Swiping in English and Dutch: The Interaction between R-Pronouns and Modal Particles in Elliptical Questions

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Abstract

This thesis examines two approaches to ellipsis in order to gain further insight into the behaviour of clausal ellipsis when targeting constituents. In their recent article, Ott and Struckmeier (2018) advocate the usefulness of German modal particles (MPs) as a test to show selective targeting in swiping, in contrast to the generally accepted unselective *move-and-delete* approach of ellipsis argued by Merchant (2001). This thesis adopts Ott and Struckmeier's argument in order to determine whether the interaction between R-pronouns and MPs in clausal ellipsis in Dutch, also known as sweeping, results in evidence supporting selective targeting of constituents in the clause. This investigation was done via an acceptability judgment task, completed by 162 native speakers of Dutch and Flemish. Comparing acceptability scores of differing syntactic configurations shows that ellipsis does seem to target selectively, as MPs are demonstrated to be resistant to movement and are allowed as remnants in the ellipsis site. Further research into Dutch sweeping constructions thus seems to be advisable.

Keywords: ellipsis – sluicing – swiping – sweeping – acceptability judgment task

Swiping in English and Dutch: The Interaction between Prepositions and Modal Particles in Elliptical Questions

1 Introduction

The behaviour of prepositions in different syntactic environments has been a source of discussion for quite some time now, with recent years seeing a distinct focus on what happens to prepositions in pied-piping structures and preposition stranding structures occurring in interrogative sentences which contain elided elements (Abels, 2018; Merchant, 2001; Ott & Struckmeier, 2018). These structures, known under the names of *sluicing* (Ross, 1969) and *swiping* (Merchant, 2002), respectively 'With what?' and 'What with?', reveal unusual behaviour when studied within the standard framework of generative syntax, and therefore debate is ongoing in the literature on how to resolve the mechanics behind sluicing and swiping (Radford & Iwasaki, 2015).

In order to contribute to this debate, this thesis will examine how English preposition stranding and English swiping behave and compare them to Dutch sluicing and *sweeping* (Temmerman, 2019), a close equivalent of swiping in a similar Germanic language, with the aim of studying the underlying theory of ellipsis. Two main views will be discussed, the first being ellipsis targeting whole constituents only, commonly known in the literature as the *move-and delete* approach. When this approach is applied to a clause, the entire node of a syntactic tree structure is selected for ellipsis, causing whole constituents to be elided. This theory has always been traditionally assumed in the majority of literature on ellipsis, but the occurrence of – among other syntactic phenomena – preposition stranding, swiping and sweeping allow for a second theory which posits that ellipsis may selectively target elements within constituents, leaving certain specific phrases within the clause untouched (Griffiths, 2019; Ott & Struckmeier, 2018).

As it is these theories that constitute the focus of this thesis, their assumptions were tested by conducting an experiment that utilizes the interaction between ellipsis, modal particles and prepositions. By specifically investigating the interaction between Dutch R-pronouns and discourse particles such as *dan* and *wel* (no equivalent English translation is possible) in sentences which contain instances of ellipsis (e.g., *Waar dan mee?*/*Waarmee dan?*), further insight can be gained into which of the current theories is more plausible. Participants who are native speakers of Dutch or Flemish (languages that are very closely related) were asked to complete an acceptability judgement task where they had to decide whether various structures involving sweeping – which refers to a modal particle intervening between the R-pronoun and its preposition in ellipsis configurations – and their non-elided counterparts were acceptable to them or not, indicated by participants marking their response on a five-point Likert scale. The results show that there are good grounds to believe that ellipsis is selective, as the modal particle is resistant to movement yet survives the ellipsis operation, contrary to the move-and-delete theory. In addition, signs of regional language variation can be found regarding the pied-piping of R-pronouns, which indicates that closer study of the various regional differences may reveal further intricacies of ellipsis mechanisms. Although this thesis is intended to function only as a pilot study, I would contend that further systematic investigation would be of great value to the ongoing debate.

The structure of the thesis is as follows: Section 2 will review the relevant literature regarding prepositions, ellipsis, sluicing and swiping, and R-pronouns. In Section 3, the hypothesis under investigation will be formed and the methodology and construction of the experiment will be described. In Section 4, the findings of the experiment will be presented and discussed, first according to the various syntactic configurations and then according to sociolinguistic factors, Furthermore, this section will examine what the results imply for the

theories of ellipsis under consideration and how the trends found in the results may point to certain directions in future research, as well as addressing some limitations of the study and suggesting future improvements. To conclude the study, Section 5 will provide a brief summary of all the findings.

2 Literature Review

To develop a comprehensive overview of the syntactic configurations this thesis aims to inspect, this section will start with providing a review of the literature on prepositions and preposition-stranding in English and Dutch, on ellipsis, and of the work that has been done regarding the interaction of Dutch R-pronouns and ellipsis. In the following subsections, the basic notions and rules relating to the syntax of prepositions in these two languages will be built up from the ground level, resulting in a suitable conceptual framework for testing the interaction of R-pronouns and ellipsis.

2.1 Prepositions and Preposition Stranding

This thesis will focus on English and Dutch, though these are by no means the only languages which exhibit preposition-stranding. As both are Germanic languages, known for their productive preposition-stranding mechanisms (Merchant, 2002, p. 292), cross-linguistic differences may reveal the finer intricacies of preposition-stranding.

2.1.1 (Standard) English. The English preposition is defined by Pullum (2002) in the *Cambridge Grammar of the English Language* as “a relatively closed grammatically distinct class of words whose most central members characteristically express spatial relations or serve to mark various syntactic functions and semantic roles” (p. 603). The preposition (P) functions as the head of the preposition phrase (PP) and, due to English being a head-initial language, will precede its complement, usually a determiner phrase (DP). A simple example of a sentence using a PP can be found in (1):

(1) *He fixed the car with the hammer*.

The sentence in (1) has a manner adverbial PP containing the P *with* followed by its complement DP *the hammer*.

What is interesting in English is what happens to the PP when the sentence in (1) is transformed into a *wh*-interrogative:

(2) a. *With what did he fix the car?*
b. *What did he fix the car with?*

In (2a), the entire PP is fronted, as required by the *wh*-movement rule which moves the *wh*-phrase to Spec CP in the left periphery, leaving a gap with a co-indexed trace at the original site of the fronted element: [$_{CP}$[$_{PP}$ ***With what***$_i$] *did*$_j$ [$_{IP}$ *he* t_j *fix the car* ***t***$_i$]] (Poole, 2011, p. 152). However, in (2b) only the DP-complement is fronted, stranding the P at the original site: [$_{CP}$[$_{DP}$ ***What***$_i$] *did*$_j$ [$_{IP}$ *he* t_j *fix the car* [$_{PP}$ ***with*** t_i]]].

2.1.2 Dutch. Moving on to prepositions in Dutch, it is clear that English and Dutch, despite their close connection, display some differences in syntactic structure. As is the case with English prepositions, their Dutch counterparts (described by Zwart (2011) as "core-prepositions") usually precede the complement DP in a PP, although the head P may also follow the DP in some cases, for an example, see (3a) and (3b). This variability in head-complement position is likely a result of the general characteristic mixed word order of Dutch, leading to Dutch having prepositions, postpositions and even circumpositions (Zwart, 2011, pp. 97, 243); the latter will not be discussed in this thesis.

(3) a. *De kat zat op de mat.*
The cat sat up the mat
'The cat was sitting on the mat.'

b. *De* *kat* *sprong* *de* *mat* *op.*
The cat jumped the mat up
'The cat jumped onto the mat.'
(Adapted from Zwart, 2011, p. 98)

Example (3) shows one case where alternating the position of the P is possible. However, placing the P in a different position in the PP also causes a slight change in meaning, changing the more general locative preposition in a more directional postposition: "the locative/directional alternation". Furthermore, "prepositions may generally be both locational or directional", while "postpositions are purely directional" (Zwart, 2011, p.98). Lastly, adjacency also differs between prepositions and postpositions: prepositions have a strict adjacency rule for head and complement, postpositions may have intervening elements between the head P and the DP-complement, see (4):

(4) a. *De* *kat* *sprong* *de* *mat* ***weer*** *op.*
The cat jumped the mat again up
'The cat jumped back onto the mat.'
b. * *De* *kat* *sprong* *op* ***weer*** *de* *mat.*
The cat jumped up again the mat
'The cat jumped back onto the mat.'
(Adapted from Zwart, 2011, p. 99.)

These various possible constructions also have implications regarding preposition stranding. The fact that the P-head may both precede and follow the complement, as well as the fact that the PP may have intervening adverbial elements in some cases may make a seemingly stranded P not stranded at all. According to Zwarts (1997), "the main possibility for Dutch prepositions to be stranded" is the R-pronoun (p. 1092). Preposition stranding as seen in English is thus not licensed in Dutch, only extraction of what Hoekstra (1995) calls

"postpositional complements", namely R-pronouns, may be removed from their PPs (p. 96). Hoekstra links the difference in behaviour between these to the difference in word order: English is strictly VO and may strand initial heads, while Dutch is mixed and may not. The exception, as stated above, are R-pronouns, which will be discussed in the next section.

2.1.3 Dutch R-pronouns.

R-pronouns are core prepositions with a postpositional complement that has a locative morphological variant. This change only happens with specific complements: "the inanimate 3sg pronoun *het* (and colloquially also with other third-person pronouns), a demonstrative pronoun, an interrogative pronoun, or a quantifier" (Zwart, 2011, p. 99; see also Hoeksema, 2014, p.32). For an example of the morphological alternation, see (5):

(5) a. * *met* *het* > *er* *mee*
with 3SG.INAN LOC with
'with it'

b. * *met* *wat* > *waar* *mee*
with Q.INAN LOC with
'with what'

(Zwart, 2011, p. 99)[1]

These locative and prepositional elements of R-pronouns do not need to be adjacent – though when they are, they may be written as a single word, e.g *waarmee* – allowing the locative *wh*-element to be fronted and stranding the prepositional element in situ. The stranded P will

[1] Abbreviations used in example (5): 3SG = third person singular number; INAN = inanimate; LOC = locative pronoun; Q = interrogative pronoun

always be a part of the core set of prepositions, as it is only these that may be R-pronominalized. Therefore, P-stranding is licensed with R-pronouns in Dutch. Furthermore, R-pronouns will still allow pied-piping, just as the simple Ps do.

For a more extensive treatise on the structure of Dutch prepositions, see Hilda Koopman's (2000) exhaustive article on the topic.

2.2 Ellipsis: Sluicing and Swiping

Now that prepositions and their properties are explained, the next step will focus on ellipsis. When presented with a sentence that contains a *wh*-element as the (often only) remnant of ellipsis, the term sluicing is used. An example in English would be (6), repeated from example (2). The first to study sluicing constructions was Ross (1969), who also discussed what happens when sluicing happens in a sentence containing preposition-stranding, see (7). Merchant (2002) later termed this specific instance of sluicing: sluiced wh-word inversion with prepositions (in Northern Germanic), known under the acronym swiping (p. 289).

(6) a. (non-elided)
Craig fixed the car, but with what did he fix the car?
b. (elided)
Craig fixed the car, but with what e*?*

(7) a. (non-elided)
Craig fixed the car, but what did he fix the car with?
b. (elided)
Craig fixed the car, but what e *with?*

Dutch again differs from English in that sluicing is still available but swiping is more restricted: "a language *L* will allow preposition-stranding under sluicing if and only if *L* allows preposition-stranding under regular wh-movement", which Dutch does not for core

prepositions (Merchant, 2002, p. 291). However, as mentioned above, R-pronouns do allow *wh*-movement, creating sentences with swiping such as (8):

(8) a. (non-elided, fronted *wh*-element, P-element remaining)
*Tom heeft de auto gemaakt maar **waar** heeft hij de auto **mee** gemaakt?*
'Tom fixed the car but **what** did he fix the car **with**?'
b. (non-elided, fronted R-pronoun)
*Tom heeft de auto gemaakt maar **waarmee** heeft hij de auto gemaakt?*
'Tom fixed the car but **what.with** did he fix the car?
c. (elided)
*Tom heeft de auto gemaakt maar **waar*** (e) ***mee*** (e)*?*
'Tom fixed the car but **what.with**?'

In the elided sentence in (8c) it is unclear where the elided constituents were taken from, (8a) and (8b) can both be possible antecedents.

Examples (7) and (8) show that there are syntactic constructions which allow ellipsis to take place within the boundaries of the clause. This begs the question on how ellipsis targets phrases within the clause in order to gain the swiping data seen above. The following two subsections will provide an overview of two general views on ellipsis: ellipsis straightforwardly deleting entire constituents and the more controversial selective ellipsis, which may leave clausal remnants in the ellipsis site.

2.2.1 Traditional view: unselective ellipsis. Perhaps one of the most well-known names in swiping research is Jason Merchant (2001; 2002), who investigated Germanic languages in particular for their prolificacy in instances of sluicing and swiping (Merchant, 2002, p. 292). He analyses swiping as head-movement to the preposition by the *wh*-element at phonological form (PF), while sluicing constitutes deletion at PF level (p. 311). This results in clausal ellipsis with nothing being spared. However, this presents a problem in cases like (9):

(9) a. [$_{CP1}$ *what* [$_{C1}$ Ø][$_{CP2}$ [$_{PP}$ [$_{P}$ *with*] t$_{WH}$][$_{C2}$ *did*][$_{TP}$ ~~*Craig fix the car* t$_{PP}$~~]]]

b. * *What with did?*

(cf. Radford & Iwasaki, 2015, p. 711)

Solutions to this problem have been posited. In the *CP shell* approach supported by van Craenenbroek (2010), the inverted auxiliary moves to a C_2 position. Yet, example (9) clearly shows that clausal ellipsis is not simply deletion of the TP-clause at PF, because if so, (9b) would be grammatical, which it is not. Radford and Iwasaki (2015) go beyond CP shells and advocate that a richer left periphery is necessary, working with ForceP, FocP and FinP. They argued that, with the *wh*-word in ForceP, the P in FocP and the auxiliary in FinP, it is the FinP that is elided (pp. 712-13).

Similar problems with unselective ellipsis have arisen with Dutch ellipsis configurations. Kluck (2015) analysed one such problem – that the R-pronoun cannot be partially elided but needs to be pied-piped in its entirety, i.e., both *wh*-element and P-element – and relates this to the necessity of the P escaping the ellipsis site in order to license the pronominal character of the *wh*-element (p. 248). Therefore, the preposition must move to guarantee the well-formedness of the sluiced sentence.

The three approaches by van Craenenbroek, Radford and Iwasaki, and Kluck provide an explanation that may fill in perceived gaps and inconsistencies in Merchant's theories. However, these approaches all rely on exceptional movement as a mechanism for solving the difficulties rising from an unselective ellipsis generalization. There may be a simpler analysis that does not require exceptional movement, as will be discussed next, namely that ellipsis is selective in targeting clausal elements.

2.2.2 Alternative theory: selective ellipsis

Jack Hoeksema (2014) considers the same problem as Kluck (2015), discussed in Section 2.2.1: how do Dutch R-pronouns behave in sluicing, since unselective clausal deletion results in ungrammatical Dutch? He concluded that *wh*-movement followed by PF deletion is an unlikely solution for R-pronoun characteristics (Hoeksema, 2014, pp. 32-33;37). Ott and Struckmeier (2018) agreed with this standpoint and presented data from a case study on German ellipsis where they considered clausal ellipsis interacting with particle remnants (e.g., modal particles (MPs) such as *denn*). They claim that exceptional movement of focused constituents cannot work in unselective ellipsis, as in fact German "MPs can survive clausal ellipsis despite being neither movable nor focusable" (Ott & Struckmeier, 2018, p. 395-96; for Dutch MPs see Zwart, 2011, p. 52), see (10) for an example.

(10) a. (non-elided)
Peter invited a couple of people.
b. (elided)
Wen denn?
who MP
c. (elided)
* *Denn wen?*
'Who?'

(Adapted from Ott & Struckmeier, 2018, pp. 397)

MPs are found in the middle field position and are therefore a good test of selective targeting in ellipsis configurations.

Most of the debate surrounding the different ellipsis frameworks has been done using English ellipsis structures, as this is the most widely studied. Nevertheless, as I have attempted to show, research regarding sluicing and swiping in other (Germanic) languages has

also been able to deliver meaningful additions toward a comprehensive ellipsis system. In the hopes of furthering these studies, my thesis will examine Dutch ellipsis in order to gain a better understanding of the English data. Tanja Temmerman (2019) has provided anecdotal evidence on several types of swiping in Dutch, including with MPs, naming it sweeping: sluicing with extra elements persisting:

(11) *Ik ben er zeker van dat ik Oranje kan helpen!*
'I am sure that I can help Orange!'
Hoe dan?
How MP?
(Adapted from Temmerman, 2019, p. 5)

Since P-stranding is permitted with Dutch R-pronouns (see Section 2.1.3), swiping could be expected, however, it is in fact difficult to discover whether it is truly swiping that occurs or whether it is normal PP-pied-piping without the addition of an intervening MP. Consequently, the experiment described in the following section is aimed at expanding Temmerman's evidence and investigating it in a systematic way.

3 Methodology

This section will discuss an experiment set up to examine how Dutch sweeping behaves. As far as I know, no such study has been performed on this scale, this work may thus serve as a pilot study investigating whether Dutch could provide fruitful to further research regarding sweeping. Due to the limited scope, no true statistical analysis will be performed in this thesis on the data collected. Rather, it will examine the mean acceptability scores of certain syntactic structures, collected via an acceptability judgment questionnaire, and highlight any trends indicating points of future interest.

3.1 Premise

The literature above has already pointed out some unresolved questions regarding swiping and sluicing in Germanic languages. Following Ott and Struckmeier's (2018) study, which tested what happens with the deletion of constituents when adding a fixed modal particle in the middle field position, this experiment will examine swiping in Dutch using Dutch MPs. This will hopefully allow for an answer to the question of whether the interaction of ellipsis, R-pronouns and MPs can tell us something about how the underlying constituent structure is selected by ellipsis in Dutch, and by extension, perhaps even in language in general. Based on the literature reviewed above, particularly that of Section 2.2.2, the acceptability of different syntactical configurations that interchange the presence of ellipsis and the presence and position of R-pronouns and MPs will reflect the likelihood of it truly being swiping or merely pied-piping: if the first – and this seems to be the case – the location of the MP must be fixed in the middle field; if it would have been the second, the MP would have been allowed to move within the clause.

A secondary interest during this investigation is whether regional variation (i.e., Dutch in the Netherlands, Flemish in Belgium), or other sociolinguistic factors such as age or gender, have any influence on the acceptability of the various ellipsis structures. Merchant (2001) notes that Dutch P-stranding data contains a considerable amount of speaker variation, which he ascribes to the currently transitional status of Dutch sluicing: about halfway between the syntactically licensed structures in the more restricted German and the relatively permissive English (p. 312). In light of this finding, gathering additional demographic information on the native speakers who participated seems prudent in order to gauge systematic sociolinguistic tendencies in the use of ellipsis.

3.2 The Acceptability Judgment Questionnaire

Now that a working concept has been formed, the appropriate method for testing it should be discussed. Following Schütze and Sprouse (2013), an acceptability judgement task was chosen as the optimal method to gather data. Judgment data have typically been used in experiments questioning "syntactically well-formedness" (Schütze & Sprouse, 2013, p. 27). An important distinction to be made here is that these questionnaires do not – and should not – attempt to measure whether participants find the stimuli grammatical. Grammaticality, either in the sense of the innate competence a person has in their native language or in the sense of the rules of grammar a person learns in school, is a rather strict concept in which one is either wrong or right, with very little in between. Opening a grammar of English or Dutch will show the 'right way' of forming sentences with no further need for testing. However, competence is not performance: what we find acceptable to say and to be said is a much more nuanced range. It is the "reported perception of acceptability" then that should be studied, as it provides "evidence for making inferences about the cognitive systems that give rise to them, which syntacticians assume includes the grammatical system of the human language faculty", even for "utterances that have never been naturally produced" (Schütze & Sprouse, 2013, p. 28-29). This perception of acceptability is also known as native-speaker intuition.

In order to receive a full and systematic understanding of how Dutch intertwines ellipsis and prepositions, it was important to question native speakers of Dutch on whether sweeping was found acceptable, and if so, to which degree. Subsequent comparisons of acceptability scores between different syntactic structures allowed for a first assessment of the hypothesis. This acceptability task was designed for online distribution using the Qualtrics software ("Qualtrics"), in order to reach a wider audience. The judgement task utilized a 5-

point Likert scale, in order to analyse both what was preferred and how much the preference scaled in comparison to the other stimuli tested.

3.2.1 Factorial design. The experimental design for the grammaticality judgment questionnaire consisted of a 2x3x3 within-subject factorial design with the presence of ellipsis, the presence and location of the modal particle, and the presence and structure of the R-pronoun as the three independent variables. The location of the modal particle, if present, was either directly after the locative *wh*-component of the R-pronoun (coded 'wh') or somewhere in the syntactic middle field of the stimuli (coded 'mf'). The structure of the R-pronoun varied according to it being used as a single word (coded 'unsplit') or used with the *wh*-component and the prepositional-components separate (coded 'split'). The dependent variable was acceptability, measured through the Likert score.

(12) Conditions tested in the experiment

A. Ellipsis - split R-pronoun - MP (wh=mf)
B. No ellipsis - split R-pronoun - MP (wh)
C. No ellipsis - split R-pronoun - MP (mf)
D. Ellipsis - unsplit R-pronoun - MP (wh=mf)
E. No ellipsis - unsplit R-pronoun - MP (mf)
F. Ellipsis - no R-pronoun - MP (wh=mf)
G. No ellipsis - no R-pronoun - MP (wh)
H. No ellipsis - no R-pronoun - MP (mf)
I. Ellipsis - unsplit R-pronoun - no MP
J. No ellipsis - unsplit R-pronoun - no MP
K. No ellipsis - split R-pronoun - no MP

This design created a total of eighteen possible syntactic structures to test, of which eleven (labelled A through K) were chosen as relevant to the research question. Please refer to Figure 1 for a representation of the factorial table. For the structures chosen, the factors in

play can be found in (12). Structures A-C are the main target of this study. The R-pronoun is split, indicating that the *wh*-element is fronted and the P-element remains in the original site. The MP intervenes in the middle field, as can be seen from the non-elided forms in B and C. In addition, structures A-E test whether Dutch speakers accept a combination of ellipsis, MPs and R-pronouns in general. Finally, structures F-H analyse whether Dutch allows MPs in elliptical utterances, and structures I-K examines the combination of R-pronouns and ellipsis.

Seven of the eighteen conditions were not retained in this study. Structures A, D and F functioned as doubled conditions for the modal particle, as ellipsis erased any middle field, causing the modal particle in 'mf' position to also automatically be in 'wh' position, causing these three conditions to be (superficially) identical. This leaves four conditions remaining that were discarded for this experiment in (13):

(13) Conditions discarded in experiment
- L. No ellipsis - unsplit R-pronoun - MP (wh)
- M. Ellipsis – split R-pronoun – no MP
- N. Ellipsis – no R-pronoun – no MP
- O. No ellipsis – no R-pronoun – no MP

Structure L was rejected because examining it would bring no further insight in the theory of whether modal particles in middle field position would indicate possible non-constituent ellipsis. Structure M was rejected because no modal particle is present to intervene in the R-pronoun: Dutch spelling rules would re-attach the R-pronoun and revert the condition to condition I. Finally, structures N and O were excluded due to the fact that they are ordinary, simple sentences with or without ellipsis, which would present no new information on Dutch.

In addition to functioning as an additional pool of information on the acceptability of syntactic structures with only a maximum of two factorial elements present, structures H-K

were also used as fillers for the experiment. These fillers were similar enough to the target construction as to distract participants away from the elements under investigation, therefore, no bias should have been present when answering. The choice of fillers thus maintains the naivety of the participants.

Figure 1. Factorial design of the three independent syntactic variables of the experiment. Due to the three-dimensional design being flattened onto a two-dimensional table, 'empty'areas were created that held no equivalent values within the R-pronoun axis (dark grey). Green and blue combinations were used, see (12). Light grey combinations were rejected on theoretical basis. Black combinations were rejected on structural/informational basis.

3.2.2 Material. The factorial design provided eleven syntactic structures to be tested. In order to control for extraneous variability, the R-pronoun and MP used should be kept lexically stable. However, this would have created an enormous amount of repetition in stimuli, which may have made participants bored or overthink their answers. Moreover,

examining the acceptability of a single R-pronoun or MP may have brought other consequences, such as the specific lexeme being unacceptable in a certain context or syntactic construction. Therefore, the choice was made to insert controlled lexical variation by testing three different R-pronouns *waarmee* 'what.with', *waarover* 'what.about' and *waarvoor* 'what.for' and two different MPs *dan* 'then' and *wel* 'well'. These six additional permutations, along with the eleven syntactic constructions they could be placed in, created a paradigm of 66 stimuli, each individual syntactic structure having six lexical versions.

Because of the locative nature of the *wh*-component and some structures being almost completely elided, each item was designed as a short dialogic exchange. This created a possibility to control for (lexical) ambiguity via the statement of a person A: the intended use was made clear through context. Person A would always express a statement of some kind, a person B's reaction contained the target: a request for more information. The stimuli were designed by myself (a native speaker of Flemish, currently inhabiting the Netherlands) and edited by native speakers of Dutch and Flemish in order to reduce cross-linguistic differences and unintended lexical unacceptability. The paradigm for the experiment can be found in the table below, Table 1 containing the *waarmee/dan* items; the complete list of lexically varied stimuli is presented in Appendix B. As can be seen in the table, the context provided by Person A was held stable for conditions which only varied for presence or absence of ellipsis, once more so that unintended lexical variation would not distort the data.

Since this design formed too large a set of stimuli to be presented to every individual participant, a Latin Square design was selected to counterbalance equal subsets of stimuli. Consequently, each participant received every A-G structure twice, once with *dan*, once with *wel* (the latter coded 'prime' in Latin Square design). The H-K filler structures were given thrice to each participant, once each with *dan* and *wel*, plus a third instance which alternated

between *wel* and *dan*. For the full Latin Square design, see Appendix A. By doing this, the number of stimuli per participant could be reduced from 66 to 26, while still guaranteeing that every item was tested, preventing fatigue or boredom and reducing the number of participants required (Abbuhl, Gass, & Mackey, 2013, pp. 120-21).

Table 1

Experimental Paradigm

Code		Stimulus (Prompt + Items)	Factors
	Person A	*Ze hebben mijn fiets eindelijk kunnen maken!*	Ellipsis, split
A1	Person B	*Waar* ***dan*** *mee?*	R-pronoun
B1		*Waar* ***dan*** *hebben ze je fiets mee kunnen maken?*	and MP
C1		*Waar hebben ze* ***dan*** *je fiets mee kunnen maken?*	
	Person A	*Ik heb de vlek uit mijn trui gekregen.*	Ellipsis, unsplit R-
D1	Person B	*Waarmee* ***dan****?*	pronoun
E1		*Waarmee heb je* ***dan*** *de vlek uit je trui gekregen?*	and MP
	Person A	*Ik heb al veel exotische bloemen gezien.*	Ellipsis
F1	Person B	*Waar* ***dan****?*	and MP
G1		*Waar* ***dan*** *heb je al veel exotische bloemen gezien?*	
H1		*Waar heb je* ***dan*** *al veel exotische bloemen gezien?*	
	Person A	*Ik denk dat ik weet met wat ik wil beginnen!*	Ellipsis and
I1	Person B	*Waarmee?*	R-pronoun
J1		*Waarmee denk je dat je wilt beginnen?*	(split and unsplit)
K1		*Waar denk je dat je mee wilt beginnen?*	

3.2.3 Participants. The acceptability questionnaire was completed by 162 native speakers of Dutch (101 female, 54 male, 1 other), of which 91 grew up in the Netherlands and 70 in Belgium (one participant grew up in South-Africa but indicated having Dutch as a

native language). The age-range of the participants was wide but not uniformly distributed: half the participants were in the 20 to 29-year-old age bracket, the other half were spread out more evenly across the remaining age brackets. In addition to the 162 complete responses, 36 responses were discarded due to being incomplete: these participants had not concluded the experimental segment of the questionnaire.

3.2.4 Procedure. The questionnaire was accessible through an anonymous link distributed on Facebook, via e-mail, and through word-of-mouth. Clicking on this link led the participant to the Qualtrics environment where first having Dutch or Flemish as a native language had to be confirmed before moving on to the actual experiment; this check was put into place to avoid unusable non-native data to be collected alongside the native data.

In the next step, the participant was shown an introduction, explaining the Likert scale and their task of judging acceptability and not grammaticality. It has been noted that the measured behaviour of participants on a task may change according to the assignment given to participants to perform (Schütze, 2016, pp. 130-31). Therefore, the introduction provided was in-line with established experimental recommendations. As a last step before the experiment started, three examples of what constituted a low or high acceptability Likert score were shown to anchor participants' scores (cf. Schütze & Sprouse, 2013, p. 33).

Participants were randomly assigned a Latin Square list by the Qualtrics programme; the number of participants assigned to each list was kept equal. In addition, the 26 items were automatically randomized within each list and shown on one page allowing for comparison between structures (although using your 'gut-feeling' was encouraged in the instructions). Participants read the utterance by Person A and could judge the target response by Person B by answering *Wat Persoon B antwoordt klinkt voor mij…* ('How Person B responds sounds … to me') with a multiple-choice Likert scale from 1 … *helemaal niet natuurlijk* ('completely

unnatural') to 5 "…*helemaal natuurlijk* ('completely natural'). The questionnaire closed by requesting demographic information: country of birth, province lived in during childhood (0 to 13-year-old), age and gender.

4 Results and Discussion

In the following section, all results from the acceptability judgment task will be presented and discussed. The primary objective of this experiment was to investigate whether MPs in the middle field were allowed in elliptical questions, even when the R-pronoun was split. The results comparing the different syntactic structures can be found in Section 4.1. A secondary objective was to examine whether the comparative differences in general acceptability of structures was altered when sorting the responses according to certain demographics; these results are presented in Section 4.2. Section 4.3 will be discussing some limitations of the experiment.

4.1 Results by Syntactic Configuration

Overall, there were clear distinctions of acceptability observed between the syntactic structures, with seemingly little impact from the lexical variation. Scores could theoretically range from 1.00 to 5.00; the lowest score measured was for structure B with a general mean acceptability score of 1.90, the highest scoring structure was for I with a mean score of 4.25. An overview of the mean scores per structure can be found in Figure 2, a more detailed list of all measured acceptability scores per lexical variant is presented in Table 2. The results of the separate Latin Square lists have been joined to display results of the population as a whole.

For the sake of clarity, the decision was made to colour-code all results in the table according to their acceptability grade: a score of 1.00-2.33 appears in red to signal the unacceptability of the structure, scores from 2.33-3.66 are coloured blue to signal partial acceptability, and scores from 3.66-5.00 are coloured green to signal high acceptability.

Although this rough distribution of data in equal thirds of the acceptability scale already shows a clear patterning in the data, the exact differences between results are of course more subtle. In the following paragraphs, I will treat each configuration from the lowest score to the highest.

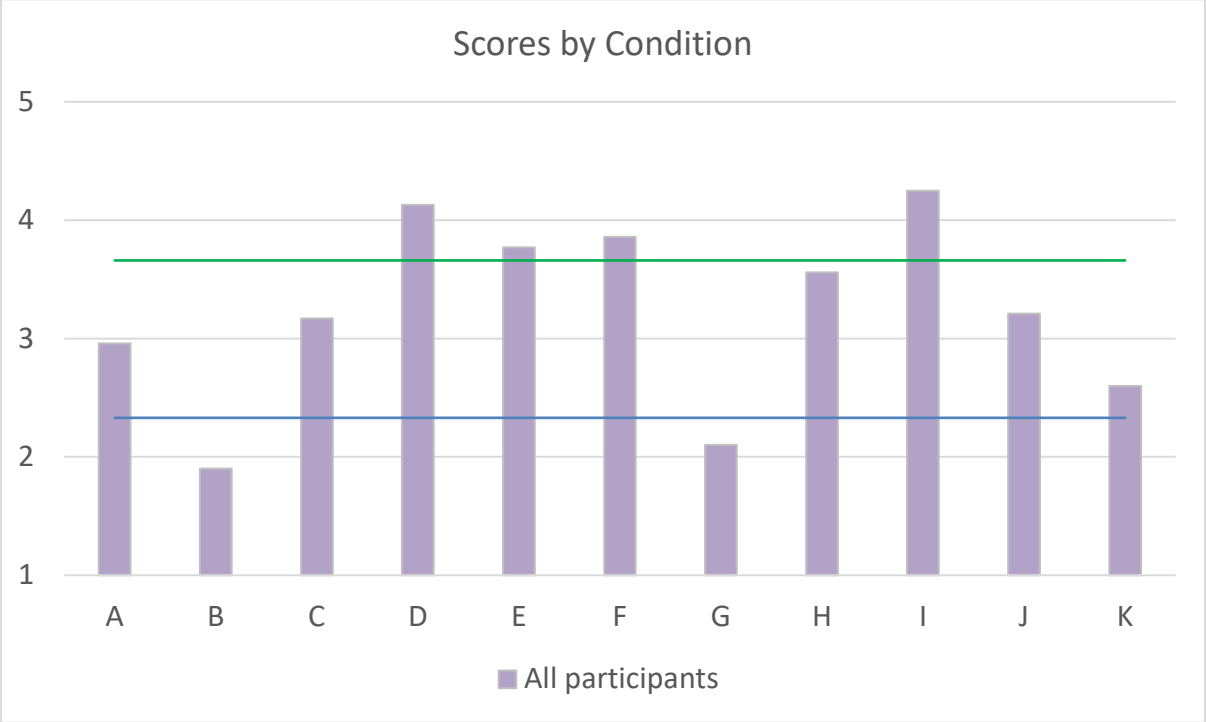

Figure 2. Mean syntactic acceptability judgment score. The horizontal blue and green lines signal acceptability intervals: below blue = unacceptable, between blue and green = partially acceptable, above green = acceptable.

4.1.1 Unacceptable conditions. To start, conditions B and G were the only two conditions found to be unacceptable. Going back to the list of factors in example (12), repeated in (14), the common factors shared by these two conditions are the absence of ellipsis and the position of the MP.

Table 2

Mean Acceptability Scores of the Different Syntactic Conditions.

Lexical Code	Syntactic Code										
	A	B	C	D	E	F	G	H	I	J	K
1	2.19	1.67	2.39	4.42	3.54	4.37	2.47	3.26	4.12	3.68	3.34
2	2.90	2.12	3.29	4.14	3.63	4.37	2.37	3.92	4.77	3.27	2.45
3	3.31	2.12	4.07	4.10	3.53	3.49	1.83	2.35	4.14	2.78	2.02
Mean	2.77	1.98	3.29	4.23	3.57	4.05	2.23	3.20	4.33	3.25	2.59
1’	3.25	1.95	3.55	4.06	3.84	3.22	2.08	3.62	3.78	2.74	2.29
2’	3.49	1.71	2.25	3.85	4.29	4.11	1.84	3.78	4.72	3.78	3.04
3’	2.73	1.78	3.37	4.16	3.80	3.69	1.96	4.35	3.97	2.93	2.54
Mean’	3.15	1.81	3.04	4.02	3.97	3.67	1.96	3.93	4.17	3.16	2.61
Total Mean	2.96	1.90	3.17	4.13	3.77	3.86	2.10	3.56	4.25	3.21	2.60

Note. Colour-coding was used to gain a quick general idea of the acceptability:1.00-2.33 = red (unacceptable); 2.33-3.66 = blue (partially acceptable); 3.66-5.00 = green (acceptable).

(14) Unacceptable conditions:

B. No ellipsis - split R-pronoun - MP (wh)

* *Waar dan hebben ze je fiets mee kunnen maken?*

G. No ellipsis - no R-pronoun - MP (wh)

* *Waar dan heb je al veel exotische bloemen gezien?*

It is unlikely that ellipsis is the determining feature in (14), rather, B and G are the only two configurations that have the MP placed immediately after the *wh*-element in a non-elided clause. There are other structures where the MP could possibly be in the left periphery, but all these conditions also include elision of the middle field: there is simply no intervening material remaining to show the position of the MP as originating in the middle field. Therefore, I would argue that the claim by Ott and Struckmeier (2018) that moving MPs from their fixed middle field position is illicit seems to bear out in my results.

4.1.2 Partially acceptable conditions. Second, there are a number of partially acceptable conditions. Conditions A and K both have a mean score below 3.00, henceforth marked with *??*.

(15) Partially acceptable conditions:

A. Ellipsis - split R-pronoun - MP (wh=mf)
?? *Waar dan mee?*

K. No ellipsis - split R-pronoun - no MP
?? *Waar denk je dat je mee wilt beginnen?*

The common denominator here is the form of the R-pronoun factor: the P-element is stranded by the moved *wh*-element. The only other tested case of a split R-pronoun was condition B, which was already judged to be unacceptable due to the position of the MP. Interestingly, B has a 0.20 lower score than the other unacceptable condition G, which had an unsplit R-pronoun. A full statistical analysis may be useful in discovering whether the additional unacceptable factor has a significant effect on the acceptability. Comparing the A and K conditions total means with their equivalent unsplit conditions total means, D and J, gives a large jump in acceptability from A to D (2.96 to 4.13) and a smaller – but still present – jump from K to J (2.60 to 3.21). Considered together, these results indicate that Dutch native

speakers prefer to pied-pipe the R-pronoun, keeping it as a whole, instead of stranding the core preposition in-situ and using sweeping constructions.

Continuing with slightly more licit conditions, conditions C, H and J are found above the halfway acceptability score of 3.00, with total means of 3.17, 3.56 and 3.21 respectively. These will get the acceptability marker *?*. The factors present are found in example (16):

(16) Partially accepted conditions:

C. No ellipsis - split R-pronoun - MP (mf)
? *Waar hebben ze dan je fiets mee kunnen maken?*

H. No ellipsis - no R-pronoun - MP (mf)
? *Waar heb je dan al veel exotische bloemen gezien?*

J. No ellipsis - unsplit R-pronoun - no MP
? *Waarmee denk je dat je wilt beginnen?*

The split R-pronoun in C can be ascribed as partially acceptable for the same reasons as described above for A and K. The other two conditions, however, have no clear reason to be only partially accepted. Condition H has only an MP present and is structured as a regular clause apart from this factor. One explanation might lie in the fact that there is some lexical variation to be noted between the use of base (e.g., *dan*) and prime (*e.g., wel*) MPs. The first has a mean acceptability of 3.20 compared to the prime mean score of 3.93 (which is in fact considered acceptable according to my colour-coding scale). Perhaps *wel* was preferred by participants, either specifically because the way the experimental stimuli were constructed (see also Section 4.3 on some limitations of the experiment) or in general language use.

No immediate explanation for the partial acceptability of J could be found, seeing as merely the presence of an R-pronoun is unlikely to be an illicit factor and changing the form of the R-pronoun is a less preferred option.

4.1.3 Acceptable conditions. Lastly, the following conditions were found acceptable by Dutch native speakers:

(17) Acceptable conditions:

D. Ellipsis - unsplit R-pronoun - MP (wh=mf)
Waarmee dan?

E. No ellipsis - unsplit R-pronoun - MP (mf)
Waarmee heb je dan de vlek uit je trui gekregen?

F. Ellipsis - no R-pronoun - MP (wh=mf)
Waar dan?

I. Ellipsis - unsplit R-pronoun - no MP
Waarmee?

Important to note in (17) is the fact that of the four conditions testing ellipsis in this experiment, three of them were found perfectly acceptable: D, F and I. The only other ellipsis condition, A, has a split R-pronoun as a limiting factor. Besides showing that ellipsis is a perfectly acceptable strategy in natural discourse, the acceptability of both the elided and unelided D and E – which had the same contextual prompt by Person A in the questionnaire – support the evidence for the MP being in fixed middle field position, and therefore are a powerful motivator for a selective ellipsis mechanism.

4.2 Results by Demographics

A number of interesting trends in the data have been discussed in the section above, showing that Dutch native speaker license only some of the syntactic configurations. However, whether these trends are influenced by sociolinguistic factors such as regional language variety, age or gender is also of importance, especially if Dutch should be categorized as a “transitional language” as Merchant (2001, p. 312) claims. Results show that

none of the considered sociolinguistic factors greatly changed the general outcome discussed in Section 4.1, though some subtle differences can be observed.

4.2.1 Acceptability by region. All participants were asked for their country of birth as well as the province where they grew up until age thirteen, considering a person's native language, and thus native speaker intuition, is primarily obtained in childhood (Blondeau, 2013, p. 501). Figure 3 shows the mean total acceptability per condition and country. In addition, Table 3 shows that the mean acceptability scores per country for the *dan* lexical variants (base) versus the *wel* lexical variants (prime), as lexical variation in the stimuli, either intended or unintended, may exert a greater influence in comparing regional variation.

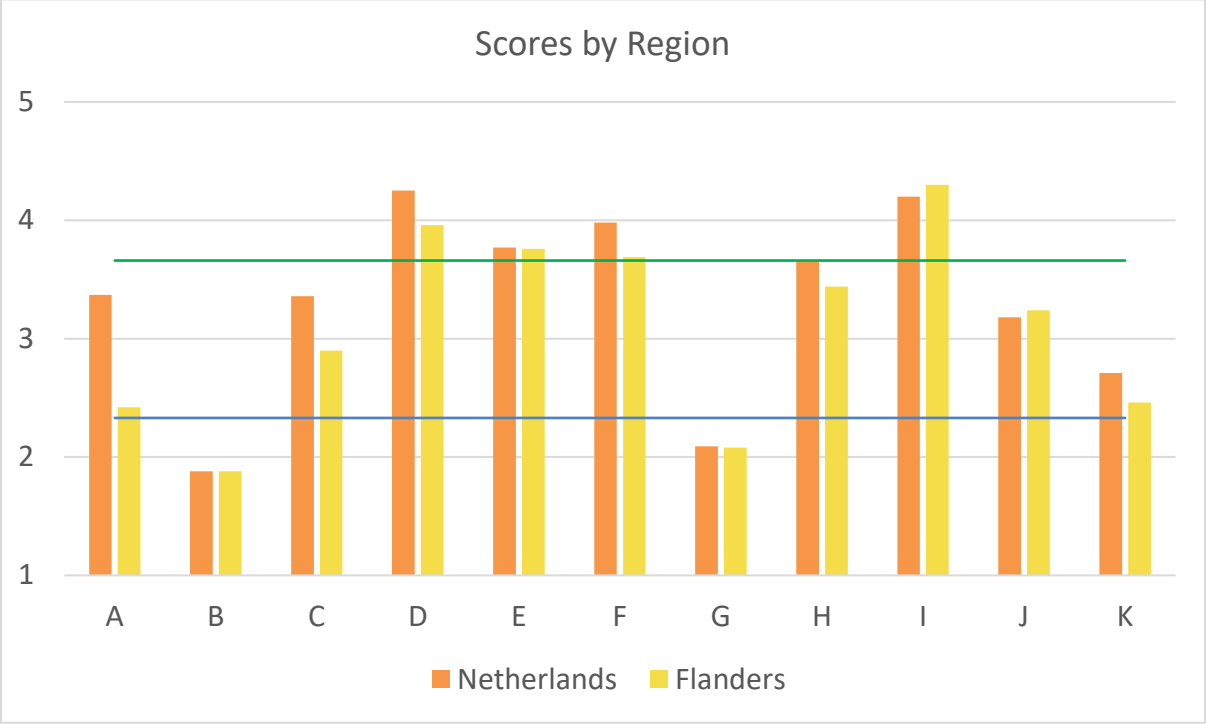

Figure 3. Mean syntactic acceptability judgment score by country.

Table 3:

Participants' Mean Acceptability Scores by Country of Birth (Netherlands n = 91; Flanders n = 70).

	Mean Base		Mean Prime	
Code	Netherlands	Flanders	Netherlands	Flanders
A	3.01	2.47	3.74	2.37
B	1.93	2.00	1.82	1.76
C	3.53	2.97	3.19	2.83
D	4.33	4.09	4.16	3.83
E	3.60	3.53	3.95	3.99
F	4.26	3.76	3.69	3.63
G	2.22	2.24	1.97	1.91
H	3.33	3.03	4.00	3.82
I	4.27	4.40	4.14	4.20
J	3.17	3.35	3.20	3.14
K	2.61	2.54	2.80	2.37

Generally, the results reflect the same tendencies as those measured across the entire population. However, three conditions present a 0.50 or larger difference across countries: A base, A prime and C base all have a higher acceptability score by speakers from the Netherlands. Referring back to example (12) shows that A and C both have a split R-pronoun, and are only distinguishable by the presence of ellipsis in A and the absence of ellipsis in C. An argument thus could be made that speakers from the Netherlands do allow sweeping, while Flemish speakers are more restricted and prohibit sweeping. Examining other conditions with a split R-pronoun show that condition C prime and K prime also have a somewhat higher acceptability score in the Netherlands, but the remaining conditions are

almost even in acceptability (B base, B prime and K base). Further research is necessary to provide conclusive evidence on this topic.

4.2.2 Acceptability by age and gender. When grouping the age results in three generations (see Figure 4), no large differences can be seen when comparing them except for, once again, conditions A, C and K. Participants below age thirty seem to like these conditions with split R-pronouns more than participants in older generations, though no even decline with age can be found. An added complication in this matter is the uneven distribution of age per country: of the 82 participants below age thirty, 63 come from the Netherlands. Consequently, it is difficult to say how much of the difference can truly be ascribed to the age factor and how much to regional differences.

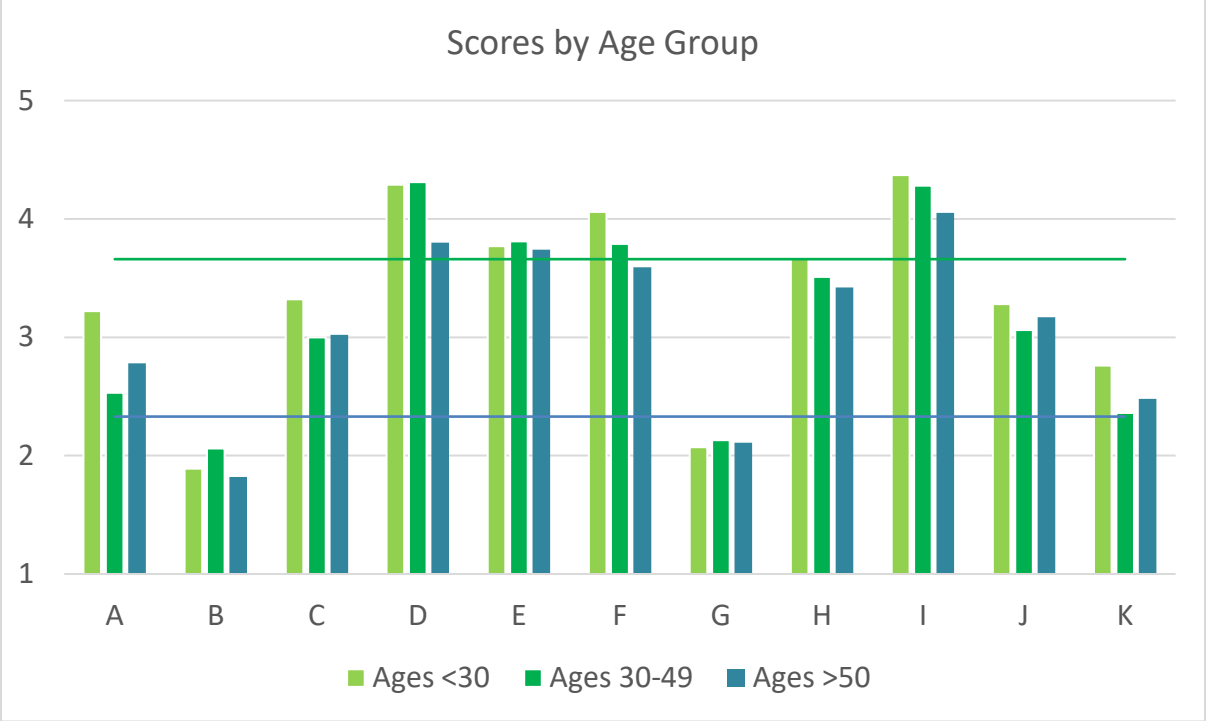

Figure 4. Mean syntactic acceptability judgment score by generation.

Generally, younger speakers are slightly more permissive in most conditions, except in those that were judged to be completely unacceptable (B and G).

Moving on to gender influence, as expected, no large differences between the judgment scores on syntactic structures were noticed in any of the conditions, see Figure 5. There is a tendency for women to rate acceptability of conditions slightly higher (+ 0.33 on average) than men in all conditions that are (partially) acceptable.

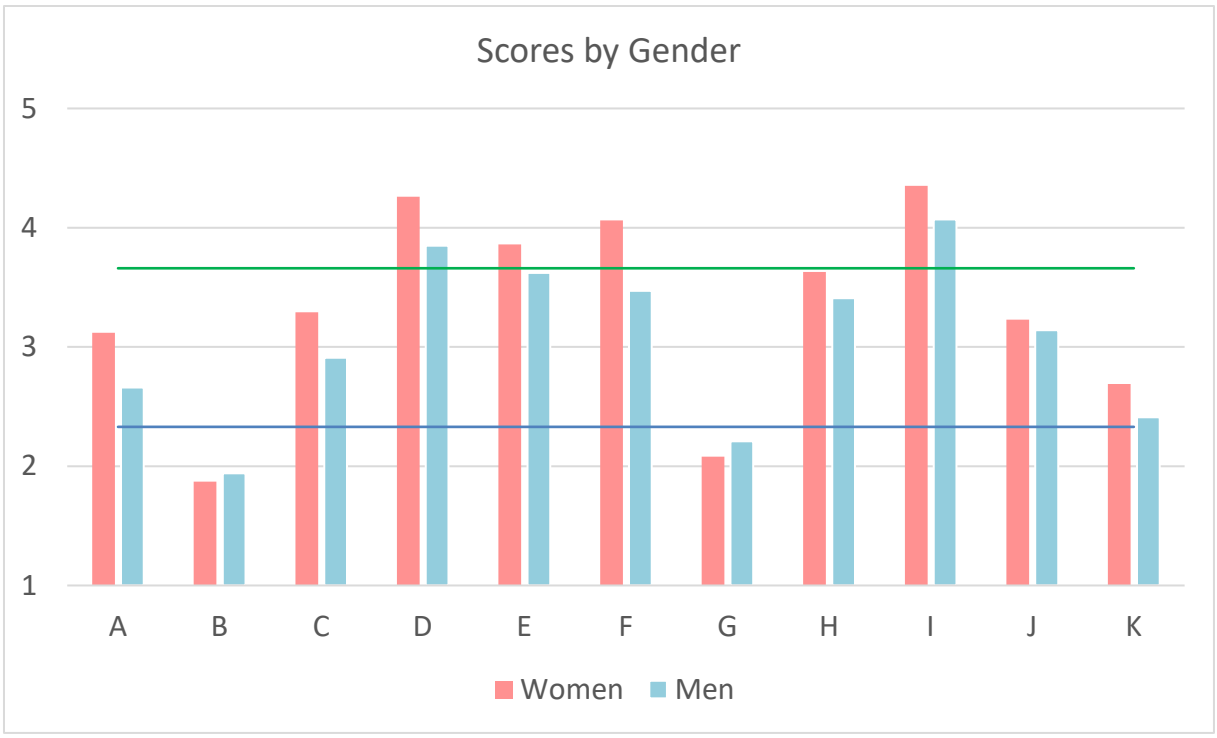

Figure 5. Mean syntactic acceptability judgment score by gender.

4.3 Limitations of the Study

The results discussed above reveal several interesting findings that may be valuable for future research and should be taken into account when examining the mechanisms behind ellipsis. However, considering the lack of a comprehensive statistical breakdown of data, further analysis will be required. In addition, due to the limited scope of this bachelor thesis, the design of the experiment had some necessary restrictions that would be worthwhile to

improve on in follow-up experimentation. Below, I will briefly touch upon two limitations contained within this study.

First, there is the issue of the context (prompt by Person A) in the items. Although context was inserted out of necessity, seeing as the elided targets would be very difficult to judge as acceptable or not without knowing any of the antecedent material, this approach presented two problems. The first one is that of 'naturalness' of the response. When a person poses a question for more information, it is rarely done by repeating the entire sentence exactly but for the added interrogative pronoun (18a). In naturalistic dialogue, it would be more common to use anaphoric pronouns, or partial ellipsis, as in (18b):

(18) a. *Craig fixed the car yesterday afternoon.*
With what did Craig fix the car yesterday afternoon?
b. *Craig fixed the car yesterday afternoon.*
With what did he fix it ~~yesterday afternoon~~?

The question in (18b) may sound more like natural speech, and thus be judged as more acceptable. However, it was important for this experiment to be certain that, where possible, the structure was identical excepting the experimental variables. Therefore, the choice was made to sacrifice some naturalness for the sake of inferring causation more clearly.

The second problem with the context was that some participants may have found the context to be unlikely to begin with. Even though participants were instructed to focus only on the question from Person B, some spillover from Person A's statement may have influenced acceptability scores. This interference may be rectified in future studies by an a priori plausibility check of the stimuli in a separate experiment.

5 Conclusion

This thesis explored the mechanisms of sluicing and swiping by examining the interaction between prepositions, modal particles and ellipsis in order to gain a better awareness of how ellipsis targets constituents. Two current theories were reviewed, the first of ellipsis targeting the entire clause and deleting it at PF level, with any surviving elements extracted by movement operations beforehand, and the second of ellipsis allowing selective targeting within the clause and allowing remnants to remain in situ. In order to test the two theories, an experiment was set up relying on acceptability judgments of Dutch native speakers, who were presented with sentences containing R-pronouns and MPs in elided and non-elided versions.

The experiment was constructed along the following reasoning: if an elided clause with an MP intervening between the R-pronoun elements (condition A) were to be syntactically licensed, and if the MP originated from the ‘wh’ position (condition B) in the unelided clause, it could have been pied-piped as a focus particle together with the *wh*-element. In contrast, if the MP would originate from the ‘mf’ position (condition C), any theory advocating constituent deletion will have to provide several mechanisms to explain partial extraction of the R-pronoun to the left periphery and the subsequent selective constituent deletion of everything surrounding the MP in swiping, leaving the MP itself, as well as the in-situ P-element, seemingly untouched.

To sum up the results, it ultimately seems likely swiping is allowed in Dutch and Flemish, though the preference is not robust. Relying solely on superficial statistics, I can carefully posit that:

- Speakers accept sluicing, even when a modal particle is present, as long as said modal particle is fixed in the middle field in the antecedent;

- Speakers accept sluicing, even with an R-pronoun;
- Speakers have no problems with using both modal particles and R-pronouns in the same clause, as long as the R-pronoun is present as a single unit;
- Speakers are unsure about sweeping: when both a modal particle and a R-pronoun are present and the preposition is stranded and the modal particle in intervening position speakers judge it to be only partially acceptable. This may be influenced by regional language variety.

Therefore, this thesis has some insight to offer to the current debate surrounding sluicing, sweeping and swiping in English and Dutch, if only the finding that a systematic investigation of sweeping in Dutch is both a worthwhile and a necessary endeavour when discussing theories of ellipsis. The data from this pilot study shows that the MP is likely fixed in the middle field, and that pied-piping is unlikely without a theory of exceptional movement allowing the MP to move as well. However, the preference of the P to be fronted along with the *wh*-element of the R-pronoun, instead of letting it be stranded, reveals that Dutch native speakers will sooner opt for pied-piping in ellipsis than stranding, although this holds more for Flemish speakers than for speakers from the Netherlands. Closer examination of this apparent preference, as well as a comprehensive statistical analysis of the data gathered in the acceptability questionnaire, are the next logical steps in future research.

References

Abels, K. (2018). On “sluicing” with apparent massive pied-piping. *Natural Language & Linguistic Theory,* 1-67. doi:10.1007/s11049-018-9432-1

Blondeau, H. (2013). Studying language over time. In R. J. Podesva & D. Sharma (Eds.), *Research methods in linguistics* (pp. 494-518). New York: Cambridge University Press.

van Craenenbroek, J. (2010). *The syntax of ellipsis: evidence from Dutch dialects.* Oxford: Oxford University Press.

Griffiths, J. (2019). A Q-based approach to clausal ellipsis: Deriving the preposition stranding and island sensitivity generalisations without movement. *Glossa: A Journal of General Linguistics*, *4*(1), 1–41. doi:10.5334/gjgl.653

Hoeksema, J. (2014). Sluicing in Dutch: A problem for PF-deletion approaches. *SKASE Journal of Theoretical Linguistics, 11*(2), 30-41.

Hoekstra, J. (1995). Preposition stranding and resumptivity in West Germanic. In H. Haider, S.Olsen, & S. Vikner (Eds.), *Studies in comparative Germanic syntax* (pp. 95-118). Dordrecht: Springer.

Kluck, M. (2015). Merchant’s wrinkle: The ban on Dutch bare R-pronoun ellipsis remnants. In U. Steindl et al. (Eds.), *Proceedings of the 32nd West Coast Conference on formal linguistics* (pp. 248-57). Somerville, MA: Cascadilla Proceedings Project.

Koopman, H. (2000). Prepositions, postpositions, circumpositions, and particles: the structure of Dutch PPs. In H. Koopman (Ed.), *The syntax of specifiers and heads* (pp. 204–260). London: Routledge.

Merchant, J. (2001). *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.

Merchant, J. (2002). Swiping in Germanic. In W. Abraham & C. J. -W. Zwart (Eds.), *Studies in comparative Germanic syntax: Proceedings from the 15th workshop on comparative Germanic syntax* (pp. 289-315). Amsterdam: John Benjamins.

Ott, D., & Struckmeier, V. (2018). Particles and deletion. *Linguistic Inquiry*, *49*(2), 393-407.

Pullum, G., & Huddleston, R. (2002). Prepositions and preposition phrases. In R. Huddleston & G. Pullum (Eds.), *The Cambridge grammar of the English language* (pp. 597-662). Cambridge: Cambridge University Press. doi:10.1017/9781316423530.008

Poole, G. (2011). *Syntactic theory* (2nd ed.). London: Palgrave Macmillian.

Qualtrics (Version April-May 2019) [Computer software]. Provo, UT, USA. Retrieved from: https://www.qualtrics.com/

Radford, A., & Iwasaki, E. (2015). On swiping in English. *Natural Language & Linguistic Theory*, *33*(2), 703-744.

Van Riemsdijk, H. (1978). *A case-study in syntactic markedness: the binding nature of prepositional phrases*. Lisse: Peter de Ridder Press.

Ross, J. R. (1969). Guess who?. In Robert I. Binnick, Alice Davison, Georgia M. Green & Jerry L. Morgan (Eds.), *Proceedings of the Fifth Regional Meeting of the Chicago Linguistic Society* (pp. 252–286). Chicago, IL: Chicago Linguistic Society, University of Chicago.

Schütze, C. T. (2016). *The empirical base of linguistics*: *Grammaticality judgments and linguistic methodology* (Classics in Linguistics 2). Berlin: Language Science Press.

Schütze, C. T., & Sprouse, J. (2013). Judgment data. In R. J. Podesva & D. Sharma (Eds.), *Research methods in linguistics* (pp. 27-50). New York: Cambridge University Press.

Temmerman, T. (2019). *When the sluice is not alone: On the syntax of WH + non-WH sluicing in Dutch* [PDF document]. Presented at the Sluicing+ @50 Conference, 12-13 April 2019, Chicago, IL.

Zwart, J.-W. (2011). *The syntax of Dutch*. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511977763

Zwarts, J. (1997). Complex prepositions and P-stranding in Dutch. *Linguistics: An Interdisciplinary Journal of the Language Sciences, 35*(6), 1091-1112.

Appendix A

Latin Square Design

The eleven structures present in the experiment, together with the six lexical variations of each structure, resulted in 66 different questions. Seeing as this is too great an amount for any one participant to answer, a six-way Latin Square design was employed to distribute the questions evenly across every group of six participants. Besides the syntactic structure variation, there was also lexical variation in both R-pronoun and modal particle across the structures. Three different R-pronouns were used: 1) *waarmee*, 2) *waarover*, and 3) *waarvoor*. For the modal particle, two variations were used: *dan* (base) and *wel* (prime).

The distribution of the questions across participants can be found in Figure A1. The accompanying stimuli to each Latin Square code can be found Appendix B below.

		Conditions										
		A	B	C	D	E	F	G	H	I	J	K
Participant	1	A1	B2	C3	D1	E2	F3	G1	H2	I3	J1	K2
		A2'	B3'	C1'	D2'	E3'	F1'	G2'	H3'	I1'	J2'	K3'
									H1	I2'	J3	K1'
	2	A2	B3	C1	D2	E3	F1	G2	H3	I1	J2	K3
		A3'	B1'	C2'	D3'	E1'	F2'	G3'	H1'	I2'	J3'	K1'
									H2'	I3	J1'	K2
	3	A3	B1	C2	D3	E1	F2	G3	H1	I2	J3	K1
		A1'	B2'	C3'	D1'	E2'	F3'	G1'	H2'	I3'	J1'	K2'
									H3	I1'	J2	K3'
	4	A1'	B2'	C3'	D1'	E2'	F3'	G1'	H2'	I3'	J1'	K2'
		A2	B3	C1	D2	E3	F1	G2	H3	I1	J2	K3
									H1'	I2	J3'	K1
	5	A2'	B3'	C1'	D2'	E3'	F1'	G2'	H3'	I1'	J2'	K3'
		A3	B1	C2	D3	E1	F2	G3	H1	I2	J3	K1
									H2	I3'	J1	K2'
	6	A3'	B1'	C2'	D3'	E1'	F2'	G3'	H1'	I2'	J3'	K1'
		A1	B2	C3	D1	E2	F3	G1	H2	I3	J1	K2
									H3'	I1	J2'	K3

Figure A1. Schematic overview of the Latin Square design.

Appendix B

List of Stimuli

This appendix provides the complete list of stimuli used across the experiment, distributed according to the Latin Square design discussed above in Appendix B. Note that the Person A sentence was often held constant across the similar conditions (with and without ellipsis) to make sure that no contextual information could interfere in the acceptability judgment task.

A1	Ze hebben mijn fiets eindelijk kunnen maken! Waar dan mee?
A1'	Je mag het examen niet invullen met een balpen. Waar wel mee?
A2	Ik ben mijn scriptie aan het schrijven Waar dan over?
A2'	Het moeilijke gesprek met mijn vriend ging gelukkig niet over onze relatie. Waar wel over?
A3	Mijn moeder gebruikt haar azijn niet om te koken. Waar dan voor?
A3'	Wist je dat insecten hun mond niet moeten gebruiken om adem te halen? Waar wel voor?
B1	Ze hebben mijn fiets eindelijk kunnen maken! Waar dan hebben ze je fiets mee kunnen maken?
B1'	Je mag het examen niet invullen met een balpen. Waar wel mag je het examen mee invullen?
B2	Ik ben mijn scriptie aan het schrijven Waar dan ben je je scriptie over aan het schrijven?
B2'	Het moeilijke gesprek met mijn vriend ging gelukkig niet over onze relatie. Waar wel ging het moeilijk gesprek met je vriend over?
B3	Mijn moeder gebruikt haar azijn niet om te koken. Waar dan gebruikt jouw moeder haar azijn voor?
B3'	Wist je dat insecten hun mond niet moeten gebruiken om adem te halen? Waar wel gebruiken insecten hun mond voor?
C1	Ze hebben mijn fiets eindelijk gemaakt! Waar hebben ze dan je fiets mee kunnen maken?
C1'	Je mag het examen niet invullen met een balpen. Waar mag je wel het examen mee invullen?
C2	Ik ben mijn scriptie aan het schrijven Waar ben je dan je scriptie over aan het schrijven?

C2'	Het moeilijke gesprek met mijn vriend ging gelukkig niet over onze relatie.
	Waar ging wel het moeilijk gesprek met je vriend over?
C3	Mijn moeder gebruikt haar azijn niet om te koken.
	Waar gebruikt jouw moeder dan haar azijn voor?
C3'	Wist je dat insecten hun mond niet moeten gebruiken om adem te halen?
	Waar gebruiken insecten wel hun mond voor?
D1	Ik heb de vlek uit mijn trui gekregen.
	Waarmee dan?
D1'	Ik ga nooit op reis met de auto.
	Waarmee wel?
D2	Stephen King heeft een nieuw boek geschreven!
	Waarover dan?
D2'	Ik wil het niet meer hebben over deze kwestie.
	Waarover wel?
D3	Mijn vriendin heeft de eerste prijs gewonnen!
	Waarvoor dan?
D3'	Ik gebruik nooit mijn Italiaanse kruiden voor visgerechten.
	Waarvoor wel?
E1	Ik heb de vlek uit mijn trui gekregen.
	Waarmee heb je dan de vlek uit je trui gekregen?
E1'	Ik ga nooit op reis met de auto.
	Waarmee ga je wel op reis?
E2	Stephen King heeft een nieuw boek geschreven!
	Waarover heeft Stephen King dan een nieuw boek geschreven?
E2'	Ik wil het niet meer hebben over deze kwestie.
	Waarover wil je het wel hebben?
E3	Mijn vriendin heeft de eerste prijs gewonnen!
	Waarvoor heeft je vriendin dan de eerste prijs gewonnen?
E3'	Ik gebruik nooit mijn Italiaanse kruiden voor visgerechten.
	Waarvoor gebruik je wel je Italiaanse kruiden?
F1	Ik heb al veel exotische bloemen gezien.
	Waar dan?
F1'	Ik ben nog niet in een Kruidvat winkel geweest om shampoo te kopen.
	Waar wel?
F2	Er is een nieuwe persoon naast ons komen wonen.
	Wie dan?
F2'	Sonja heeft niet geantwoord op de uitnodiging?
	Wie wel?
F3	De kat zat vanochtend in de tuin, hoewel ik alles op slot doe!
	Hoe dan?
F3'	Ik ga niet langs de drukke stadsring rijden.
	Hoe wel?
G1	Ik heb al veel exotische bloemen gezien.
	Waar dan heb je al veel exotische bloemen gezien?

G1'	Ik ben nog niet in een Kruidvat winkel geweest om shampoo te kopen.
	Waar wel ben je geweest om shampoo te kopen.
G2	Er is een nieuwe persoon naast ons komen wonen.
	Wie dan is er naast jullie komen wonen?
G2'	Sonja heeft niet geantwoord op de uitnodiging?
	Wie wel heeft geantwoord op de uitnodiging?
G3	De kat zat vanochtend in de tuin, hoewel ik alles op slot doe!
	Hoe dan zat je kat vanochtend in de tuin
G3'	Ik ga niet langs de drukke stadsring rijden.
	Hoe wel ga je rijden?
H1	Ik heb al veel exotische bloemen gezien.
	Waar heb je dan al veel exotische bloemen gezien?
H1'	Ik ben nog niet in een Kruidvat winkel geweest om shampoo te kopen.
	Waar ben je wel geweest om shampoo te kopen?
H2	Er is een nieuwe persoon naast ons komen wonen.
	Wie is er dan naast jullie komen wonen?
H2'	Sonja heeft niet geantwoord op de uitnodiging?
	Wie heeft wel geantwoord op de uitnodiging?
H3	De kat zat vanochtend in de tuin, hoewel ik alles op slot doe!
	Hoe zat je kat dan vanochtend in de tuin?
H3'	Ik ga niet langs de drukke stadsring rijden.
	Hoe ga je wel rijden?
I1	Ik denk dat ik weet met wat ik wil beginnen!
	Waarmee?
I1'	Het eten wordt op de dag van de picknick naar de weide gebracht.
	Waarmee?
I2	Er is een belangrijke persconferentie vanavond.
	Waarover?
I2'	Mijn zoontje heeft een heel leuk verhaaltje geschreven!
	Waarover?
I3	Mijn vader zal deelnemen aan een examen.
	Waarvoor?
I3'	Theo gaat een nieuwe stunt inoefenen.
	Waarvoor?
J1	Ik denk dat ik weet met wat ik wil beginnen!
	Waarmee denk je dat je wilt beginnen?
J1'	Het eten wordt op de dag van de picknick naar de weide gebracht.
	Waarmee wordt het eten op de dag van de picknick naar de weide gebracht?
J2	Er is een belangrijke persconferentie vanavond.
	Waarover is de belangrijke persconferentie vanavond?
J2'	Mijn zoontje heeft een heel leuk verhaaltje geschreven!
	Waarover heeft je zoontje een heel leuk verhaaltje geschreven?
J3	Mijn vader zal deelnemen aan een examen.
	Waarvoor zal je vader deelnemen aan een examen?

J3'	Theo gaat een nieuwe stunt inoefenen.
	Waarvoor gaat Theo een nieuwe stunt uitoefenen? [2]
K1	Ik denk dat ik weet met wat ik wil beginnen!
	Waar denk je dat je mee wilt beginnen?
K1'	Het eten wordt op de dag van de picknick naar de weide gebracht.
	Waar wordt het eten op de dag van de picknick mee naar de weide gebracht?
K2	Er is een belangrijke persconferentie vanavond.
	Waar is de belangrijke persconferentie over vanavond?
K2'	Mijn zoontje heeft een heel leuk verhaaltje geschreven!
	Waar heeft je zoontje een heel leuk verhaaltje over geschreven?
K3	Mijn vader zal deelnemen aan een examen.
	Waar zal je vader voor deelnemen aan een examen?
K3'	Theo gaat een nieuwe stunt inoefenen.
	Waar gaat Theo een nieuwe stunt voor uitoefenen?

[2] A minor mistake on my part was noted by a participant in the correspondence between the context prompt and the reply in J3', as well as in K3': ***in****oefenen* vs. ***uit****oefenen*. However, since the questionnaire was already live, no correction could be made. Thus, the stimuli are displayed here as shown in the questionnaire.