E* in (99) also undergoes local displacement within the complementizer system, that is, from [Spec, CP] to [Spec, PP]. Recall from Section 6.4 that *hoe_Q* was analysed as a nominal expression (DP) that undergoes movement from the complement position of P to [Spec, PP]; see (33), which is repeated here as (100):

- (100) [_{PP} [_{DP} *hoe* + WAY] [_{P'} P [_{-realis}] [_{DP} *hoe* + WAY]]]

If *hoe_Q* and *hoe_E* are one and the same syntactic object, one would expect them to display the same syntactic behaviour. This conceptual argument based on symmetry would lead to the following analysis of (99), which builds on the analysis given in (71).

- (101) [_{PP} [_{DP} *hoe* [_{NP} *n* [WAY]]]_[+S]] [_{P'} P [_{CP} [_{DP} *hoe* [_{NP} *n* [WAY]]]_[+S]] [_{C'} C_[S] [_{TP}]]]]].

Potential empirical support for the proposal that *hoe_E* moves to [Spec, PP] comes from islandhood. Consider for this the following examples:

- (102) a. **Welk probleem vroeg Jan ook alweer [hoe_Q zij*
 which problem asked Jan PRT again how they
wp hoe hadden opgelost]?
 had solved
 ‘Jan asked how they solved which problem?’

⁷⁴ Notice that conjunctive *toen* can cooccur with adverbial *toen*, as in (i). Such examples strongly suggest that conjunctive *toen* is base-generated in the left periphery of the clause, and does not originate in a clause-internal position.

- (i) [_{Toen}_{conjunctive} het _{toen}_{adverbial} begon te regenen] kocht hij gauw een
 when it then started to rain bought he quickly an
 paraplu.
 umbrella
 ‘When it started to rain at that moment, he quickly bought an umbrella.’

- b. **Welk probleem* vertelde Jan ook alweer [*hoe_E* zij
 which problem told Jan PRT again how they
 **wp* snel hadden opgelost]?
 quickly had solved
 ‘Jan told about their quickly solving which problem?’
- c. *Welk probleem* vertelde Jan ook alweer [*wp dat* zij
 which problem told Jan PRT again that they
 **wp* snel hadden opgelost]?
 quickly had solved
 ‘Which problem did Jan say that they solved quickly?’

The *hoe_Q*-complement in (102a) constitutes an island for extraction. Displacement of the manner expression *hoe_Q* to the beginning of the embedded clause, which in my analysis is the specifier position of a dummy adposition, creates a *wh*-island. Extraction of the *wh*-phrase *welk probleem* from within the *wh*-clause yields a *wh*-island violation. As shown in (102b), we find the same *wh*-island effect when the embedded clause is a *hoe_E*-complement. This symmetry in island behaviour might be interpreted as evidence for a local movement step that takes *hoe_E* from [Spec, CP] to the specifier position of a dummy adposition. Finally, as shown by (102c), extraction from a declarative *dat*-clause is permitted. I assume that the specifier position of the dummy P functions as an escape hatch for extraction.

The question, obviously, arises as to why *hoe_E* must move from [Spec, CP] to the specifier position of the dummy adposition. The same question can be raised for the displaced elements *daar* (95b), *aleer* (96b), *toen* (97a), and *wanneer* (97b). Possibly, their displacement relates to the light (i.e. semantically weakened) status of the silent noun which is part of these nominal expressions, specifically: [*daar*+REASON] in (95b), [*aleer*+TIME] in (96b), [*toen*+TIME] in (98a), [*wanneer*+TIME] in (98b), and [*hoe*+WAY] in (101); see also Section 6.4. Let me add to this that, also at the level of formal shape, there is a certain parallelism between the ‘subordinating’ nominal expressions that I take to occupy [Spec, PP], on the one hand, and the pronominal elements—often called R-pronouns; Van Riemsdijk (1978)—that can appear in the specifier position of ‘regular’ PPs (see footnote 17). For example, *daar* in (95b) is identical to *daar* in the adpositional phrase *daarop* (there-on, ‘on it/that’); *aleer* in (96b) displays the element *al*, just like *overal* (‘everywhere’) in the adpositional phrase *overal op* (lit.: everywhere on; ‘on everything’). The element *al* is also present in the Dutch subordinator *alvorens* ‘before’, which typically introduces a temporal adjunct clause, as in *Veeg je voeten alvorens je binnenkomt!* (wipe your feet before you enter, ‘Wipe your feet when you enter the room!’). I take *alvorens* to be a nominal expression featuring so-called adverbial -s, which I analysed in Section 6.4 as a realization of the categorial node *n* (see (41)). Notice now that *alvorens*, which possibly has the decomposed structure *al+voor+en+s* (all+before+en+s), formally resembles the nominal expression

ergens ‘somewhere’, which also features the sequence *en+s* at the end. As shown by the adpositional pattern *ergens achter* (somewhere behind, ‘behind something’), *ergens* can occupy the specifier position of PP (Van Riemsdijk 1978). Arguably, this also holds for *alvorens*, which, in line with the analysis of *aleer* in (96b), I take to move from [Spec, CP] to [Spec, PP].

It goes without saying that the issues discussed in this section deserve further investigation. What is important in my opinion, is that the grammar of *hoe_E* displays similarities with other types of embedded clauses.

6.9 Conclusion

This chapter started with the statement that homonymy is a characteristic phenomenon of human language. From a surface perspective, it is pervasively present. The question arises, however, as to whether these presumptive instances of homonymy are real cases or only apparent ones. In this chapter, I have tried to show that the distinction between interrogative *hoe* (*hoe_Q*) and eventive *hoe* (*hoe_E*) is only apparent. Upon closer analysis, they represent one and the same linguistic expression. Importantly, this linguistic expression was not a simplex syntactic object consisting of one lexical atom, but rather a complex syntactic object with an inner structure. Specifically, it was claimed that this syntactic object is a nominal projection, as in (103). The different grammatical roles of *hoe* were accounted for in terms of the structural configurations in which the nominal expression *hoe* is located. It was proposed that the grammar of *hoe_Q* comprises the following ingredients: Firstly, *hoe_Q* is a nominal expression (DP) that starts out as a complement of P, where P heads an adjunct-PP, which carries the meaning ‘in wh+way’. Secondly, *hoe_Q* moves PP-internally to [Spec, PP], triggering the silence of P (a doubly filled-XP effect); see (104a), where *IN* is the silent adposition. Thirdly, the entire PP moves to the specifier position of a ‘conjunctive’ dummy adposition (P), which can surface as *of* or remain silent (*OF*); see (104b). This dummy P selects a CP-complement whose specifier position is occupied by a silent nominal expression (*ALS*) which specifies the substantive contents (‘thing’) of the CP-complement of P; see (104b). As for the grammar of *hoe_E*, it was proposed that it starts out as a nominal expression in [Spec, CP], as in (105a). In this base position, *hoe_E* fulfils the same grammatical role as silent *ALS* (and its overt counterpart *als*), that is, it specifies the substantive contents (*in casu* ‘manner’/‘way’) of the clause. It was further tentatively proposed that *hoe_E* undergoes movement within the complementizer system. Specifically, it moves from [Spec, CP] to the specifier position of the (linking) adpositional element that introduces the clause.

(103) [_{DP} hoe [_{DemP} ZO [_{nP} n^o [WAY]]]]

- (104) a. [PP [DP *hoe*_{DET} + WAY] [P' IN [DP *hoe* + WAY]]]
 b. ... [PP *hoe*_{PP} [P' (of) [CP ALS [C' dat [TP ...*hoe*_{PP}...]]]]].
- (105) a. ... [CP [DP *hoe* [NP n [WAY]]]_[+S] [C' C_[S] [TP.]]].
 b. ... [PP [*hoe*_{DP} [P' P [CP *hoe* [C' C [TP.]]]]]].

According to my analysis, *hoe*_Q and *hoe*_E, which I take to be one and the same nominal expression, share a derivational property: they each end up in the specifier position of an adpositional element. Thus, although the base positions of the nominal expressions *hoe*_Q and *hoe*_E are configurationally asymmetric, their derived positions are configurationally symmetric. At a more general level, I hope to have shown in this chapter that for a better understanding of the syntactic composition of (non)interrogative *hoe*-clauses, it is important to apply the method of decomposition, both at the level of *hoe* and at the level of *hoe*-clauses.

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