

Nominalization of clauses: the clausal prolepsis strategy

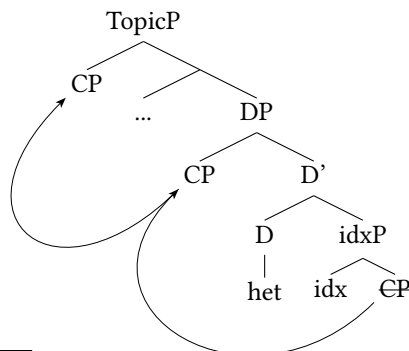
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1 Introduction

- This talk focuses on object clausal prolepsis in Dutch, the phenomenon where a pronoun doubles an object embedded clause, just as illustrated below:
 - (1) Hij zal het_i betreuren [dat hij nee heeft gezegd] $_i$.
he will it regret that he no has said
'He will regret it that he said no.'
- I present **novel evidence** showing that *het* 'it' of clausal prolepsis is a **semantically contentful** pronoun (cf. Bennis 1986), not a dummy one (cf. Postal and Pullum 1988). This raises two questions:
 1. How do the pronoun and the embedded clause, two distinct surface constituents interpreted as the verb's internal argument, associate with a single argument position?
 2. What is the syntactic relation, if any, between the pronoun and the embedded clause?
- I propose a novel analysis that takes clausal prolepsis to involve **nominalization** of the prolepsed clause followed by **topicalization**:
 - **Nominalization**: the CP is merged inside the DP formed by the pronoun, just like in nominalized clauses of Washo (cf. Hanink and Bochnak to appear, Rosenbaum 1965 on nominalization of clauses).
 - The DP comprises a pronominal component, an index, heading a projection, idxP, in the extended nominal projection (cf. Hanink 2020, and Schwarz 2009 for the idea that idx is syntactically represented).
 - **Topicalization**: the CP undergoes successive cyclic movement through Spec,DP into the left-periphery.

(2)



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- The proposed analysis accounts for several properties of clausal prolepsis:
 - clausal prolepsis is only possible with certain verbs, and never in nominalizations,
 - the prolepsed embedded clause can be interpreted in a low position just like an argument clause, but then ends up outside the VP,
 - out of all DPs that can refer cataphorically to clauses, only *het* can occur in clausal prolepsis.
- **Broader theoretical conclusions:**
 - There is only one *het* in its various usages (no accidental homophony, cf. Kayne 2019 and references therein).
 - Nominalization of clauses is more pervasive than typically assumed.
 - Embedded clauses of Dutch (and other languages) are **not** semantically composed as modifiers with the VP (*contra* Elliott 2020, Longenbaugh 2019).
- **Roadmap**
 - Background on *het* (Section 2).
 - New empirical generalizations (Section 3).
 - The analysis: nominalization and topicalization (Section 4).
 - Previous analyses of clausal prolepsis (Section 5).
 - Conclusion (Section 6).

2 Background on *het*

2.1 Background #1: *het* in a pronominal usage

- **Two usages:** Prop(ositional) (cf. Elliott’s 2016 PropDP) and individual-denoting *het*.
 - Prop *het*: as an argument of verbs that may select propositional arguments, e.g. *hopen* ‘hope’, (3a) vs. (3b), *het* can only refer to a proposition introduced previously in the discourse, (3c).
 - Individual *het*: as an argument of verbs that do not select propositional arguments, e.g. *kennen* ‘know’, (4a) vs. (4b), *het* can only refer to individual-denoting expressions that have been introduced in the discourse, (4c).

<p>(3) a. *Hij hoopt [het antwoord]_m he hopes the answer ‘*He hopes the answer.’</p> <p>b. Hij hoopt [dat jij er bent]_j he hopes that you there are ‘He hopes that you are there.’</p> <p>c. Hij hoopt <i>het</i>_{*m,√j} he hopes it ‘He hopes so.’</p>	<p>(4) a. Hij kent [het antwoord]_m he knows the answer ‘He knows the answer.’</p> <p>b. *Hij kent [dat jij er bent]_j he knows that you there are ‘He knows that you are there.’</p> <p>c. Hij kent <i>het</i>_{√m,*j} he knows it ‘He knows it.’</p>
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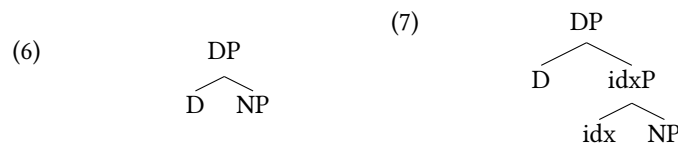
- The distribution of the pronominal usages of *het* is determined by **selection**:
 - Prop *het*: predicates that c-select a DP and s-select a proposition.
 - Individual *het*: predicates that c-select a DP and s-select an individual-denoting expression.

2.2 Background #2: *het* as a definite determiner

- *Het* can combine with an NP, in which case it is interpreted either as an a unique or an anaphoric definite (modified from Schwarz (2009, 40)):
 - (5) a. De receptie werd geopend door het kind.
the reception became opened by the kid
‘The reception was opened by the kid.’
 - b. Hans heeft een schrijver en een kind_i geïnterviewd. Hij kreeg geen interessante antwoorden van
Hans has a writer and a kid interviewed he got no interesting answers from
het kind_i.
the kid
‘Hans interviewed a writer and a kid. He got no interesting answers from the kid.’
- In (5a), *het kind* ‘the kid’ is a non-anaphoric unique definite; it does not have an antecedent, and so world knowledge dictates that a given town has a unique kid.
- In (5b), *het kind* is anaphoric to an antecedent, that is, *een kind* ‘a kid’.

2.3 Background #3: one lexical entry for *het*

- The internal structure of DPs has received a number of analyses recently (cf. Schwarz 2009, 2019).
- Here I follow Hanink (2020), who using evidence mainly from Washo, provides an analysis unifying D of unique and anaphoric definites:



Under this view:

- The semantic index associated with *idx* is interpreted along the lines of a pronoun by the Traces and Pronouns Rule of Heim and Kratzer (1998),
- *idxP* is property-denoting so just like an NP, it can be merged as an argument of D,
- pronouns are DPs in disguise (cf. Elbourne 2005 i.a.); they have the structure in (7) where the NP undergoes ellipsis (cf. Corver and Van Koppen 2011 on NP ellipsis in Dutch).

Turning to Dutch, *het* is a D-head:

- as a pronoun or anaphoric definite, it realizes (7),
- and (6), as an unique definite.

3 New empirical generalizations: *het* of clausal prolepsis is prop *het*

3.1 Empirical generalization #1: prop-prolepsis generalization

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

- (8) 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.'
- (9) a. *Hij klaagt het.
he complains it
'*He complains it.'
- b. Hij klaagt dat Karl een vreselijke jager is met oneindig geluk.
he complains that Karl a terrible hunter is with infinite luck
'He complains that Karl is a terrible hunter with infinite luck.'
- c. *Hij klaagt het dat Karl een vreselijke jager is met oneindig geluk.
he complains it that Karl a terrible hunter is with infinite luck
'*He complains it that Karl is a terrible hunter with infinite luck.'
- (10) a. Ik kan het hem niet aandoen.
I can it him not do
'I cannot do it to him.'
- 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
'*I cannot do to him that I 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 to him that, namely, abandon him.'

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

Table 1: The distribution of Clausal Prolepsis.

3.2 Empirical generalization #2: parasitic gaps

- Prop *het* can bind a parasitic gap, and so can *het* in clausal prolepsis.

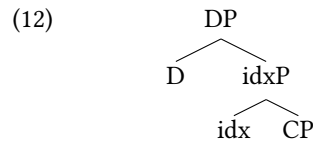
- (11) a. Jan zei dat hij het [na nogmaals e overwogen te hebben] toch t betreurde.
John said that he it after again considered to have yet regretted
'Jan said that he regretted it (after considering again).'
- b. Jan zei dat hij het [na nogmaals e overwogen te hebben] toch t betreurde dat deze beslissing
John said that he it after again considered to have yet regretted that this decision
genomen was.
taken was
'Jan said that he regretted it, after considering again, that this decision had been made.'
Bennis (1986, (19a))

4 The analysis: nominalization and topicalization

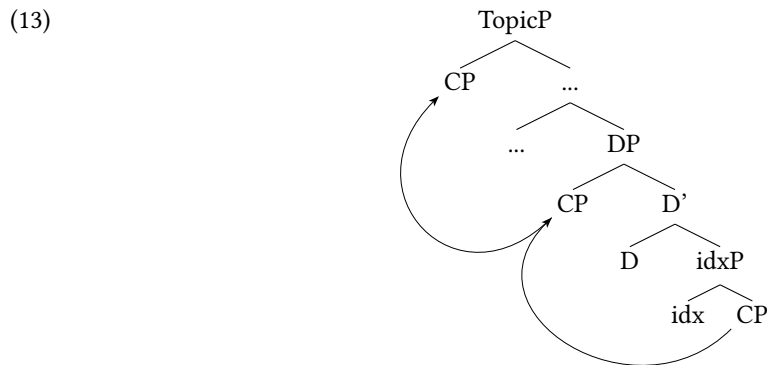
- Summary:
 - *Het* of clausal prolepsis is prop *het*.
 - Prop *het* is a semantically contentful pronoun (*contra* Postal and Pullum 1988).

4.1 Analysis

- In clausal prolepsis, *het* is a D with an idx component.
 - **Nominalization:** Idx takes a CP complement, not an NP one, so prolepsis realizes the structure of a nominalized clause of, e.g. Washo, underlyingly (cf. Hanink and Bochnak to appear).



- **Topichood:** familiar CPs are also interpreted as Topics in Dutch. Topicalized CPs are licensed in the left-periphery of a clause (cf. Koster 1978, Stowell 1981, Alrenga 2005, Moulton 2013 i.a.).
- The CP undergoes successive cyclic movement through Spec,DP into the left-periphery, as shown below (for evidence that CP-movement out of DP is allowed in Dutch, see the Appendix).



- The surface order, *het*>CP, may arise from the underlying structure in (13) in different ways, e.g. via remnant movement of the rest of the structure past TopicP.

4.2 Nominalization

4.2.1 Nominalization #1: the Prop-prolepsis generalization

- Under the proposed analysis, clausal prolepsis is underlyingly prop *het* with the CP merging in the complement position of idx.
 - Given this, clausal prolepsis is correctly predicted to be possible with all and only verbs that allow prop *het*, just like the Prop-prolepsis generalization suggests.
 - What are those verbs? Verbs c-selecting a DP, and s-selecting a proposition.

4.2.2 Nominalization #2: interpretive properties

- Merging as part of a DP in the argument position of the verb, the prolepsed clause is predicted to be interpreted just like plain clausal complements.

- Indeed, this prediction is borne out:

(14) Pronominal Binding

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

- (14a)-(14b) shows that with or without *het*, *hij* can be bound by the indirect object that is a low scoping QP such as *ook maar één student* 'any student'. If the indirect object is in-situ, the embedded clause must have been in its c-command domain at some point in the derivation.

(15) Condition C

- 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.'

- If the embedded clause contains a proper name, Condition C rules out coreference with a pronoun in the matrix clause. This is so because the embedded clause has been or is lower than the indirect object pronoun.

4.2.3 Nominalization #3: familiarity

- Under the proposed analysis the prolepsed clause is predicted to be interpreted as familiar, just like nominalized clauses of, e.g. Korean, Washo, Hebrew.

- Indeed, this prediction is borne out, as shown by the fact that clausal prolepsis requires:

- previous assertion with content identical, (16), or comparable, (17), to that of the prolepsed clause (cf. Bogal-Allbritten and Moulton 2018 for the Korean data in 16 and 17):

- (16) a. A: I finished my homework. Can I go outside and play?
B: No
A: Don't you believe me?

- 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.'

Dutch

- c. 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.'

Korean

- (17) a. *Context:* B has a rule that A must eat vegetables before having cake.
 A: I ate peas. Can I have dinner now?
 B: No. A: Why? Don't you believe me?
- 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 had eaten but the cake is yet not ready
 'approx. I believe it that you ate your vegetables, but your cake is not ready.' **Dutch**
- 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 that you ate vegetables (...but the cake's not ready).' **Korean**

- The prolepsed clause cannot express new info:

- (18) a. A: What do you believe?
 b. Ik geloof (*het) [dat hij zijn huiswerk af hebt], maar het is etenstijd.
 I believe it that he his homework PRT have, but it is dinner time
 'I believe it that he his done your homework, but it is dinner time.'

- *The familiarity requirement:*

Clausal prolepsis is felicitous only if the prolepsed CP has been previously introduced in a local discourse (see also Bogal-Allbritten and Moulton 2018 for a similar requirement in Korean).

4.3 Topicalization: movement out of the DP

4.3.1 Topicalization #1: extraposition

- The analysis predicts that a prolepsed clause does not occupy the syntactic position of a plain argument clause.
- Indeed, this prediction is borne out:
- VP-movement: a prolepsed clause is outside the VP.

- (19) a. Jan wil (het) niet beloven [dat hij komt].
 Jan wants it not promise that he comes
 'Jan doesn't want to promise (it) that he will come.'
- b. [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.'
- c. [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.' Broekhuis and Corver (2019, (352))

- The prolepsed CP undergoes movement out of the DP into the left-periphery. This accounts for the fact that it cannot undergo VP movement together with the verb.

4.3.2 Topicalization #2: clausal prolepsis with nominalizations

- The idea that the CP undergoes Topicalization can also be extended to account for a new observation, namely, that prolepsis is not allowed in nominalizations:

- (20) a. De ontkenning ervan.
 the denial it-of
 'The denial of it.'

- b. *De ontkenning ervan dat Jan ziek is.
 the denial it-of that Jan sick is
 ‘*The denial of it that Jan is sick.’

- *Het* turned into *er* in a PP can be propositional, (20a).
- However, clausal prolepsis is not allowed with nominalizations, (20b) (cf. Postal and Pullum 1988)
- Despite the fact that nominalizations have been shown to project verbal structure (cf. Alexiadou and Borer 2020 and references therein), this structure is not enough to support topicalization of the prolepsed clause.
- And since the CP is deeply embedded in (20b) under two Ds and a P, movement of the CP into the left-periphery of a higher clause is not allowed, so clausal prolepsis is blocked.
- Note that *er* can independently stand in clausal prolepsis with a CP:

- (21) Ik gruwel ervan dat Jan ziek is.
 I hate it-of that Jan sick is
 ‘I hate it that Jan is sick.’

4.3.3 Topicalization #3: proform choice

- Clausal prolepsis displays a striking interaction with the proform it is formed. This interaction will be shown to follow directly from the underlying syntax of clausal prolepsis.
- Besides *het*, *dit/dat* ‘this/that’ may also function as a PropDP in which case they can refer to a clause introduced in the discourse:

- (22) Context: Blauwe walvissen zijn zwanger voor 10-12 maanden. ‘Blue whales are pregnant for 10-12 months’
- a. Dat wist ik
 that knew I
 ‘I knew that.’
- b. ??Dit wist ik
 this knew I
 ‘I knew this.’

- Note, however, that *dit*, but not *dat*, can associate cataphorically with an embedded clause, (23b) vs. (23a).

- (23) a. *Er is me dat verteld/ Ik wist dat: Erik was hier.
 there is me that told I knew that: Erik was here
 ‘I was told that/I knew that: Erik was here.’
- b. Er is me dit verteld/ Ik wist dit: Erik was hier.
 there is me this told I knew this: Erik was here
 ‘I was told this/I knew this: Erik was here.’

- This can also explain why *dat* cannot associate proleptically with an embedded clause, (24a). Note, however, that just like *dat*, *dit* cannot be used either in clausal prolepsis.

- (24) a. *Ik wist dat [dat jij er bent].
 I knew that that you there are
 ‘*I knew that that you are there.’
- b. *Ik wist dit [dat jij er bent].
 I knew this that you there are
 ‘*I knew this that you are there.’

- The behavior of *dit* suggests that it is blocked due to the underlying syntax of clausal prolepsis:
- The CP of clausal prolepsis undergoes movement out of the DP into the left-periphery. Demonstratives block movement of the CP out of the DP because they occupy Spec,DP (cf. Leu 2007 i.a.).

4.3.4 Topicalization #4: selection

- The proposed analysis can account for the fact that despite the intervention of *het*, a verb stands in a selectional dependency with an embedded clause in clausal prolepsis (cf. Sudhoff 2016 for German).

- (25) 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
 ‘*I am wondering that they are coming tonight.’

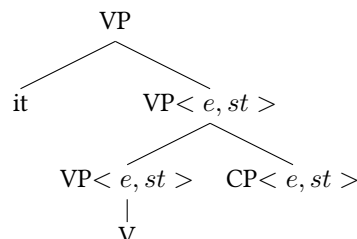
- The CP which undergoes movement through Spec,DP passes its $\pm Q$ feature on to DP via Spec-head. This is consistent with Koopman and Szabolcsi (2000) where it is proposed that “percolation” results from cyclic applications of specifier-head agreement.
- The matrix V can satisfy its selectional requirements with the DP.

(26) $[_{VP} V [_{DP} CP D [_{idxP} idx [_{\mathcal{CP}}]]]]$

5 Previous analyses of clausal prolepsis

- Stroik (1996): the pronoun enters the derivation in Spec,CP and undergoes movement into the matrix clause.
 - **Criticism:** This account wrongly predicts that all clause-embedding predicates can also license clausal prolepsis.
- Bennis (1986): *het* is merged in the argument position and the prolepsed CP is a VP-adjunct. *Het* and the CP are co-indexed.
 - **Criticism:** this account cannot explain why only a small subset of propDPs that can be used to refer to clauses cataphorically occur in clausal prolepsis.
- Building on the idea that the CP denotes sets of individuals with propositional content (Moulton 2015 i.a.), recent analyses take the VP and the CP to form a complex predicate formed via Heim and Kratzer’s (1998) Predicate Modification (cf. Elliott 2020) or Chung and Ladusaw’s (2003) Restrict.
 - In clausal prolepsis, the complex predicate formed by the VP and the CP takes *het* as an argument (cf. Longenbaugh 2019).

(27)



- **Criticism:** This account wrongly predicts that all clause-embedding predicates can also license clausal prolepsis. Nevertheless, the Prop-prolepsis generalization suggests that clausal prolepsis, V+het+CP, is dependent upon the availability of V+het, and not V+CP.

This cannot be accounted for by this account because V is composed with the CP before merger of *het*, contrary to what the Prop-prolepsis generalization suggests.

- Sudhoff (2016): *het* is analyzed as a D-head. This head is distinct from anaphoric *het*. D takes the CP as its complement. D is a weak phonological head that must escape the DP, and the CP undergoes extraposition via rightward movement, just as plain clausal complements.
 - **Criticism:** This account assumes that there is more than one accidentally homophonous lexical entries for *het*. It cannot account for the Prop-prolepsis generalization, and it also wrongly predicts that prolepsed and plain embedded clauses must occupy the same position.

6 Conclusion

- I proposed a novel analysis according to which clausal prolepsis involves **nominalization** and **topicalization** underlyingly:
 - **Nominalization** is what unifies clausal prolepsis with nominalized clauses of other languages.
 - **Topicalization** is what distinguishes Dutch from these other languages (in ways that need to be worked out: why does the CP have to undergo movement outside the DP in Dutch?)
- This analysis was shown to account for new empirical generalizations, and several properties of clausal prolepsis in ways that previous analyses cannot.

References

- Alexiadou, A. and H. Borer (2020). *Nominalization: 50 Years on from Chomsky's Remarks*, Volume 76. Oxford University Press.
- Alrenga, P. (2005). A sentential subject asymmetry in English and its implications for complement selection. *Syntax* 8(3), 175–207.
- Bennis, H. (1986). *Gaps and dummies*. Amsterdam University Press.
- Bogal-Allbritten, E. and K. Moulton (2018). Nominalized clauses and reference to propositional content. In *Proceedings of Sinn und Bedeutung*, Volume 21, pp. 215–232.
- Broekhuis, H. and N. Corver (2019). *Syntax of Dutch: Verbs and Verb Phrases. Volume 3*, Volume 3. Amsterdam University Press.
- Chung, S. and W. A. Ladusaw (2003). *Restriction and saturation*. MIT press.
- Corver, N. and M. Van Koppen (2011). Np-ellipsis with adjectival remnants: a micro-comparative perspective. *Natural Language & Linguistic Theory* 29(2), 371–421.
- Elbourne, P. D. (2005). *Situations and individuals*, Volume 90. MIT press Cambridge, MA.
- Elliott, P. D. (2016). Explaining DPs vs. CPs without syntax. *Proceedings of CLS 52*, 171–185.
- Elliott, P. D. (2020). *Elements of clausal embedding*. Ph. D. thesis, UCL (University College London).
- Hanink, E. and R. Bochnak (to appear). Clausal embedding in Washo: Complementation vs. modification. *Natural Language and Linguistic Theory*.
- Hanink, E. A. (2020). DP structure and internally headed relatives in Washo. *Natural Language & Linguistic Theory*, 1–50.
- Heim, I. and A. Kratzer (1998). *Semantics in generative grammar*, Volume 1185. Blackwell Oxford.
- Kayne, R. S. (2019). *Questions of syntax*. Oxford University Press.
- Koopman, H. J. and A. Szabolcsi (2000). *Verbal complexes*. Number 34. MIT Press.
- Leu, T. (2007). These here demonstratives. *University of Pennsylvania Working Papers in Linguistics* 13(1), 12.
- Longenbaugh, N. (2019). *On expletives and the agreement-movement correlation*. Ph. D. thesis, Massachusetts Institute of Technology.
- Moulton, K. (2013). Not moving clauses: Connectivity in clausal arguments. *Syntax* 16(3), 250–291.
- Moulton, K. (2015). CPs: Copies and compositionality. *Linguistic Inquiry* 46(2), 305–342.
- Postal, P. M. and G. K. Pullum (1988). Expletive noun phrases in subcategorized positions. *Linguistic Inquiry* 19(4), 635–670.
- Rosenbaum, P. S. (1965). *The grammar of English predicate complement constructions*. Ph. D. thesis, Massachusetts Institute of Technology.
- Schwarz, F. (2009). *Two types of definites in natural language*. University of Massachusetts Amherst.
- Schwarz, F. (2019). Weak vs. strong definite articles: Meaning and form across languages. *Studies in Diversity Linguistics* (25).
- Stowell, T. A. (1981). *Origins of phrase structure*. Ph. D. thesis, Massachusetts Institute of Technology.

Stroik, T. S. (1996). Extraposition and expletive-movement: A minimalist account. *Lingua* 99(4), 237–251.

Sudhoff, S. (2016). Correlates of object clauses in German and Dutch. *Inner-sentential propositional proforms: Syntactic properties and interpretative effects* 23, 48.

A Appendix

See Sudhoff (2016) for similar data in German:

- (28) a. ? omdat Jans vermoeden onwaar bleek dat Marie alleen maar een grapje maakte.
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 zijn hoop opgaf om Marie ooit nog terug te zien.
because John his hope gave.up for Mary every still back to see
'Because Jan gave up his hopes of ever seeing Marie again.'