

Nominalization of clauses: the clausal prolepsis strategy

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Abstract

The paper investigates the syntax of clausal prolepsis in Dutch. It focuses in particular on object clausal prolepsis, that is, the phenomenon where an object pronoun is linked to a CP that is situated at the right edge of the clause. The paper proposes a novel analysis according to which Dutch clausal prolepsis underlyingly realizes the syntactic structure of a nominalized clause (cf. Bochnak and Hanink to appear). This analysis captures properties that clausal prolepsis has in common with nominalized clauses, for example the fact that both constructions give rise to a familiar interpretation of the embedded CP. Furthermore, a number of previously unnoticed properties of clausal prolepsis are accounted for such as the fact that the proleptic pronoun cannot be realized by a demonstrative, that the prolepsed clause is interpreted as the internal argument of the matrix verb, or that clausal prolepsis is not allowed with nominalizations. From a typological point of view, this analysis shows that nominalization of a clause is more pervasive cross-linguistically than is typically assumed.

1 Introduction

This paper investigates constructions like the one featured in (1) from Dutch where an optional pronoun, *het* ‘it’, that occupies the object position of the verb is linked to a CP.¹

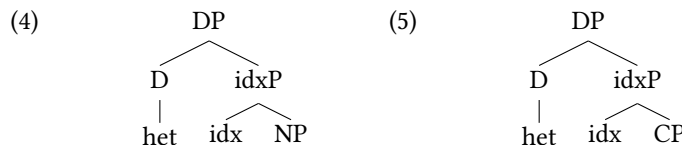
- (1) Ik hoop (*het*_i) [dat je wint]_i.
I hope it that you win
‘I hope that you win.’

Looking at this construction, hereafter clausal prolepsis, I take up the question of how exactly the pronoun, *het* above, and the doubled CP relate to one another in the underlying syntactic structure. Building on the distribution and the internal structure of the DP formed by *het*, I propose a new analysis according to which *het* and the CP enter the derivation together in a DP constituent. This analysis is (partly) based on a novel empirical generalization, formulated in (2), which crucially suggests that clausal prolepsis has the exact same distribution as the DP realized by *het* in (3b). In this case, *het* occupies the verb’s object position, and is anaphorically related to the contextually introduced proposition in (3a), hereafter propositional *het*.

- (2) **Prop-Prolepsis Generalization:** Clausal prolepsis can occur only in those contexts in which propositional *het* can occur.
- (3) a. Hij weet [dat jij er zal zijn]_i.
he know that you there will be
‘He knows that you will be there.’
b. Zij weet *het*_i ook.
she knows it too
‘She knows it too.’

¹ The data presented in this paper have been collected in informant sessions with three native speakers of Belgian Dutch. I make explicit in which cases speaker variation was detected.

Following recent literature on DPs (cf. Hanink 2021, Schwarz 2019 i.a.), I argue that propositional *het* ‘it’ in (3b) comprises a pronominal component that is syntactically represented as an index, *idx*, and is merged in the extended nominal projection. The *idx* is present in anaphoric definite DPs, (4), that is, DPs that are anaphorically related to an antecedent. In clausal prolepsis, the embedded clause is merged in the complement position of *idx*, and subsequently undergoes extraposition.



The analysis sketched in (5) implies that clausal prolepsis is underlyingly an instance of CP-nominalization. As such it parallels cases of nominalized clauses in languages like Washo, for which the same structure has been proposed (cf. Bochnak and Hanink to appear). Under this view, clausal prolepsis is the result of a derivation in which an embedded clause undergoes nominalization by merging DP-internally and subsequently undergoes movement into a higher syntactic position. This analysis will be shown to account for the novel generalization in (2) and the overall distribution of *het*. A number of previously unnoticed properties of the prolepsed CP will also be shown to follow straightforwardly.

The paper is organized as follows. [Section 2] provides a description of the various usages of *het* as a pronoun, [Section 2.1], and as a definite determiner, [Section 2.2]. [Section 3] provides a description of clausal prolepsis suggesting that *het* of clausal prolepsis is propositional *het*, [Section 3.1] and [Section 3.2], that the prolepsed CP is interpreted in the argument position, [Section 3.3], and that the prolepsed clause receives a familiar interpretation, [Section 3.4]. [Section 4] shows that all these properties are accounted for by a novel analysis according to which the prolepsed CP is merged DP-internally, like nominalized clauses of Washo and Korean, and undergoes movement into a higher position. [Section 6] presents evidence from the proform choice in clausal prolepsis, [Section 6.1], and VP fronting, [Section 6.2], supporting the idea that the CP undergoes movement out of the DP. [Section 7] presents additional advantages of the proposed analysis, namely, that it can account for (a) the distribution of clausal prolepsis in nominalizations, [Section 7.1], and (b) the selectional dependencies established in clausal prolepsis, [Section 7.2]. [Section 8] concludes.

2 Data description: *het*

In this section I focus on the different syntactic contexts in which *het* is used as a pronoun or a definite determiner. I show that in each case we must distinguish two meanings. When used as a pronoun, *het* can be interpreted as individual denoting or propositional, depending on whether it has as antecedent an individual-denoting expression or a proposition. Similarly, when used as a definite determiner, it can have two distinct meanings; it either expresses uniqueness, or it is anaphoric on a contextually introduced antecedent.

2.1 *Het* as a pronoun

There are two meanings that can be distinguished when *het* is used as a pronoun, propositional and individual-denoting. The propositional interpretation of *het* can be found after verbs such as *hopen* ‘hope’ in (6) that select for propositional arguments, e.g. an embedded clause as in (6b). This verb cannot take a plain DP such as *het antwoord* ‘the answer’ as an argument, as shown in (6a). Interestingly, *het* can serve as an argument of this verb, but, as illustrated in (6c), it can only refer to a proposition from the discourse such as for instance the embedded clause in (6b).²

- (6) a. *Hij **hoopt** [het antwoord]_m.
 he hopes the answer
 Intended: ‘He hopes for the answer.’

² See also Elliott (2020) for discussion on DPs that can have a proposition as an antecedent. Elliott refers to these DPs as PropDPs.

- b. Hij **hoopt** [dat jij er bent]_j.
 he hopes that you there are
 ‘He hopes that you are there.’
- c. Hij **hoopt** het_{*m,✓j}.
 he hopes it
 ‘He hopes so.’

On the other hand, there are verbs such as *kennen* ‘know’ which differ from *hopen* in that they can take a plain DP as an argument, (7a), but reject a propositional one, (7b). *Het* can be used as an argument of this verb as well but, as illustrated in (7c), it can only refer to an individual denoting expression from the discourse, such as *het antwoord* ‘the answer’ in (7a).

- (7) a. Hij **kent** [het antwoord]_m.
 he knows the answer
 ‘He knows the answer.’
- b. *Hij **kent** [dat jij er bent]_j.
 he knows that you there are
 Intended: ‘He knows that you are there.’
- c. Hij **kent** het_{✓m,*j}.
 he knows it
 ‘He knows it.’

I propose that the distribution of propositional and individual-denoting *het* is determined by the selectional properties of a predicate. Propositional *het* can serve as an argument of predicates that c-select a DP and s-select a proposition. On the other hand, individual-denoting *het* can serve as an argument of predicates that c-select a DP and s-select an individual denoting expression.³

2.2 *Het* as a definite determiner

Besides its usage as a pronoun, *het* is also a definite determiner, in which case it can combine with an NP to form a DP. Two interpretations can be distinguished in that case, a non-anaphoric unique interpretation and an anaphoric one. These interpretations are illustrated in the two sentences below, which are based on similar examples taken from Schwarz (2009, 40):

- (8) a. In dit dorp ligt het kerkhof naast een tankstation.
 in this village lies the cemetery next to a gas station
 ‘In this village the cemetery lies next to a gas station.’
- b. Hans heeft een zonnetje_i en een maan getekend. Het zonnetje_i was blauw.
 Hans has a small sun and a moon drawn the small sun was blue
 ‘Hans has drawn a small sun and a moon. The small sun was blue.’

In (8a), *het kerkhof* ‘the cemetery’ is a non-anaphoric unique definite; it does not have an antecedent, and so world knowledge dictates that in this context a given town has a unique cemetery. On the other hand, (8b) features a case of inter-sentential anaphora where the DP *het zonnetje* is anaphoric on an antecedent, that is, *een zonje* ‘a small sun’, introduced in the first clause.

To sum up, Section 2 showed that distinct meanings that *het* can express when it is used as a pronoun, that is, individual and proposition denoting, and as a definite determiner, that is, unique or anaphoric. It will be shown in the next section that in clausal prolepsis, *het* realizes propositional *het*. Furthermore, even though *het* has different usages, the proposed analysis in Section 4 will show that they can all be subsumed under a single lexical entry for D, thus, avoiding accidental homophony.

³ The distribution of propositional *het* does not correlate with verbs that have been treated as familiar in Cattell (1978), that is, verbs that presuppose the existence of their clausal complement as a proposition in the Common Ground. For instance, the verb *hopen* ‘hope’ can take propositional *het* as an argument. Yet, its clausal complement do not have to be interpreted as familiar. This suggests that the distribution of *het* cannot be accounted for by appealing to a semantic property like familiarity.

3 Data description: clausal prolepsis

In this section, I present new data revealing properties of *het* of clausal prolepsis as well as properties of the prolepsed clause. I show (a) that clausal prolepsis is found in all and only those contexts that allow for propositional *het* [Section 3.1], and (b) that just like propositional *het*, *het* of clausal prolepsis can bind a parasitic gap [Section 3.2]. A natural conclusion that follows from the fact that *het* of clausal prolepsis and propositional *het* have identical distributional (cf. a) and interpretive (cf. b) properties is that *het* of clausal prolepsis is actually propositional *het*. Turning to the prolepsed clause, I present new data showing that it is interpreted in the argument position, just like a plain argument clause [Section 3.3]. Additionally, the prolepsed clause is obligatorily interpreted as familiar [Section 3.4]. These two latter properties together with the fact that clausal prolepsis is formed with propositional *het* will be shown to be amenable to an analysis of clausal prolepsis according to which the prolepsed clause enters the derivation in the argument position of the verb as part of a DP headed by propositional *het*.

3.1 The prop-prolepsis generalization

I present the following novel generalization which in brief states that the syntactic contexts in which clausal prolepsis is found are identical to the ones where propositional *het* can occur.

- (9) **Prop-Prolepsis Generalization:** Clausal prolepsis can occur in all and only those contexts that allow for propositional *het*.

This generalization is revealed by the behavior of three different types of predicates: two represented by *hopen* ‘hope’, repeated below from (6), *blij zijn* ‘be happy’, and an additional one, namely, *aandoen* ‘do to’. (10a) shows that *hopen* can take *het* as its argument. *Het* is propositional in this case, as shown by the fact that it can have a proposition as antecedent (cf. 6b). *Hopen* can also take an embedded clause as an argument, (10b), and it can also license clausal prolepsis, as illustrated in (10c). The behavior of *hopen* is consistent with the Prop-Prolepsis Generalization because clausal prolepsis is licensed in a syntactic context where propositional *het* is also allowed.

- (10) a. Ik hoop *het*.
I hope it
‘I hope so.’
b. Ik hoop dat je wint.
I hope that you win
‘I hope that you win.’
c. Ik hoop *het* dat je wint.
I hope it that you win
‘I hope that you win.’

Blij zijn ‘be happy’ differs from *hopen* in that it cannot take propositional *het* as an argument, (11a). It behaves exactly like *hopen* in that it accepts a clausal argument, (11b). Nonetheless, as shown in (11c), this is insufficient to license clausal prolepsis. The behavior of *blij zijn* supports the Prop-Prolepsis Generalization because, just as predicted by this generalization, clausal prolepsis is not allowed in a syntactic context where *het* is also blocked.

- (11) a. *Ik ben *het* blij.
I am it happy
Intended: ‘I am happy about it.’
b. Ik ben blij dat Jan slaapt.
I am happy that John sleeps
‘I am happy that John sleeps.’
c. *Ik ben *het* blij dat Jan slaapt.
I am it happy that John sleeps
Intended: ‘I am happy that John sleeps.’

The third type of predicate is *aandoen* ‘do to’. This verb behaves like *hopen*, and, unlike *blij zijn*, in that it can take propositional *het* as an argument. In (12a), *het* is propositional, as shown by the fact that it can have as antecedent the proposition that is introduced in the previous clause. On the other hand, *aandoen* behaves like *blij zijn*, and, unlike *hopen*, in that it cannot take a bare clausal argument, (12b). Clausal prolepsis is permitted with this verb, as shown in (12c). Given the Prop-prolepsis generalization, the availability of clausal prolepsis is expected in this syntactic context because it correlates with the availability of propositional *het*.⁴

- (12) a. Marie zei [dat ze John pijn zal doen]_i; maar ik kan het_i hem niet aandoen dus zal ik haar tegenhouden.
 Marie said that she John hurt will do but I can it him not do so will I her
 stop
 ‘Marie said that she will hurt John, but I cannot do it to him so I will stop her.’
- b. ?* Ik kan hem niet aandoen dat ik hem nu in de steek laat.
 I can him not do that I him now in the stab let
 Intended ‘I cannot do that to him, that is, to abandon him.’
- c. Ik kan het hem niet aandoen dat ik hem nu in de steek laat.
 I can it him not do that I him now in the stab let
 ‘I cannot do that to him, that is, to abandon him.’

The (un)availability of clausal prolepsis and how this correlates with the distribution of propositional *het* after the three types of predicates in (10)–(12) is summarized in the table below:

	PropDP	<i>dat</i> -clause	Prolepsis
Type I: (<i>hopen</i>)	✓	✓	✓
Type II: (<i>blij zijn</i>)	✗	✓	✗
Type III: (<i>aandoen</i>)	✓	✗	✓

Table 1: The distribution of propositional *het* and clausal prolepsis.

Two conclusions can be drawn from the table above. First, as suggested by the Prop-Prolepsis Generalization, the availability of clausal prolepsis correlates with those syntactic contexts in which propositional *het* is possible (cf. Type I and Type III verbs). Additionally, as noted, the licensing of a clausal argument is not sufficient to license clausal prolepsis (cf. Type II verbs).⁵ With this in mind, let us now turn our attention to an additional property that propositional *het* and *het* of clausal prolepsis have in common, namely, that they can bind a parasitic gap.

⁴ In an informal survey I conducted with seven Dutch speakers, three of them found (12b) to be a well-formed sentence. On the other hand, all speakers agree that the judgments illustrated above for *aandoen* can be shown more clearly with adjectival predicates like *beu zijn* ‘be tired’. This predicate can take propositional *het* as an argument, (ia). It does not select for an embedded clause as an argument, (ib). Yet, it can license clausal prolepsis, as can be shown in (ic).

- (i) a. Marie zei [dat John zal doorgaan met ons iedere dag te bezoeken]_i; maar ik ben het_i beu.
 Marie said that John will continue with us every day to visit but I am it tired
 ‘Marie said that John will continue visiting us every day, but I am tired of it.’
- b. * Ik ben beu dat Jan slaapt.
 I am tired that John sleeps
 Intended: ‘I am tired of the fact that John sleeps.’
- c. Ik ben het beu dat Jan slaapt.
 I am it tired that John sleeps
 ‘I am tired of the fact that that John sleeps.’

The fact that *beu zijn* can take propositional *het* as an argument also suggests that (11a) is not ruled out due to a more general restriction according to which adjectival predicates cannot take propositional *het* as an argument.

⁵ This behavior of Type II verbs has immediate consequences for the analysis of clausal prolepsis in Stroik (1996). Specifically, looking at English, Stroik (1996) presents an analysis of clausal prolepsis according to which the proleptic pronoun, treated as an expletive, enters

3.2 Parasitic gaps

I present data in what follows showing that propositional *het* and *het* of clausal prolepsis share one more property, namely, they can be the antecedent of a parasitic gap. In order to illustrate this, I consider the verb *hopen* which, as shown before, can only take an embedded clause as an argument or propositional *het*. When merged as an argument of *hopen*, propositional *het* undergoes scrambling, just like all unstressed pronouns in Dutch. This is shown in (13a) where *het* precedes the adjunct clause that comprises the parasitic gap. The same example further shows that propositional *het* can bind a parasitic gap from its scrambled position.⁶ In this respect, propositional *het* behaves exactly like *het* of clausal prolepsis, which also undergoes scrambling, and, as shown in Bennis (1986), may also bind a parasitic gap, (13b) (= modified from Bennis 1986, (19a)).

- (13) a. Jan zei dat hij het_i [na nogmaals e overwogen te hebben] toch t_i hoopte.
 John said that he it after again considered to have yet hoped
 ‘Jan said that he hoped it (after considering again).’
- b. Jan zei dat hij *(het_i) [na nogmaals e overwogen te hebben] toch t_i hoopte dat deze beslissing
 John said that he it after again considered to have yet hoped that this decision
 genomen was.
 taken was
 ‘Jan said that he hoped it, after considering again, that this decision had been made.’

The fact that *het* of clausal prolepsis can bind a parasitic gap suggests that just like propositional *het*, it is a contentful pronoun, not a expletive one (*pace* Postal and Pullum 1988). This finding together with the fact that propositional *het* and *het* of clausal prolepsis occur in the same exact contexts (cf. the Prop-Prolepsis generalization) suggests that clausal prolepsis is actually formed with propositional *het*. With this in mind, let us now turn to properties of the prolepsed clause. Specifically, I show that it is interpreted in the argument position of the verb, and that it is interpreted as familiar.

3.3 The prolepsed clause and its binding properties

I show by applying two diagnostics, specifically, pronominal binding and Condition C, that the prolepsed CP is interpreted in a low position, just like a plain argument clause. Let us first consider pronominal binding.

- (14) a. Ik heb niet op een beleefde manier ook maar één student_i verteld [dat hij_j positief getest had].
 I have not on a polite manner any student told that he positive tested had
 ‘I have not told in a polite manner (to) any student that he had tested positive.’
- b. Ik heb het niet op een beleefde manier ook maar één student_i verteld [dat hij_j positief getest had].
 I have it not on a polite manner any student told that he positive tested had
 ‘I have not told in a polite manner (to) any student that he had tested positive.’

(14a) shows that a pronoun, such as *hij* ‘he’ above, hosted in the embedded clause can be bound by the indirect object QP, *ook maar één student* ‘any student’, in the matrix clause. Two notes are in order in regard to the quantifier; first, it occupies a low syntactic position within the vP, as shown by the fact that it follows a manner adverbial PP,

the derivation in Spec,CP of the embedded clause, and undergoes movement into the matrix clause for formal reasons, e.g. case (cf. also Gluckman 2021). Under this analysis, merger of the proleptic pronoun in Spec,CP is freely available. Given this, Stroik’s analysis wrongly predicts that predicates that can embed a CP should also license clausal prolepsis. This prediction is not borne out because of predicates like *blij zijn* ‘be happy’ which, as was shown in the table above, can take a CP-complement, yet, they fail to license clausal prolepsis.

⁶ Note also that individual denoting *het* which arguably is a referential pronoun may as well bind a parasitic gap, just like propositional *het*. This is illustrated in the following example where *het*, being an argument of *kennen* ‘know’, is individual denoting (cf. 7), and, as shown, it can bind the gap from its scrambled position:

- (ii) Jan zei dat hij het_i [na e lang gestudeerd te hebben] wel t_i kende.
 Jan said that he it after long studied to have well knew
 ‘John said that he knew it after having studied for long.’

that is, *op een beleefde manier* ‘in a polite manner’, which is standardly assumed to modify the vP. Additionally, this quantifier in this case scopes lower than negation. The syntactic position the indirect object QP occupies in combination with its scope properties suggest that it binds the pronoun in the embedded clause from a low position, possibly from the argument position where the QP is introduced. (14b) shows that *ook maar één student* can also bind *hij* inside a prolepsed clause, that is, a clause doubled by *het*. This suggests that a prolepsed clause and a plain embedded clause occupy the same syntactic position at some point in the derivation from where binding by the indirect object QP becomes possible. This is also suggested by Condition C. Specifically, (15a) shows that it rules out coreference between a proper name, *Jan*, contained in an embedded clause and a pronoun in the matrix clause, *hem* ‘him’. Coreference is also ruled out due to Condition C between a proper name in an embedded clause and a pronoun in the matrix clause in clausal prolepsis, (15b).

- (15) a. Ik heb hem_{j/*i} verteld/ toevertrouwd [dat Jan_i ziek is].
 I have him told confided that Jan sick is
 ‘I have told/confided him that Jan is sick.’
- b. Ik heb het hem_{j/*i} verteld/ toevertrouwd [dat Jan_i ziek is].
 I have het him told/ confided that Jan sick is
 ‘I have told/confided it him that Jan is sick.’

Under standard assumptions, the facts from pronominal binding and Condition C suggest that at some point in the derivation, the prolepsed clause must be in the c-command domain of the low position where the indirect object enters the derivation. What is this position? It is standardly assumed in the current literature that indirect objects enter the derivation in the specifier of an applicative head, which is introduced higher than the VP but lower than the External Merge position of the external argument, that is, vP (cf. Pylkkänen 2008). Given now that at some point in the derivation, the prolepsed clause must be in the c-command domain of this applicative head and its specifier, where the indirect object is introduced, it makes sense to assume that just like plain embedded clauses, the prolepsed clause enters the derivation in the VP, that is, in the V’s internal argument position.

3.4 The prolepsed clause and familiarity

I present new data here showing that a prolepsed embedded clause differs from plain embedded clauses in that the first is obligatorily interpreted as familiar whereas this is optionally the case with plain embedded clauses. In order to illustrate this interpretive difference between the two types of clauses, I use different contexts originally proposed in Bogal-Allbritten and Moulton (2018). I begin with different contexts in (16) and (17) showing that plain embedded clauses and prolepsed clauses can have a familiar interpretation. Specifically, in (16), the context contains an assertion that carries content comparable/compatible, or string identical, to the proposition expressed by B in (16b) and (16c): A asserts *I finished my homework*. In such a discourse, (16b) and (16c) show that a plain embedded clause and a prolepsed one are felicitous in utterances of B.

- (16) a. A: I finished my homework. Can I go outside and play?
 B: No.
 A: Don’t you believe me?
- b. B: Ja, ik geloof [dat je je huiswerk af hebt], maar het is etenstijd.
 yes I believe that you your homework PRT have, but it is dinner.time
 ‘Yes, I believe that you have done your homework, but it is dinner time.’
- c. B: Ja, ik geloof het [dat je je huiswerk af hebt], maar het is etenstijd.
 yes I believe it that you your homework PRT have, but it is dinner.time
 ‘Yes, I believe it that you have done your homework, but it is dinner time.’

Similarly, (17) shows a plain embedded clause or a prolepsed one can be licensed in a context where the proposition they express is not repeated from A’s utterance, but it is entailed by it.

- (17) a. *Context*: B has a rule that A must eat vegetables before having cake.
 A: I ate peas. Can I have cake now?
 B: No. A: Why? Don’t you believe me?

- b. B: Ja, ik geloof [dat je je groenten hebt gegeten], maar de cake is nog niet klaar.
 yes I believe that you your vegetables have eaten but the cake is yet not ready
 ‘I believe that you ate your vegetables, but the cake is not ready.’
- c. B: Ja, ik geloof het [dat je je groenten hebt gegeten], maar de cake is nog niet klaar.
 yes I believe it that you your vegetables have eaten but the cake is yet not ready
 ‘I believe it that you ate your vegetables, but the cake is not ready.’

On the other hand, when an embedded clause expresses new information, that is, the embedded clause is uttered in a discourse that does not contain an assertion with content comparable to the proposition expressed by B, only a plain embedded clause is felicitous, (18a), whereas a prolepsed clause is not, (18b).

- (18) Can Johnny go outside and play?
- a. Ja, ik geloof [dat hij zijn huiswerk af heeft].
 yes I believe that he his homework PRT has
 ‘Yes, I believe that he has done his homework.’
- b. #Ja, ik geloof het [dat hij zijn huiswerk af heeft].
 yes I believe it that he his homework PRT has
 ‘Yes, I believe it that he has done his homework.’

In order to capture the fact that the content of a prolepsed clause must have been introduced in the discourse, I propose the familiarity requirement below to which prolepsed clauses are subject to.⁷

- (19) The familiarity requirement of *het*_i + CP_i:
 Utterance of *het*_i ... CP_i is felicitous just in case the CP – or some utterance associated with propositional content that is consistent/compatible with it – has been previously introduced in the discourse.

4 Analysis

I provide an analysis reconciles the properties of *het* and the properties of clausal prolepsis that were discussed in the previous sections. I begin by illustrating that the different usages of *het* as a determiner and as a pronoun can be subsumed under a single D-lexical entry for *het* (Section 4.1). Based on this, I proceed with an analysis which can capture the Prop-Prolepsis generalization as well as for the fact that a prolepsed clause can be interpreted in the argument position of the verb (Section 4.2). Section 4.3 shows that this account is also in a position to account for the familiar interpretation of prolepsed clauses.

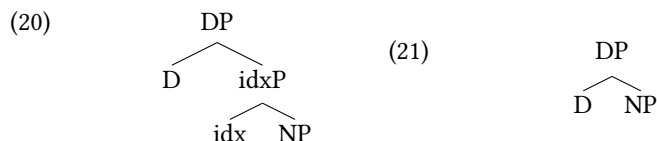
4.1 A single D entry for *het*

The analysis of the different usages of *het* I am going to discuss in this section is based on Hanink’s (2021) recent work on definite descriptions. In order to see the relevance of Hanink’s work, I begin with a brief summary focusing on the assumptions I am adopting from it. I proceed with the analysis of the different usages of *het* directly after.

To start with, following Hanink (2021), I assume that the anaphoric interpretation of definite descriptions arises due to an index, *idx*, that is syntactically projected. This approach builds on previous proposals by Schwarz (2009, 2019) which take anaphoric definites to realize a distinct syntactic structure from non-anaphoric definites. Specifically, in Hanink (2021), anaphoric definites realize the structure in (20), where *idx* heads a functional projection,

⁷ Clausal prolepsis behaves differently with a small class of predicates, namely, factive ones such as *betreuren* ‘regret’. With this class of verbs, Sudhoff (2016) observes that the prolepsed clause can express new information, suggesting that it is not subject to the familiarity requirement in (19). On the other hand, Frey (2016) shows that the prolepsed clause in this case is interpreted as factive. Frey argues that clausal prolepsis with this small class of verbs is formed underlyingly in a [_{DP} D CP] configuration, where D is the definite determiner used in unique/non-anaphoric definites, not the one used in anaphoric definites, which, as I propose here, is the one involved in the rest of the cases where clausal prolepsis is licensed with non-factive predicates. This suggests that with different verbs, clausal prolepsis realizes different kinds of DPs. With factive verbs, clausal prolepsis realizes the structure of a non-anaphoric DP. With non-factive verbs, it realizes the structure of an anaphoric DP.

idxP, within the extended projection of N (cf. also Simonenko 2014). Under this view, idx is interpreted as a pronoun via the Traces and Pronouns Rule of Heim and Kratzer (1998), (22). This rule allows idx to be mapped back to an antecedent via the assignment function, resulting in the anaphoric interpretation illustrated in (25b). On the other hand, idx is missing from non-anaphoric definites which realize a smaller syntactic structure in which D is merged directly with an NP complement, (21).



(22) **Traces and Pronouns Rule:**

If α is a pronoun or trace, g is variable assignment, and $i \in \text{dom}(g)$, then $\llbracket \alpha_i \rrbracket = g(i)$.

Hanink (2021) proposes a single lexical D entry which has the meaning of an ι -operator, (23). Furthermore, she proposes a property meaning for idx, (24); idx denotes the property of being anaphoric, and so it functions as a modifier to NP with which it is semantically composed via Heim and Kratzer's (1998) Predicate Modification. Given this, idxP is also property denoting and it is composed with D via Function Application.

(23) $\llbracket D \rrbracket: \lambda P_{\langle e,t \rangle}: \exists! x(P(x)). \iota x_e[P(x)]$

(24) $\llbracket \text{idx} \rrbracket^g: \lambda y_e[y=g(i)]$

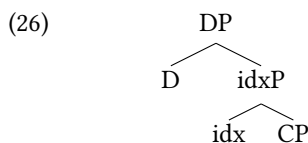
Turning to pronouns, Hanink (2021) argues in accordance with previous works that they must be analyzed as DPs in disguise (cf. Elbourne 2005, Postal 1969, Patel-Grosz and Grosz 2017 for German, Bi and Jenks 2019 for Mandarin). So, just like Elbourne (2005), Hanink (2021) takes pronouns to be DPs comprising an NP that undergoes NP-deletion. However, unlike Elbourne (2005), where the NP that undergoes deletion is merged in the complement position of D, Hanink assumes that the NP is merged as a complement of idx. Thus, under this view, pronouns realize the structure in (20). An additional difference between the analyses of Hanink (2021) and Elbourne (2005) is that in the latter, the requirement of a pronoun for a linguistic antecedent arises from NP-deletion, which can only take place in the presence of a linguistic antecedent. On the other hand, in Hanink (2021), this requirement arises from idx and the assignment function via which idx is interpreted.

Based on Hanink's (2021) analysis, I show in what follows that it is possible to account for the various usages of *het* using a single lexical entry of D. Two syntactic structures can be distinguished for cases like (25), repeated below, in which *het* is used as an anaphoric and non-anaphoric definite, and is followed by an NP.

- (25) a. In dit dorp ligt het kerkhof naast een tankstation.
in this village lies the cemetery next to a gas station
'In this village the cemetery lies next to a gas station.'
- b. Hans heeft een zonnetje_i en een maan getekend. Het zonnetje_i was blauw.
Hans has a small sun and a moon drawn the small sun was blue
'Hans has drawn a small sun and a moon. The small sun was blue.'

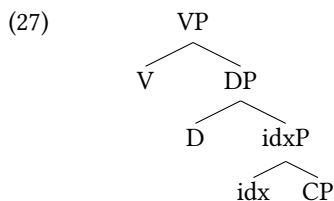
As a non-anaphoric definite, *het kerkhof* 'the cemetery' in (25a) realizes the structure in (21): *het* is a D-head and *kerkhof* 'cemetery' is an NP that is merged in the complement position of *het*. In (25b), *het zonnetje* 'the small sun' has the structure in (20). In this case, the complement of D is not the NP, but the idxP, which in turn takes the NP as a complement. In (6) and (7), where *het* functions as a pronoun picking a discourse antecedent, we distinguished two meanings, namely, individual and proposition denoting. Individual denoting *het*, as in (6), can receive Hanink's analysis of pronouns; *het* is a D-head taking idxP as its complement, and idx in turn takes as its complement an NP that undergoes NP-deletion. On the other hand, I assume that propositional *het* can only take a proposition as an

antecedent because the complement of *idx* is a CP, (26). The CP undergoes deletion just like the NP of individual denoting *het*.^{8,9}



4.2 Clausal Prolepsis

Based on the analysis of propositional *het* in (26), let us now assume that clausal prolepsis too realizes the same syntactic structure. Under this view, clausal prolepsis is propositional *het*; the only difference between propositional *het* and clausal prolepsis is that the CP complement of *idx* is overtly realized in the latter. Treating clausal prolepsis as propositional *het* has several advantages. First, the fact that clausal prolepsis is found in contexts where propositional *het* is possible (cf. the Prop-prolepsis generalization in 9) follows straightforwardly simply because clausal prolepsis is propositional *het*. Furthermore, the fact that in object clausal prolepsis, the prolepsed clause is interpreted in a position lower than the indirect object is also accounted for because, as shown below, the prolepsed CP is inside the VP, and, thus, lower than the indirect object which is typically assumed to be introduced by an applicative head higher than the VP (Pylkkänen 2008 i.a.).



4.3 Familiarity

As noted already, the analysis in (26) implies that clausal prolepsis is an instance of CP-nominalization, and so it resembles the nominalized clauses of Washo, for which the same structure has been proposed in Bochnak and Hanink (to appear). Washo nominalized clauses formed as shown in (28); they comprise an embedded clause which becomes nominalized via the *-gi/-ge* suffix that attaches to them. The nominal character of this morpheme is witnessed by its distribution in definite expressions, such as in (29a), where it is used as a personal pronoun, or as in (29b), where it surfaces with a demonstrative.

- (28) [\emptyset -haʔaš-ay-i-š-ge] di-hamup'ay-i
 3-RAIN-INT.PAST-IND-DS-NM.ACC 1/3-forget-IND
 'I forgot that it rained.'

⁸ See Collins (2015) for discussion of cases which involve CP-deletion, just like in the structure in (26).

⁹ The idea that the CP or the NP undergoes deletion opens up a number of possibilities. As shown, all options are attested except for options 3 and 7 below. I argue that 3 and 7 are not attested as a result of recoverability issues. Specifically, the D in these cases is non-anaphoric meaning that the content of the NP and the CP has not been introduced in the discourse. As a result of this, the NP and the CP in this case cannot be elided as a result of the fact that they do not have a contextual antecedent.

- | | | | |
|-------|--|---|--|
| (iii) | 1. $D_{non-anaphoric}+overt$
NP=unique definite DPs | 4. $D_{anaphoric}+covert$
NP=individual <i>het</i> | prolepsis with non-factive predicates |
| | 2. $D_{anaphoric}+overt$
NP=anaphoric definite DPs | 5. $D_{non-anaphoric}+overt$
CP=clausal prolepsis with factive predicates (cf. fn.7) | 7. $D_{non-anaphoric}+covert$
CP=? |
| | 3. $D_{non-anaphoric}+covert$
NP=? | 6. $D_{anaphoric}+overt$ CP=clausal | 8. $D_{anaphoric}+covert$
CP=propositional <i>het</i> |

- (29) a. gí: pélew ?i?wi
 3.PRO.NOM jackrabbit 3/3-eat.TR-IND
 ‘He’s eating the jackrabbit.’
 b. hádi-gi pélew Mú:bi?-i
 DIST-gi jackrabbit 3.run-IND
 ‘That jackrabbit ran.’

Bochnak and Hanink argue that Washo nominalized clauses are interpreted as familiar due to the nominal structure they project. They further claim ‘Independent cross-linguistic support for the view that the ‘nouny-ness’ of the complement correlates with a presuppositional requirement of familiarity comes from Bogal-Allbritten and Moulton (2018), who build on Kim (2009) and argue for a notion of familiarity implicated in nominalized clauses in Korean.’ Bogal-Allbritten and Moulton provide a detailed description of the contexts in which nominalized clauses are licensed in Korean. In Section 4.3.1, I go through the various contexts in which Korean nominalized clauses are licensed, and show that there is a strong correlation with prolepsed clauses because, as we will see, Korean nominalized clauses and prolepsed clauses are licensed in the same exact contexts. I take this correlation to further strengthen the idea that the prolepsed clause is a nominalized clause underlyingly. With this in mind, I turn to the syntactic structure in (27) in Section 4.3.2, and following Bochnak and Hanink (to appear), I show that it can account for the familiarity interpretation prolepsed clauses convey.

4.3.1 Korean nominalized clauses

In order to illustrate in which contexts nominalized clauses are licensed, Bogal-Allbritten and Moulton (2018) systematically compare nominalized clauses to plain embedded clauses. The latter are formed with the complementizer *ko* whereas the first are formed with *kes*. They first examine a context like the one in (30). Just like in (16), this context contains an assertion that carries content comparable, or string identical, to the proposition expressed by B in (30b) and (30c): A asserts *I finished my homework*. Bogal-Allbritten and Moulton show that in such a discourse a plain embedded clause, (30b), or a nominalized one, (30c), are licit in utterances of B. Recall that in the same context, a plain embedded or a prolepsed clause is allowed in Dutch (cf. 16).

- (30) a. A: I finished my homework. Can I go outside and play?
 B: No.
 A: Don’t you believe me?
 b. B: Um. Na-nun [ney-ka swukecey-lul ta ha-yess-ta-**ko**] mit-e. Haciman cikum-un cenyek
 Yes I-TOP you-NOM homework-ACC all do-PST-DEC-ko believe-DEC but now-TOP evening
 siksa sikan-i-ya.
 meal time-COP.DEC
 ‘Yes, I believe that you finished your homework, but it is dinner time.’
 c. B: Um. Na-nun [ney-ka swukecey-lul ta ha-yess-ta-nun **kes-ul**] mit-e. Haciman cikum-un
 Yes I-TOP you-NOM homework-ACC all do-PST-DEC-ADN kes-ACC believe-DEC but now-TOP
 cenyek siksa sikan-i-ya.
 evening meal time-COP.DEC
 ‘Yes, I believe (the claim) that you finished your homework, but it is dinner time.’

Similarly, Bogal-Allbritten and Moulton point out that both plain and nominalized clauses are allowed in a context like (31) where the proposition expressed by these clauses is entailed by A’s utterance. In this context, we saw that plain embedded and prolepsed clauses are allowed in this context (cf. 18).

- (31) a. *Context*: B has a rule that A must eat vegetables before having cake.
 A: I ate peas. Can I have cake now?
 B: No. A: Why? Don’t you believe me?
 b. Na-nun [ney-ka yachae-lul mek-ess-ta-ko] mit-e...
 I-TOP you-NOM vegetable-ACC eat-PST-DEC-ko believe-DEC
 ‘I believe that you ate vegetables (...but the cake’s not ready).’

- c. Na-nun [ney-ka yachae-lul mek-ess-ta-nun kes-ul] mit-e...
 I-TOP you-NOM vegetable-ACC eat-PST-DEC-ADN kes-ACC believe-DEC
 ‘I believe (the claim) that you ate vegetables (...but the cake’s not ready).’

On the other hand, Bogal-Allbritten and Moulton show that when the embedded clause expresses new information, only a plain embedded clause is felicitous, (32a), whereas a nominalized clause is not, (32b). In this respect, it is important to note that prolepsed clauses of Dutch pattern exactly like Korean nominalized clauses in that they cannot convey new information.

(32) Can Johnny go outside and play?

- a. Um. Na-nun [kay-ka swukecey-lul ta ha-yess-ta-ko] mit-e.
 Yes I-TOP he-NOM homework-ACC all do-PST-DEC-ko believe-DEC
 ‘Yes, I believe that he finished his homework.’
- b. # Um. Na-nun [kay-ka swukecey-lul ta ha-yess-ta-nun kes-ul] mit-e.
 Yes I-TOP he-NOM homework-ACC all do-PST-DEC-ADN kes-ACC believe-DEC
 ‘Yes, I believe (the claim) that he finished his homework.’

Bogal-Allbritten and Moulton (2018, (18)) propose that the familiarity requirement, shown below, in order to capture the interpretive properties of Korean nominalized clauses.

(33) The familiarity requirement of ϕ -*ta-kes*:

Utterance of ϕ -*ta-kes mit* ‘believe’ is felicitous just in case ϕ – or some utterance associated with propositional content that is consistent with ϕ – has been previously asserted in a local discourse.

This requirement is strikingly similar to the one that was proposed for Dutch prolepsed clauses in (19). This similarity further strengthens the proposed analysis according to which a prolepsed clause is a nominalized clause of the Korean or Washo type underlyingly.¹⁰ With this in mind, let us see exactly how the familiar interpretation of prolepsed clauses is accounted for under the proposed analysis.

¹⁰ Note that the act of assertion is required for the felicity of a nominalized clause. This is meant to capture the behavior of nominalized clauses in contexts like (iv). In this context, it is shown that a polar question is not sufficient to license B’s utterance of a nominalized clause, despite the fact that the proposition expressed by the nominalized clause is string identical to the proposition contained in A’s polar question:

(iv) Has John finished his homework?

- a. Um. Na-nun [kay-ka swukecey-lul ta ha-yess-ta-ko] mit-e.
 Yes I-TOP he-NOM homework-ACC all do-PST-DEC-ko believe-DEC
 ‘Yes, I believe that he finished his homework.’
- b. # Um. Na-nun [kay-ka swukecey-lul ta ha-yess-ta-nun kes-ul] mit-e.
 Yes I-TOP he-NOM homework-ACC all do-PST-DEC-ADN kes-ACC believe-DEC
 ‘Yes, I believe (the claim) that he finished his homework.’

Clausal prolepsis in Dutch behaves just like clausal prolepsis in German in the sense that the act of assertion is not required (cf. Schwabe et al. 2016).

(v) Has John finished his homework?

- a. Ja, ik geloof [dat hij zijn huiswerk af heeft].
 yes I believe that he his homework PRT has
 ‘Yes, I believe that he has done his homework.’
- b. Ja, ik geloof het [dat hij zijn huiswerk af heeft].
 yes I believe it that he his homework PRT has
 ‘Yes, I believe it that he has done his homework.’

4.3.2 Analysis: familiarity

Following Kratzer (2006), Moulton (2015) and Elliott (2016), Bochnak and Hanink (to appear), I assume that embedded clauses denote sets of individuals whose content is a certain proposition, just as shown in (34a). Under this view, an embedded proposition is linked to its content via a function CONT_w , (34b), that maps an individual x and a world w to sets of worlds compatible with the content of x (cf. Moulton 2015, 312). Furthermore, a proposition is turned into properties of individuals via a functional head introduced in the left periphery, F_{PROP} , with the denotation in (35a). Specifically, F_{PROP} takes a proposition and returns a predicate of individuals whose content is the proposition denoted by the clause, (35b).

- (34) a. $\llbracket \text{that Bob is a fraud} \rrbracket^w = \lambda x. \text{CONT}_w(x) = \lambda w'. \text{Bob is a fraud in } w'$
 b. $\text{CONT}_w(x) = \{w' : w' \text{ is compatible with the intentional content determined by } x \text{ in } w\}$
- (35) a. $\llbracket F_{\text{PROP}} \rrbracket^w = \lambda p_{\langle s,t \rangle} \lambda x_e [\text{CONT}_w(x) = p]$ Moulton (2015), Elliott (2016)
 b. $\llbracket F_{\text{PROP}}[\text{CP}] \rrbracket^w = \lambda x_e [\text{CONT}_w(x) = \llbracket \text{CP} \rrbracket]$

The assumption that *dat*-clauses are predicates finds support in the fact that just like English *that*-clauses, they can be combined with content nouns, e.g. *idea, rumor*, (36a). According to Moulton (2015), content nouns denote individuals with propositional content. Furthermore, Moulton argues that embedded clauses that can combine with a content noun in a construction as the one in (36a) have the same denotation as the content noun, that is, they denote a set of individuals with propositional content. Given this, the fact that an embedded *dat*-clause is allowed to combine with a content noun supports the idea that Dutch *dat*-clauses too denote predicates of individuals with propositional content. Additionally, just like English *that*-clauses, *dat*-clauses behave like predicates in cases like (36b) where it is shown that a *dat*-clause can be used as predicates in copular constructions with the content noun in subject position.

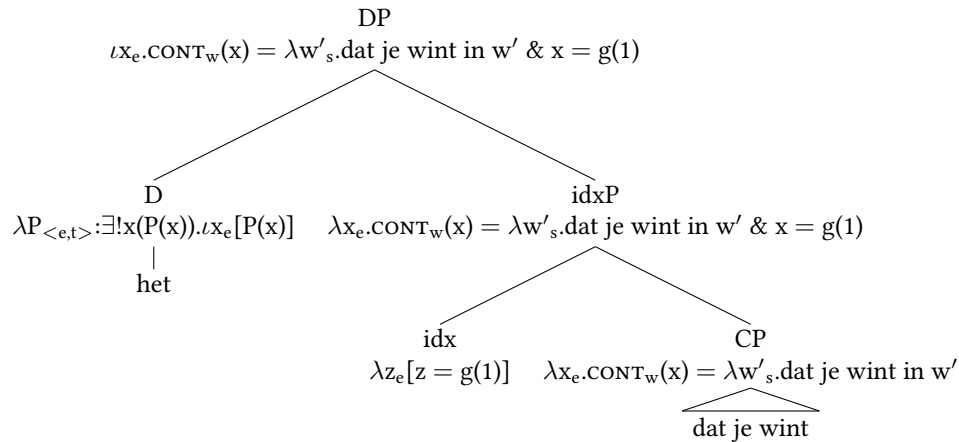
- (36) a. Het idee dat zij gauw zou komen.
 the idea that she soon would come
 ‘The idea that she would come soon.’
 b. Het idee is dat zij gauw zal komen.
 the idea is that she soon would come
 ‘The idea is that she would come soon.’

In clausal prolepsis, I assume that a *dat*-clause is turned into type e via the nominal structure under which it is embedded. Specifically, the prolepsed clause in (37), repeated from (1), is semantically composed as shown in (38), where the CP enters the derivation in the complement position of *idx*. The LF in (38) shows that *idx* and CP, two property denoting expressions, are semantically composed via Predicate Modification, just like the *idx* and the NP in anaphoric definites. *idxP* also denotes a property, and so it is combined with D, realized by *het* in Dutch, via Function Application. The DP is an individual denoting expression which in turn saturates the argument position of the matrix verb via Function Application. Given the LF in (38), I assume just as in Bochnak and Hanink’s (to appear) analysis of familiarity in Washo nominalized clauses, that the prolepsed clause, that is, the CP in (38) is interpreted as familiar because *idx* maps the index (1, in 38) to the salient individual from the discourse whose content is compatible with the proposition expressed by the prolepsed clause.¹¹

- (37) Ik hoop (het_i) [dat je wint]_i.
 I hope it that you win
 ‘I hope that you win.’

¹¹ Hanink (2021) note that ‘Nothing especially crucial to the analysis hinges on the view that familiarity is introduced by *idx*.’ Alternative analyses of the way familiarity arises is pursued in Kastner (2015) and in Bogal-Allbritten and Moulton (2018). In these works, familiarity is encoded in the denotation of the D-head that is used in the formation of nominalized clauses. However, as noted by Bochnak and Hanink (to appear), an advantage of their approach over the ones in Kastner (2015) and Bogal-Allbritten and Moulton (2018) is that all instances of definite D can be accounted for via a single D-head. On the other hand, in previous analyses such as Bogal-Allbritten and Moulton’s analysis of familiarity in Korean nominalized clauses, and, in Schwarz’s (2009; 2019) analysis of definite Ds as well, the D used to form familiar clauses corresponds to a different lexical entry from the one used in the formation of non-familiar definites. Here I adopt the analysis of Bochnak and Hanink exactly because the different instances of *het* can be subsumed under a single D-entry, thus, avoiding accidental homophony.

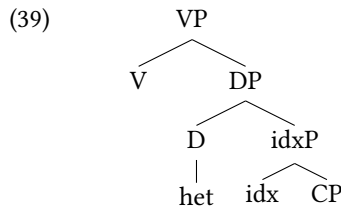
(38)



To sum up, I showed that a DP-analysis of Dutch clausal prolepsis can account for a number of its properties, namely, (a) that clausal prolepsis is formed with a propositional pronoun, (b) that it clausal prolepsis is only possible in contexts where propositional *het* can occur, (c) that the prolepsed clause is interpreted in the internal argument position of the verb, (d) that clausal prolepsis leads to a familiar interpretation.

5 Extrapolation

In the previous sections, I showed that a DP-analysis of clausal prolepsis according to which the prolepsed clause realizes a nominalized clause underlyingly, just as shown in (39), repeated from (27), can account for several properties of *het* and the prolepsed clause.



In this syntactic structure, *het* and the prolepsed clause form a constituent. However, even a cursory inspection of clausal prolepsis in an embedded context, as in (40), shows that *het* and the prolepsed clause surface as separate units suggesting that they do not form a constituent on the surface.

- (40) Jan zei dat hij het_i toch hoopte [dat deze beslissing genomen was]_i.
 John said that he it yet hoped that this decision taken was
 ‘Jan said that he hoped it that this decision had been made.’

How does the surface order in (40) arise from the syntactic structure in (39)? I will resolve this tension between the underlying structure in (39) and the surface order in (40) by assuming that the CP of Dutch undergoes syntactic movement out of the DP, extraposition, and I will provide evidence in favor of such movement operations. The idea that the Dutch embedded clauses formed with *dat* undergo extraposition is rather standard in the literature (cf. Broekhuis and Corver 2019 and references therein), and has been implemented in different ways.¹² The most recent analyses of CP-extraposition involve movement of the CP either leftward (cf. Hinterholz 1999, Kayne 2005,

¹² The proposed analysis also remains open as to why CP-extraposition is obligatory. It might be related to the way the CP is semantically composed with the matrix verb, as e.g. in Moulton (2015). Alternatively, the proposed analysis is also compatible with Sudhoff’s (2016) idea that CP-extraposition is obligatory due to phonological reasons arising in the syntactic structure underlying clausal prolepsis. Specifically, Sudhoff proposes that after factive predicates, the prolepsed CP enters the derivation in the complement position of D. Furthermore, the German counterpart of Dutch *het, es, [...] cannot serve as the phonological head of the complex DP, which prevents it from occurring together with the embedded clause at the surface. The obligatory extraposition of clauses associated with correlate-es can, thus, be described*

Koopman and Szabolcsi 2000 and Moulton 2015 i.a.) or rightward (cf. Bruening 2018 i.a.).¹³ In this paper I will not take a stand on what the correct analysis of extraposition is, as this is a topic the scope of which extends beyond this paper; what is important for the purposes of this paper—and what this paper will provide evidence for—is that the CP, which, as shown previously, starts out low in a DP-internal position, subsequently moves to a structurally higher position.¹⁴

6 Extraposition of the CP out of the DP

In this section I present various pieces of evidence from the distribution of different propositional DPs and the distribution of clausal prolepsis in support of the idea that the prolepsed CP undergoes extraposition out of the DP.

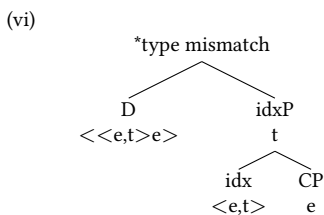
6.1 Proform choice

The proposed analysis of clausal prolepsis assumes that the prolepsed CP undergoes movement out of the DP where it enters the derivation. Furthermore, under standard assumptions regarding successive cyclicity, the CP must undergo movement through Spec,DP. This is so because Spec,DP constitutes a phase edge position.¹⁵ Given this, a prediction of the proposed analysis is that clausal prolepsis should be blocked in case Spec,DP is occupied. In what follows, I show that the demonstrative *dit* ‘this’ illustrates exactly this case. I begin by illustrating the various usages of the demonstrative. To start with, the Dutch demonstrative *dit* is ambiguous just like *het*, between individual and proposition denoting depending on whether they have an individual-denoting expression or a proposition as antecedent. For instance, (41) illustrates an example in which *dit* ‘this’ is individual denoting.

as a consequence of the lack of possible stress assignment to the syntactic head of the DP-shell.’ The proposed analysis is different from Sudhoff’s because the DP realized by clausal prolepsis after non-factive predicates also comprises idxP (cf. 26). However, in this case as well, it is possible that CP-extraposition is obligatory due to phonological properties of *het*, which, just like *es*, cannot serve as the head of the complex DP in (26).

¹³ See also Zwart (1993) for a non-movement analysis of CP-extraposition, and Moulton (2015) and fn.20 for criticism.

¹⁴ A question that arises is if CP movement changes the way in which the CP is semantically composed with idx in (38). In previous literature, the lower copy of a moved CP is turned into type *e* via the rule of *Trace Conversion* (cf. Fox 2002, Takahashi 2010, Moulton 2015). In the proposed analysis, idx denotes a property, $\langle e,t \rangle$, so, if *Trace Conversion* applies to the low copy of the CP, the trace-converted phrase, denoting *e*, and idx will be combined via Function Application. In this case, idxP will denote type *t*, just as shown in (19). An immediate consequence of this is that D, which can only be composed with expressions, like an NP or idxP, that denote $\langle e,t \rangle$, will no longer be able to combine with idxP to form a DP, due to a type mismatch.



However, since clausal prolepsis was shown previously to realize a DP underlyingly, then the copy of the CP inside the DP cannot be interpreted via *Trace Conversion* because, as was shown in (vi), the denotation of an idxP which comprises idx and a trace converted CP is not compatible with the semantics of D and thus, blocks its merger. Given the above, I assume that there is only one way in which the meaning of the CP can be semantically composed with the rest of the syntactic structure realized by clausal prolepsis, that is, idx and D. This way is illustrated in (38). As we saw, the CP enters the derivation in the complement position of idx in this case. Furthermore, even though there are different copies of the CP that are created throughout the derivation due to movement/extraposition of the CP outside the DP, the copy of the CP in the complement position of idx is fully interpreted at LF. I assume that the mechanism that allows the lowest copy of the CP to be fully interpreted in this case is total reconstruction (cf. Sportiche 2005 i.a. on total reconstruction). Indeed, the assumption that the prolepsed CP undergoes total reconstruction finds support in the data we considered in Section 3.3. These data show that the prolepsed CP can be fully interpreted in the verb’s internal argument position, exactly like it is predicted by the assumption that the CP undergoes total reconstruction. Given this, we can now conclude that CP movement does not change the way in which the CP of clausal prolepsis is shown to be semantically composed with idx in (38) because the CP in this case is fully interpreted in its base position via total reconstruction.

¹⁵ For a DP-as-a-phase analysis, see Chomsky (2000), Svenonius (2004), Bošković (2005) among many others.

- (41) Jan ging naar de bibliotheek_i. Dit_i was zijn favoriete plek in de stad.
 Jan went to the library this was his favorite place in the city
 ‘John went to the library. This was his favorite place in the city.’

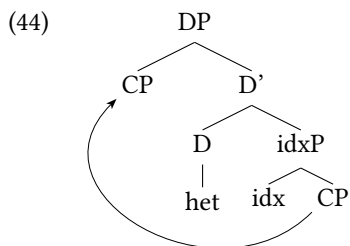
Under the propositional usage, *dit* ‘this’ can have a proposition as an antecedent. So, assuming a speaker, Speaker A, who utters a proposition like *blue whales are pregnant for 10-12 months*, Speaker B can use the sentence in (42) as a possible answer. In this case, *dit* can pick the proposition introduced by Speaker A as an antecedent.

- (42) ?Dit wist ik.
 this knew I
 ‘I knew this.’

(43a) shows that *dit* ‘this’ can relate semantically to a clause that follows, (43a).¹⁶ Nonetheless, (43b) shows that this property is not sufficient to license *dit* in clausal prolepsis.¹⁷

- (43) a. Ik wist dit: Erik was hier.
 I knew this: Erik was here
 ‘I knew this: Erik was here.’
 b. *Ik wist dit [dat jij er bent].
 I knew this that you there are
 Intended: ‘I knew this that you are there.’

Since in principle *dit* can have as antecedent a proposition that follows it (cf. 43a), I argue that *dit* is blocked in clausal prolepsis as a result of the syntax of demonstratives and extraposition of the prolepsed CP. In previous literature, demonstratives are assumed to be phrasal elements project complex structure. Furthermore, the consensus in previous literature on demonstratives is that they occupy Spec,DP (cf. Bernstein 1997, Leu 2007, 2015, Roehrs 2010 i.a.). In clausal prolepsis, I assume that CP-extraposition takes place via successive cyclic movement through the first phase edge, that is, Spec,DP, just as shown in (44).



¹⁶ The discussion here does not include *dat* ‘that’. Just like *het*, *dat* cannot be used in clausal prolepsis, (viiia). However, it is unclear whether this is due to syntactic reasons because in contrast to *dit*, *dat* cannot be used cataphorically more generally, as shown by the fact that it cannot refer to a clause that follows it, (viiib).

- (vii) a. *Ik wist dat_i [dat jij er bent]_i.
 I knew that that you there are
 Intended: ‘I knew that: that you are there.’
 b. *Ik wist dat_i: [Erik was hier]_i.
 I knew that Erik was here
 Intended: ‘I knew that: Erik was here.’

¹⁷ Note that in German, the demonstrative can be used to double a clause (cf. Sudhoff 2016 i.a.). This is possible in Dutch too. However, in that case there has to be a noticeable and obligatory intonational break separating the clause containing the demonstrative from the embedded CP. I take this to suggest that in Dutch (and possibly in German too), demonstratives are used in a different construction, namely, right dislocation.

On the other hand, the fact that clausal prolepsis cannot be formed with a demonstrative, like *dit*, as was shown in (43b), follows straightforwardly because occupying Spec,DP, demonstratives block the escape hatch through which movement of the CP transits in clausal prolepsis. All in all, the restriction *dit* is subject to in clausal prolepsis provides a first piece of evidence that the prolepsed CP undergoes syntactic movement through Spec,DP into a higher position.¹⁸

6.2 VP-fronting

Next, I present evidence from VP-fronting in clausal prolepsis that provides further support to the idea that the prolepsed CP undergoes movement out of the DP. I begin by illustrating a standard case of VP-fronting, in (45b), where the VP moves from its underlying position in (45a) into a clause-initial position.

- (45) a. Jan zal niet toegeven dat het probleem nu opgelost is.
 Jan will not admit that the problem now solved is
 ‘Jan will not admit that problem is now solved.’
 b. [Toegeven] zal Jan niet dat het probleem nu opgelost is.
 admit will Jan not that the problem now solved is
 ‘Jan will not admit that problem is now solved.’

Although this type of fronting is referred to as VP-fronting, it is important to note that it can affect constituents larger than a VP. This is illustrated in (46), where the constituent that is fronted not only comprises a verb, but a scrambled object DP, *boeken* ‘books’, as well. That the object has undergone scrambling is witnessed in (46) by the fact that it precedes the adverb *meermaals* ‘repeatedly’.

- (46) [Boeken meermaals lezen] doet hij niet.
 books repeatedly read does he not
 ‘He does not repeatedly read books.’

With this in mind, let us now turn to clausal prolepsis and VP-fronting, shown below with the verb *beloven* ‘promise’. (47a) shows that *beloven* can take an embedded clause as an argument, and (47b)-(47c) show *beloven* can undergo fronting either by itself or together with the embedded clause.¹⁹

¹⁸ The ungrammaticality of (43b) cannot be accounted for by accounts such as the one in Bennis (1986) where the proleptic pronoun and the embedded clause enter the syntactic derivation as two separate constituents. Specifically, Bennis (1986) argues that clausal prolepsis is formed with *het* merging in the internal argument position of the verb, and the CP merging as a VP-adjunct.

(viii) [_{VP} [_{VP} V *het*_i] CP_i]

The issue faced by this account is that it cannot account for the ungrammaticality of (43b). As discussed in Bennis (1986) the proleptic pronoun and the embedded clause are only linked via coindexation. Since *dit* can be coindexed with a CP that follows it, (43a), the derivation in (ix), where *dit* is the internal argument of the verb and is coindexed with a CP merged as a VP-adjunct, cannot be ruled out, and, thus, the ungrammaticality of (43b) cannot be accounted for.

(ix) [_{VP} [_{VP} V *dit*_i] CP_i]

¹⁹ The pattern illustrated in (47) is not unique to clausal arguments. For instance, (xa) shows the VP can undergo movement by itself in which case the DP may be stranded in a position higher than negation where it has undergone scrambling. (xb) shows that scrambling to a position past negation is not obligatory; so, *die boeken* may also undergo scrambling lower than negation in which case it can undergo fronting together with the VP.

- (x) a. [Lezen] wil ik die boeken niet.
 read want I the books not
 ‘I do not want to read the books.’
 b. [Die boeken lezen] wil ik niet.
 the books read want I not
 ‘I do not want to read the books.’

- (47) a. Jan wil niet beloven [dat hij komt].
 Jan wants not promise that he comes
 ‘Jan doesn’t want to promise that he will come.’
- b. [Beloven] wil hij niet [dat hij komt].
 promise wants he not that he comes
 ‘Jan doesn’t want to promise that he will come.’
- c. [Beloven [dat hij komt]] wil hij niet .
 promise that he comes wants he not
 ‘Jan doesn’t want to promise that he will come.’

Following Broekhuis and Corver (2019), I assume that *beloven* undergoes fronting via VP-movement. Given this, the fact that *beloven* can undergo fronting without the embedded clause, (47b), suggests that the syntactic position to which CPs undergo movement is outside the VP, as shown in (48).²⁰ The VP which forms a constituent on its own after movement of the CP to its extraposed position is allowed to undergo fronting. Furthermore, (47c) shows that VP-fronting can target a larger constituent, shown as XP below, which comprises the CP in its moved position. As mentioned before, I assume that the syntactic position the CP occupies outside the VP is the result of extraposition.



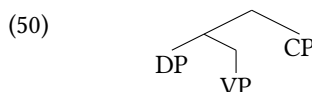
Beloven may also license clausal prolepsis, (49a). In this case, the fronting possibilities are the following: the verb can undergo fronting either alone, (49b), or together with *het*, (49c). The verb may also undergo fronting together with the pronoun and the prolepsed clause, (49d). However, the contrast between (49d) and (49e) shows that the verb can undergo fronting with the clause only if *het* is included in the fronted constituent.

- (49) a. Hij wil het niet beloven [dat hij komt].
 hij wants it not promise that he comes
 ‘He doesn’t want to promise it that he will come.’
- b. ? [Beloven] wil hij het niet [dat hij komt].
 promise wants he it not that he comes
 ‘Jan doesn’t want to promise it that he will come.’
- c. [Het [beloven]] wil hij niet [dat hij komt].
 it promise wants he not that he comes
 ‘Jan doesn’t want to promise it that he will come.’
- d. [Het [beloven [dat hij komt]]] wil hij niet.
 it promise that he comes wants he not
 ‘Jan doesn’t want to promise it that he will come.’
- e. * [Beloven [dat hij komt]] wil hij het niet.
 promise that he comes wants he it not
 ‘Jan doesn’t want to promise it that he will come.’

(49b) suggests that the prolepsed clause as well as *het* are outside the VP, and so the VP is allowed to undergo movement because it forms a constituent on its own, as in (47b). The idea that the prolepsed clause is outside the VP also finds support in (49c) where it is shown that VP movement can target a constituent which includes *het*, but not the prolepsed clause. The same example shows that in clausal prolepsis, the syntactic position of the prolepsed

²⁰ This speaks against Zwart (1993) according to which embedded clauses stay in-situ, that is, in the complement position of the verb. If that were the case, VP-fronting should not be allowed to take place without the embedded clause, contrary to fact.

clause is higher than the scrambling position of *het*. This fact is illustrated in the syntactic structure in (50), where *het* corresponds to the DP, and occupies a position higher than the VP out of which it has undergone scrambling. The same structure also shows that the syntactic position of the prolepsed clause, that is, the CP, is higher than both *het* and the VP. In this structure, the DP realized by *het* and the VP form a constituent, which as a result can undergo movement, as we saw in (49c). The VP, DP and CP may also undergo fronting, as shown in (49d), and this follows from the structure in (50), as the VP, DP and CP form a constituent.²¹ On the other hand, the VP and the CP do not form a constituent to the exclusion of the pronoun in (50) thus, the fact that the VP and CP cannot undergo fronting together, as was shown in (49e), follows straightforwardly.



To sum up, the VP-fronting facts suggest (i) that *het* as well as the embedded clause of clausal prolepsis occupy a position outside the VP, (ii) that the embedded clause occupies a syntactic position higher than *het*. However, since the prolepsed clause was shown to enter the derivation in a low position, that is, inside the matrix VP, there is only way in which it can also occupy a syntactic position higher than the matrix VP, and that is, via movement. So, the VP-fronting facts further strengthen the idea that the prolepsed CP undergoes movement in the course of the derivation outside the DP.²²

²¹ The fact that *het*, the verb and the embedded clause can form a constituent speaks against the bi-clausal analysis of clausal prolepsis proposed in Ott and De Vries (2016). Under this analysis, the verb and the pronoun, identified as correlate in the structure below, are contained in CP1. The embedded clause is hosted in a different CP, CP2 below, and undergoes movement into the left periphery where it is interpreted as a Topic. The structure below the CP undergoes PF-deletion which gives rise to the surface order.

- (xi) a. [CP₁ . . . V correlate . . .] [CP₂ CP₁ [. . . t₁ . . .]] → PF-deletion
 b. [CP₁ . . . V correlate . . .] [CP₂ CP₁ [~~. . . t₁ . . .~~]]

Note however that in this structure, the verb and the correlate do not form a constituent with the prolepsed clause, as a result of the fact that the prolepsed clause is contained in a different CP. Given this, the fact that the verb and the CP can undergo fronting as a constituent cannot be accounted for by the bi-clausal analysis of clausal prolepsis.

²² Looking at VP-fronting in German clausal prolepsis, Frey (2016) reports an identical data pattern as the one reported for Dutch in (49). Specifically, Frey argues that VP-fronting containing the embedded clause but not the proleptic pro-form is not possible, (xiiia). This is exactly the case in Dutch, as we saw in (49e). Frey further notes that more generally whenever an embedded clause belonging to a DP is part of VP-fronting and the licensing DP is left behind, such as in the middle field, we find ungrammaticality. The latter is shown on the basis of an N+CP construction in (52b).

- (xii) a. *[Abgelehnt [dass Maria mitkommt]₁] haben [es t₁] fast alle.
 rejected that Maria comes-along have it nearly all
 ‘Nearly everybody has rejected it that Maria may come along.’
 b. *[Zurückgewiesen [dass Maria kommt]₁], hat Max [die Behauptung t₁] sehr nachdrücklich.
 rejected that Maria comes has Max the claim very emphatically
 Intended: ‘Max has very emphatically rejected the claim that Maria will come.’

Frey argues that the ungrammaticality of these two examples can be explained in the framework of Fox and Pesetsky (2005). In a nutshell, the idea is that (xiiia) is ungrammatical because the linear order, ‘*es/Behauptung* < dependent clause’, established within the first spell out domain, that is, the DP is not maintained after fronting of the verb and the embedded clause. The reasoning behind Frey’s turns out to be problematic once we consider different extraction patterns of CPs out of DPs in German. For instance, the following example, also repeated later in (52a), has been shown in Blümel (2021) to involve movement of the clause to the left of its extraction site. Under Frey’s reasoning, this example should be ungrammatical, contrary to fact, because it violates the linearization established in the original spell-out domain, which just as in (52b) is ‘*Behauptung* < dependent clause’:

- (xiii) [Dass er inkompetent sei]_i, hat sie [die Behauptung t_i] gemacht.
 that he incompetent be had she the claim made
 ‘She made the claim that he is incompetent.’

Blümel (2021, (25))

6.3 Islandhood

The facts we considered in the two previous sections speak in favor of the idea that the prolepsed CP undergoes movement out of a definite DP. Given this, a question that arises is how CP-movement is possible in this case if definite DPs are strong islands for extraction, as is usually assumed. Importantly, the idea that definite DPs are strong islands for extraction is mainly based on cases like (51) where it is shown that movement of the argument DP *welk boek* ‘which book’ out of a DP comprising a definite D, a noun and a CP gives rise to ungrammaticality:

- (51) a. Jan heeft altijd [DP het feit [CP dat hij het boek niet gekocht heeft]] betreurd.
 Jan has always the fact that he the book not bought has regretted
 ‘Jan has always regretted the fact that he did not buy the book.’
- b. *[Welk boek]_i heeft Jan altijd [DP het feit [CP dat hij niet t_i gekocht heeft]] betreurd?
 which book has Jan always the fact that he not bought has regretted
 Intended ‘Which book has Jan always regretted the fact that he bought?’

Note, however, that definite DPs do not always behave as islands for extraction. Specifically, it has been pointed out in the literature on German that CP movement is in fact allowed out of a definite DP (cf. Sudhoff 2016, Frey 2016, Blümel 2021). For instance, Blümel (2021) shows that a CP that is base generated in a N+CP construction can surface dislocated in a left peripheral position, (52a). Using reconstruction diagnostics, namely, Condition C and pronominal binding, Blümel further shows that the CP undergoes movement from inside the DP, thus challenging the view that movement out of a definite DP is uniformly banned. The view that definite DPs are islands is further challenged by cases like (52b) in which a CP that associates with a position in an N+CP construction surfaces to the right of this position.

- (52) a. [Dass er inkompetent sei]_i, hat sie [die Behauptung t_i] gemacht.
 that he incompetent be had she the claim made
 ‘She made the claim that he is incompetent.’ Blümel (2021, (25))
- b. dass [Peters Vermutung t_i] sich nicht bewahrheitete [dass Marie nur scherzt]_i.
 that Peter’s suspicion REFL not proved-to-be-true that Marie only jokes.
 ‘That Peter’s suspicion did not prove to be true that Marie only jokes.’ Sudhoff (2016, (18a))

Dutch is similar to German in that CP-extraposition out of DPs is allowed. This is illustrated in (53) where a *dat*-clause and an infinitival one can surface to the right of their extraction site:²³

- (53) a. ?omdat [DP Jans vermoeden t_i] onwaar bleek [CP dat Marie alleen maar een grapje maakte]_i.
 because John’s suspicion untrue turned.out that Mary only but a joke made
 ‘Because John’s suspicion turned out untrue that Mary was only joking.’
- b. omdat Jan [DP zijn hoop t_i] opgaf [CP om Marie ooit nog terug te zien]_i.
 because John his hope gave.up for Marie every still back to see
 ‘Because Jan gave up the hope of ever seeing Marie again.’

Clausal prolepsis resembles the cases in (53) in that the *dat*-clause which originates in a DP-internal position surfaces extraposed to the right of its extraction site, just as illustrated in the simplified structure below:

Given that Fox and Pesetsky’s cyclic linearization fails to account for the more general phenomenon of CP-movement out of DPs, I conclude that it cannot be extended to the Dutch patterns in (49).)

²³ Note also that the extraction site of the prolepsed clause might also be inside a DP which is further embedded under a P, just as in the following example:

- (xiv) omdat Jan over zijn hoop sprak om Marie ooit terug te zien.
 because John of his hope talked for Marie ever back to see
 ‘because Jan talked about his hope to see Marie again.’

- (54) Hij wil [DP het t_i] niet beloven [dat hij komt]_i.
 hij wants it not promise that he comes
 ‘He doesn’t want to promise it that he will come.’

I assume that clausal prolepsis realizes an additional case where just as in (53), CP-movement out of a definite DP is possible. So, the proposed analysis of clausal prolepsis is not challenged by island considerations because there is evidence that CPs are independently allowed to move out of a definite DP.

7 Additional advantages of the proposed analysis

In this last section, I show that an advantage of the proposed analysis is that it can provide an explanation for two additional properties of clausal prolepsis, namely, that it is allowed in nominalized infinitives, but not in nominalizations, and that the prolepsed CP stands in a selectional dependency with the matrix verb.

7.1 Clausal prolepsis with nominalizations

Under the proposed analysis, clausal prolepsis comprises two movement steps, that is, scrambling of *het* and movement of the CP into a higher position. Now a prediction of this analysis is that a formation that is not structurally rich as to permit scrambling of *het*, it should also not permit clausal prolepsis. This is so because lacking the syntactic position in scrambling is licensed, the formation in question should also lack the syntactic position higher than the scrambling position of *het* where the CP undergoes extraposition in clausal prolepsis (cf. 50). With this in mind, I look at two distinct formations, nominalizations and nominalized infinitives. Nominalizations do not allow clausal prolepsis, and this follows from the proposed analysis because in comparison to the corresponding verbs, they are structurally deficient, lacking the higher position targeted by CP-extraposition, as can be shown by the fact that they block scrambling, and do not allow modification by certain adverbs. On the other hand, nominalized infinitives which project more structure, thus, allowing scrambling and modification by higher adverbs, do permit clausal prolepsis.

7.1.1 Nominalizations: clausal prolepsis and scrambling

As discussed already, I propose that in nominalizations, clausal prolepsis is not allowed because in contrast to verbs, nominalizations lack the syntactic position where the prolepsed CP undergoes extraposition. This position which, as shown in (50), is higher than the scrambling position of *het*, cannot be present in nominalizations as a result of the fact that they also lack lower syntactic positions. The latter is illustrated by the fact that unlike in verbs, scrambling and modification by certain adverbs is blocked in nominalizations. I begin by illustrating the fact that clausal prolepsis is blocked in nominalizations. Here this fact is shown with a nominalization like *ontkenning* ‘denial’. This nominalization comprises the root *ontken*, also used in the formation of the verb *ontkennen* ‘deny’, and the nominalizer *-ing*. *Ontkenning* takes PPs as arguments. One such PP may comprise *het*, which is independently known to be turned into *er* next to a P. In this case, (55) shows that *het*, realized as *er*, cannot be linked to an embedded clause suggesting that nominalizations like *ontkenning* block clausal prolepsis.²⁴

²⁴ Note that in (55), *er* can be propositional because, as shown below, it can have as an antecedent a proposition from the discourse.

Context: It was known to everybody [that John committed the crime]_i. So,

- (xv) De ontkenning ervan_i door de rechters maakte Mary van streek.
 the denial it-of by the judges made Mary van upset
 ‘The denial of it by the judges upset Mary.’

The behavior of clausal prolepsis in nominalizations is consistent with the Prop-prolepsis generalization; according to this generalization, clausal prolepsis can occur only in those contexts where propositional *het* can occur. This does not mean, however, that there are no contexts, like in nominalizations, where propositional *het* is possible, but clausal prolepsis is not.

- (55) De ontkenning er_ivan (* [dat Jan ziek is]_i).
 the denial it-of that Jan sick is
 Intended: ‘The denial of it that Jan is sick.’

With this in mind, let us now consider two facts which suggest that nominalizations lack the high syntactic positions where the prolepsed CP undergoes movement: in contrast to verbs, nominalizations cannot license (a) modification by certain adverbs, and (b) scrambling. The first fact is shown below with adverbs, such as *waarschijnlijk*, *vaak*, *nooit*, *helemaal* ‘probably, often, never, completely’. These adverbs can modify the verb *ontkend* ‘deny’, (56), whereas they cannot modify the corresponding nominalization, as shown in (57).

- (56) Ik heb het waarschijnlijk/ vaak/ nooit/ helemaal (* het) ontkend.
 I have it probably often never completely it denied
 ‘I probably/ often/ never/ completely denied it.’
- (57) *De waarschijnlijk/ vaak/ nooit/ helemaal ontkenning.
 the probably often never completely denial
 ‘The probably/ often/ never/ completely denial.’

Turning to scrambling, the fact that it is not allowed in nominalizations is illustrated below by comparing the verb *vraagen* ‘ask’ to *ontkenning*. The verb can take a PP as an argument, which in turn may comprise a pronoun, namely, *er*. As shown in (58), *er* can either stay in-situ, that is, within the PP, (58a), or it can undergo scrambling out of the PP, as shown in (58b). On the other hand, nominalizations cannot license scrambling, as shown by the fact that when *er* is hosted in a PP that serves as an argument of *ontkenning*, *er* can only surface in a fixed position. Specifically, (59a) shows a nominalization, *ontkenning*, which takes a PP argument comprising *er*. As shown in the contrast between (59a) and (59b), *er* can only stay inside the PP, but it cannot undergo scrambling in which case it would surface in a prenominal position, as shown in (59b).

- (58) a. ?Jan zei dat ze nooit er-naar vraagt.
 John said that she never it-for asks
 ‘John said that she never asks for it.’
- b. Jan zei dat ze er nooit naar vraagt.
 John said that she it never for asks
 ‘John said that she never asks for it.’
- (59) a. De ontkenning er-van.
 the denial it-of
 ‘The denial of it.’
- b. *De er ontkenning van.
 the it denial of
 ‘The denial of it.’

Now adverbs are standardly assumed to be licensed syntactically by certain syntactic positions (cf. Cinque 1999 and references therein). So, the fact that nominalizations cannot be modified by *waarschijnlijk*, *vaak*, *nooit*, *helemaal* suggests that the relevant syntactic positions that are involved in the licensing of these adverbs are present in verbs, but absent in nominalizations like *ontkenning*. This said, note also in (56) that *het* must undergo scrambling, and, most crucially, that its scrambling position is higher than the syntactic position where *waarschijnlijk*, *vaak*, *nooit*, *helemaal* are licensed, just as illustrated in the simplified structure below:

- (60) [_{XP} *het* [_{YP} *waarschijnlijk, vaak, nooit, helemaal* [...]]]

Given this, it makes sense to assume that nominalizations do not allow scrambling because lacking the lower syntactic positions involved in the licensing of adverbs, that is, YP in the structure above, they also lack the hierarchically higher position where *het* undergoes scrambling, XP above. Building on this, I argue that clausal prolepsis is not allowed in nominalizations because lacking the scrambling position, XP, they must also lack the hierarchically higher

position, shown in (50), where the prolepsed CP undergoes movement. On the other hand, I show in the next section that nominalized infinitives which in contrast to nominalizations, project a richer syntactic structure, as shown by the fact that they allow adverbial modification and scrambling, allow clausal prolepsis.

7.1.2 Nominalized infinitives: clausal prolepsis and scrambling

I begin with a brief background in the way Dutch infinitives are formed. Specifically, they are standardly formed with the *-en* suffix. Additionally, they display nominal properties, as shown by the fact that they can combine with an overt determiner (cf. Looyenga 1992, Reuland 2011 i.a.). For instance, (61a) shows that the demonstrative, *dat*, can combine with an infinitive. Additionally, in contrast to nominalizations like *ontkennening*, the corresponding nominalized infinitives are structurally richer, as can be shown by the fact that they admit adverbial modification by adverbs such as *compleet* ‘completely’ (cf. Reuland 2011), as shown in (61b).²⁵

- (61) a. *Dat ontkennen dat Jan schuldig is.*
 that deny that John guilty is
 ‘That denying that John is guilty’
- b. *Dat compleet ontkennen dat Jan schuldig is.*
 that completely deny that John guilty is
 Intended: ‘that completely denying that John is guilty’

That nominalized infinitives are structurally richer is also witnessed by the fact that they permit scrambling. In (62), scrambling of *het* is responsible for the position of *het* before *compleet*.

- (62) *Dat vervelende (het) compleet (*het) ontkennen.*
 that annoying it completely it deny
 ‘That annoying and completely denying of it.’

In contrast to nominalizations, the following set of sentences show that nominalized infinitives permit clausal prolepsis. Under the proposed analysis, the fact that clausal prolepsis is allowed in nominalized infinitives suggests that they comprise the syntactic position in which the prolepsed CP undergoes movement. Under the proposed analysis, this syntactic position can indeed be present because nominalized infinitives are structurally richer than nominalizations, as can be shown by the fact that the first permit adverbial modification and scrambling.

- (63) a. *Dat eeuwige (het) ontkennen [dat Jan schuldig is].*
 that eternal it deny that John guilty is
 ‘that eternal denying that John is guilty.’
- b. ? *Dat vervelende (het) compleet (*het) ontkennen [dat Jan schuldig is].*
 that annoying it completely it deny that John guilty is
 ‘the annoying denying completely that John is guilty.’

To sum up, the syntactic behavior of nominalizations and nominalized infinitives suggests that clausal prolepsis correlates with the availability of the syntactic position in which the prolepsed clause undergoes extraposition. Nominalized infinitives do allow clausal prolepsis because they are structurally richer than nominalizations which, as shown, block prolepsis. This structural contrast between nominalized infinitives and nominalizations was shown on the basis of new facts suggesting that the latter do not allow scrambling and do not license modification by high adverbs.²⁶

²⁵ In current approaches to morphology (cf. Alexiadou and Borer 2020 for an overview), this contrast between nominalizations like *ontkennening* and nominalized infinitives like *dat ontkennen* follows as a result of differences in the height of attachment of *-ing* and *-en*. The first only attaches to a low position, which is hierarchically lower than, and thus, excludes the higher syntactic projections licensing *compleet*. On the other hand, infinitives are structurally richer, and thus, allow modification by *compleet* because the morpheme *-en* of infinitives attaches to a syntactic position which is structurally higher than the one licensing *compleet*.

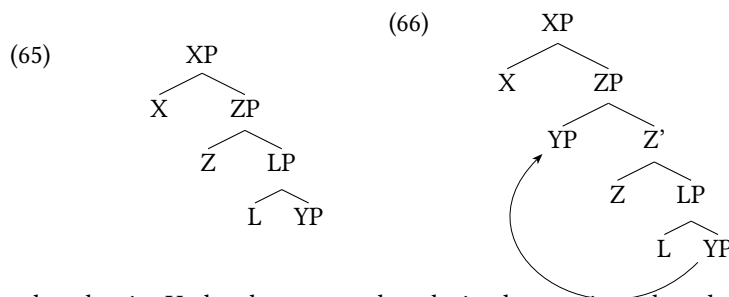
²⁶ A question that is relevant is why clausal prolepsis is not licensed in nominalizations via movement of the CP from inside the nominalization into the matrix clause, that is, in the position where it is licensed in the plain cases of clausal prolepsis. In contrast to the plain cases of clausal prolepsis, I argue that a prolepsed CP in cases like (55) cannot be licensed via movement into the matrix clause because the CP is

7.2 Selectional dependencies

The proposed analysis can also capture an additional property of clausal prolepsis, that is, that the prolepsed clause and the matrix verb stand in a selectional dependency. This fact is illustrated below with the verb *afvragen* ‘wonder’. This verb selects an embedded interrogative, as shown in (64a). Furthermore, the selectional dependency established between the matrix verb and the embedded clause is not blocked by the presence of *het* in clausal prolepsis. Similarly, the same verb does not select for declarative clauses, and, as shown in (64b), the presence of *het* does not change this property in clausal prolepsis.

- (64) a. Ik vraag (het) me af [of ze komen vanavond].
 I ask it me PRT if they come tonight
 ‘I am wondering if they are coming tonight.’
- b. *Ik vraag het me af [dat ze komen vanavond].
 I ask it me PRT that they come tonight
 Intended: ‘I am wondering if they are coming tonight.’

Selectional dependencies are standardly assumed to be established in a strictly local configuration, that is, Spec-Head or Head-Comp, where Merge can apply (cf. Sportiche 2005 and references therein). Furthermore, Merge can only apply when some feature is satisfied or valued (cf. Wurmbrand 2013 and references therein). Under this view, the fact that selectional dependencies can only be established via Merge suggests that they involve feature satisfaction/valuation. In order to understand how exactly a selectional dependency can be established under this approach, let us consider the two structures in (65) and (66). In the first, X and YP have not undergone Merge and thus, they do not stand in a dependency in which the features of X are satisfied/valued by the features of YP. On the other hand, Koopman and Szabolcsi (2000) and Koopman (2005) report cases in which X’s features can be valued by the features of YP in (66) where YP has undergone movement into Spec, ZP. In these works, it is argued that the after movement of YP, the features of YP can be transmitted, as in so-called ‘feature percolation’, to ZP via Spec-Head agreement. The features of YP which are now projected onto ZP, can satisfy/value the features of X in a local manner, that is, via Merger between X and ZP.

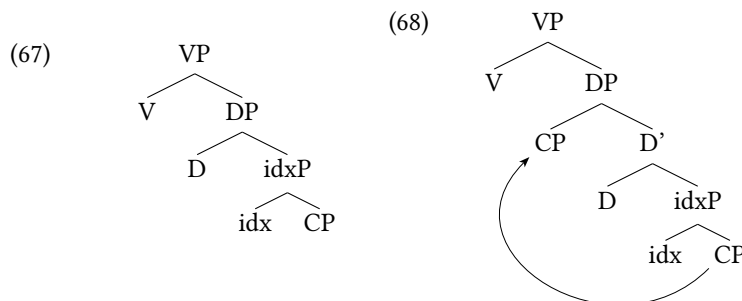


Let us now turn to clausal prolepsis. Under the proposed analysis, the matrix verb and the embedded CP, which carries the relevant $\pm Q$ features cannot stand in a selectional dependency if the prolepsed CP stays in-situ, that is,

more deeply embedded. Specifically, whereas in the plain cases the prolepsed CP is embedded under *idx* and *D* (cf. 26), the CP is more deeply embedded in cases as (55) under the nominalizer, *-ing* of *ontkenning*, two *Ds*, *de*, *er* and a *P*, *van*. I assume that the presence of this additional structure renders nominalizations an island configuration blocking a derivation where the prolepsed CP moves from inside the nominalization into the matrix clause, that is, higher than the matrix VP. The assumption that the presence of this additional structure constitutes an island for CP extraction finds support below where it is shown that a CP can move outside a single DP, (xvii), but not so when the CP is embedded under two DPs, *een boek* ‘a book’ and *zijn hoop* ‘his hope’, and a *P*, *over* ‘about’, as in (xviii).

- (xvi) a. omdat Jan [_{DP} zijn hoop *t_i*] opgaf [_{CP} om Marie ooit nog terug te zien]_{*i*}.
 because John his hope gave.up for Marie every still back to see
 ‘Because Jan gave up the hope of ever seeing Marie again.’
- b. *omdat Jan [_{DP} een boek [_{PP} over [_{DP} zijn hoop *t_i*]]] las [_{CP} om Marie nog terug te zien]_{*i*}.
 because John a book about his hope read for Marie ever still to see
 ‘Because Jan read a book about his hope to see Marie again.’

inside the DP where it enters the derivation.²⁷ This is so because the matrix verb and the CP do not stand in a local configuration, (cf. 67). Recall, however, that the prolepsed CP transits through Spec-DP, just as shown in (68). Given this, the derivation underlying clausal prolepsis parallels the cases subsumed in Koopman and Szabolcsi (2000) and Koopman (2005) in (66), where a selectional dependency can be established after movement. In this case, after movement of the CP into Spec,DP, the $\pm Q$ features of CP are allowed to pass to the DP via Spec-head, and so the features of V can be satisfied/valued in a local manner via merger of V and DP.



Note that in analyses of clausal prolepsis where the prolepsed CP is base generated in a higher position, e.g. in a VP-adjunct position as in Bennis (1986), the fact that matrix V and the prolepsed CP stand in a selectional dependency cannot be accounted for. As discussed in fn.18, Bennis (1986) takes *het* to be merged in the complement position of the verb, and further assumes that the dependency between *het* and the prolepsed clause is mediated through co-indexation. However, since co-indexation has never been argued to be involved in feature valuation, it is a mystery in Bennis's analysis, how the selectional dependency between the matrix V and the prolepsed clause is satisfied. Given this, the proposed analysis fares better than previous accounts of clausal prolepsis where the CP enters the derivation outside the VP in providing an explanation, consistent with current assumptions, for the fact that matrix V and the prolepsed CP stand in a selectional dependency.

8 Conclusion

In this paper I proposed a novel analysis of object clausal prolepsis in Dutch, which takes the prolepsed CP to (a) enter the derivation embedded inside the DP formed by the proleptic proform, much like nominalized clauses of other languages, and (b) to undergo movement subsequently into a higher position. The analysis was based on recent work by Hanink (2021) on the syntax and semantics of definite descriptions, and was shown to account for the overall distribution of clausal prolepsis, different interpretive and syntactic properties of the prolepsed clause, and restrictions arising in the choice of proform used in clausal prolepsis. Lastly, the proposed analysis can explain previously unnoticed properties of clausal prolepsis, namely, that it is not allowed in nominalizations, and that the matrix verb stands in a selectional dependency with the prolepsed CP.

²⁷ See also Sudhoff (2016) for discussion on the same issue.

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