

Learning a second language: the availability of Universal Grammar

A pilot study on the L2 acquisition of Dutch word
order by Icelanders



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Abstract

Children learning Dutch as their first language do not seem to have problems with the verb-final character of Dutch subordinate clauses as they use it correctly from the beginning (e.g. Klein, 1974). Adults learning Dutch as a second language tend to assume that the language has an SVO order and only modify this as they become more advanced (e.g. Jordens, 1988). Dutch is traditionally assumed to be an SOV language, but this is not uncontroversial. A key question in the matter of second language acquisition is whether or not the adult second language learners have access to UG. In this paper it will be argued that adult L2 learners do not have access to UG, but rely on their general linguistic knowledge and their knowledge of secondary rules in languages that they have *learned* instead of *acquired* (Krashen, 1981). This will be illustrated by the experiment conducted for this paper, which tests the usage of verb positions in Dutch subordinate clauses by Icelandic adult second language learners of Dutch.

1. Introduction

According to many foreign second language learners of Dutch, the word order is one of the hardest parts to learn about Dutch¹. It is a common feature of the Germanic languages that the subject occurs in the initial position in main clauses, followed by the finite verb. This is true for Dutch as well. However, while in matrix clauses the verb is placed in the second position of the sentence, in subordinate clauses it comes at the end. German and Dutch are similar in this respect. When an auxiliary verb is present, such as an aspectual auxiliary like *hebben* ('to have') or a modal auxiliary like *willen* ('to want'), all of these verbs are clustered at the end of the subordinate clause. Examples of this are shown below.

- | | | |
|--------|--|---------------------------------------|
| (1) a. | <i>Jan koopt een boek</i>
'Jan buys a book' | SVO
(subject-verb-object) |
| b. | <i>Jan heeft een boek gekocht</i>
'Jan has a book bought'
'Jan has bought a book' | SAOV
(subject-asp.aux-object-verb) |
| c. | <i>Ik weet dat Jan een boek koopt</i>
I know that Jan a book buys
'I know that Jan buys a book' | SOV
(subject-object-verb) |
| d. | <i>Ik weet dat Jan een boek heeft gekocht</i> ²
I know that Jan a book has bought
'I know that Jan has bought a book' | SOAV
(subject-object-asp.aux-verb) |
| e. | <i>Ik weet dat Jan een boek zou hebben willen kopen</i>
I know that Jan a book would have want buy
'I know that Jan would have wanted to buy a book' | SOVc
(subject-object-verb.cluster) |

Icelandic, another Germanic language, also has the finite verb in second position in sentences. However, in Icelandic, the verb is always in the second position of the sentence, in both main clauses and subordinate clauses. The Icelandic equivalents of the Dutch sentences in (1) are shown in (2) below.

¹ This information is acquired through personal communication with second language learners of Dutch with different linguistic backgrounds.

² Dutch has two possible word orders for the auxiliary verb and the main verb, namely AV and VA. The same counts for MV and VM. However, when the VA and VM types are used, it tends to sound more German-like, because in German, this is the only grammatical variety. The VA and VM word orders occurred frequently in the elicited production tasks in this experiment. This is not included in the results, since both varieties are grammatical in Dutch.

- (2) a. *Jón kaupir bók* SVO
 Jón buys book
 'Jón buys a book' (subject-verb-object)
- b. *Jón hefur keypt bók* SAVO
 Jón has bought book
 'Jón has bought a book' (subject-asp.aux-verb-object)
- c. *Ég veit að Jón kaupir bók* SVO
 I know that Jón buys book
 'I know that Jón buys a book' (subject-verb-object)
- d. *Ég veit að Jón hefur keypt bók* SAVO
 I know that Jón has bought book
 'I know that Jón has bought a book' (subject-asp.aux-verb-object)
- e. *Ég veit að Jón mundi vilja hafa keypt bók* SMMAVO
 I know that Jón would want have bought book
 'I know that Jón would have wanted to buy a book' (subject-modal-modal-asp.aux-verb-object)³

This forms a contrast with the Dutch word order in subordinate clauses, and might pose a problem for Icelandic second language learners of Dutch. The following examples show the manner in which Dutch places negation.

- (3) a. *Jan koopt het boek niet* SVON
 Jan buys the book not
 'Jan doesn't buy the book' (subject-verb-object-negation)
- b. *Jan heeft het boek niet gekocht* SAONV
 Jan has the book not bought
 'Jan hasn't bought the book' (subject-asp.aux-object-negation-verb)
- c. *Ik weet dat Jan het boek niet koopt* SONV
 I know that Jan the book not buys
 'I know that Jan doesn't buy the book' (subject-object-negation-verb)
- d. *Ik weet dat Jan het boek niet heeft gekocht* SONAV
 I know that Jan the book not has bought
 'I know that Jan hasn't bought the book' (subject-object-negation-asp.aux-verb)

Now consider the examples in (4), in which the Icelandic equivalents of (3) are presented.

- (4) a. *Jón kaupir ekki bókina* SVNO
 Jón buys not book-the
 'Jón doesn't buy the book' (subject-verb-negation-object)
- b. *Jón hefur ekki keypt bókina* SANVO
 Jón has not bought book-the
 'Jón hasn't bought the book' (subject-asp.aux-negation-verb-object)
- c. *Ég veit að Jón kaupir ekki bókina* SVNO
 I know that Jón buys not book-the
 'I know that Jón doesn't buy the book' (subject-verb-negation-object)
- d. *Ég veit að Jón hefur ekki keypt bókina* SANVO
 I know that Jón has not bought book-the
 'I know that Jón hasn't bought the book' (subject-asp.aux-negation-verb-object)

³ Icelandic is generally not assumed to have verb clusters, as opposed to German and Dutch. For a more detailed description of this property, see Haider (2005), who assumes that verbs in Icelandic are stacked rather than clustered.

Notice how in Icelandic the negation can be placed in between the auxiliary verb and the main verb, while in Dutch the two verbs form a cluster.

In this thesis, an experiment will be conducted to try to shed some light on the problems Icelandic second language learners of Dutch may run into concerning the word order in subordinate clauses. The participants in this experiment will be interviewed, and they will go through a series of tests. The participants' knowledge and use of word order in Dutch subordinate clauses will be pre-tested and modelled in sentences without negation, and tested in sentences with negation.

This thesis is constructed as follows. First, a theoretical background will be sketched, on (Dutch) clause structure, (second) language acquisition and the critical period. In the second chapter, the experiment will be discussed. This section will be followed by a chapter in which the participants as well as the design and methods of the experiment will be elaborated on. Then the results of the experiment will be discussed, and finally, some conclusions will be drawn from the results.

The forthcoming paragraphs will discuss some literature on clause structure and language acquisition.

1.1 SVO vs. SOV

Icelandic is uncontroversially considered an SVO language, while Dutch is traditionally seen as an SOV language. This property of Dutch is, however, not uncontroversial. Koster (1975) argues that Dutch is SOV. He claims that the word order in embedded clauses is the underlying word order of Dutch, and that the SVO word order in main clauses is derived from the underlying SOV word order by a rule which fronts the finite verb. This has been the traditional point of view for a long time.

Zwart (1997) proposes a different view on this issue. Instead of saying that Dutch is a head-final language, Zwart argues that it should rather be analysed as a head-initial language, following Kayne (1992), who started the discussion about whether superficially head final languages might not in fact be head-initial. Zwart gives several arguments as to why Dutch should be seen as head-initial. He states that there are two properties that languages either have or not have, namely verb movement and object movement. Zwart argues that there is no need for a separate OV/VO parameter to distinguish the properties of the Germanic languages. The following tables, which are adapted from Zwart (1997:88-89), show which properties each of these Germanic languages have.

	verb movement	object movement
English	-	-
Dutch-main	+	+
Dutch-embedded	-	+
Swedish-main	+	-
Swedish-embedded	-	-
Icelandic	+	+

Table 1. Verb movement and object movement in Germanic languages.

	word order
English	VO
Dutch-main	VO
Dutch-embedded	OV
Swedish-main	VO
Swedish-embedded	VO
Icelandic	VO

Table 2. Word order in Germanic languages.

From a minimalist point of view, the notions OV and VO are rather abstract. Therefore, Zwart proposes the following derivation:

- (5) a. If a sentence is [+ verb movement], its word order is VO.
 b. If a sentence is [- verb movement], then
 (i) if it is [+ object movement], its word order is OV, and
 (ii) if it is [- object movement], its word order is VO.

It follows that the OV character of the embedded clauses in Dutch is contingent on whether or not there is object movement. Zwart notes that this conclusion can only be drawn if object movement is taken to be obligatory, because following the minimalist program, this movement is triggered by a morphological feature checking requirement. Later in his book, he gives examples of object movement in Icelandic, given in (6) below.

- (6) a. ... að Jón keypti ekki bókina
 ... that Jón bought not book-the
 "... that Jón didn't buy the book"
 b. ... að Jón keypti bókina ekki
 ... that Jón bought book-the not
 "... that Jón didn't buy the book"

In these examples, the object appears both to the left and to the right of the negation element, suggesting optional movement of the object out of the VP, which would not be possible in the current minimalist view, or otherwise suggesting that the placement of the negation has some freedom. Zwart obviously assumes that this last option is correct.⁴

Zwart argues that it is rather odd that all projections with a lexicalized head in Dutch are head-initial, except for the VP. He mentions for instance DPs like *bet boek*, 'the book', which are obviously head-initial. Then, he argues that object and Small Clause predicates in embedded clauses are in derived positions, because they have to move out of the VP to check features in a higher position. This would imply the possibility for the VP to be head-initial, thus that Dutch would only have head-initial projections.

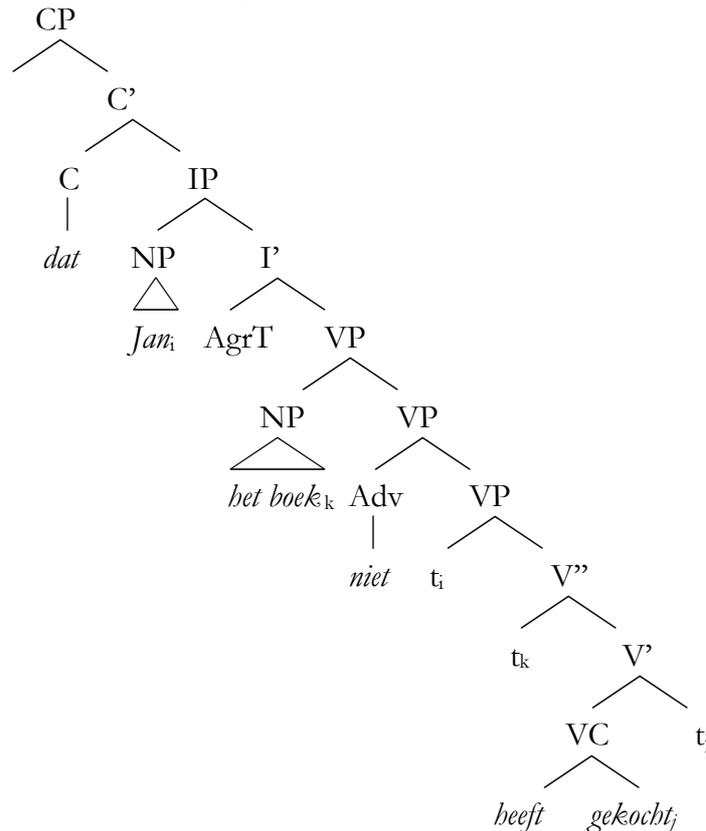
The controversy on whether Dutch is head-final or head-initial yields an interesting discussion and has been a popular topic of investigation for quite some years. For this study, however, it does not seem to be relevant, because the acquisitional problem for Icelandic second language learners of Dutch remains the placement of the verb in subordinate clauses.

⁴ Two native speakers of Icelandic (p.c.) notice a difference in meaning between the sentences in (6). They find that the second sentence is more marked than the first sentence, and that in (6b), it seems strange and unexpected that Jón has not bought the book, while in (6a), Jón just did not buy the book.

From both the traditional (i.e. Koster 1975) as well as the minimalist point of view (i.e. Zwart 1997), the verb in subordinate clauses does not move from its base position, and that is exactly the grammatical feature of Dutch that second language learners need to learn/acquire to produce grammatical Dutch sentences.

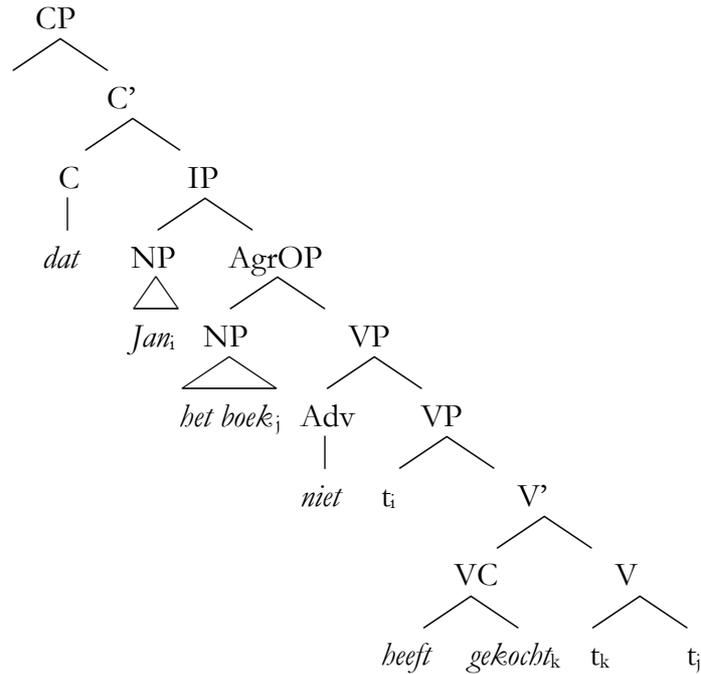
For the sake of clarity and completeness, the tree structures of the Dutch and Icelandic sentences in (3d) and (4d) are shown below in (5)-(7). Both the traditional OV analysis and Zwart's VO analysis are shown for the Dutch sentence.

(7) Traditional OV analysis of a Dutch subordinate clause



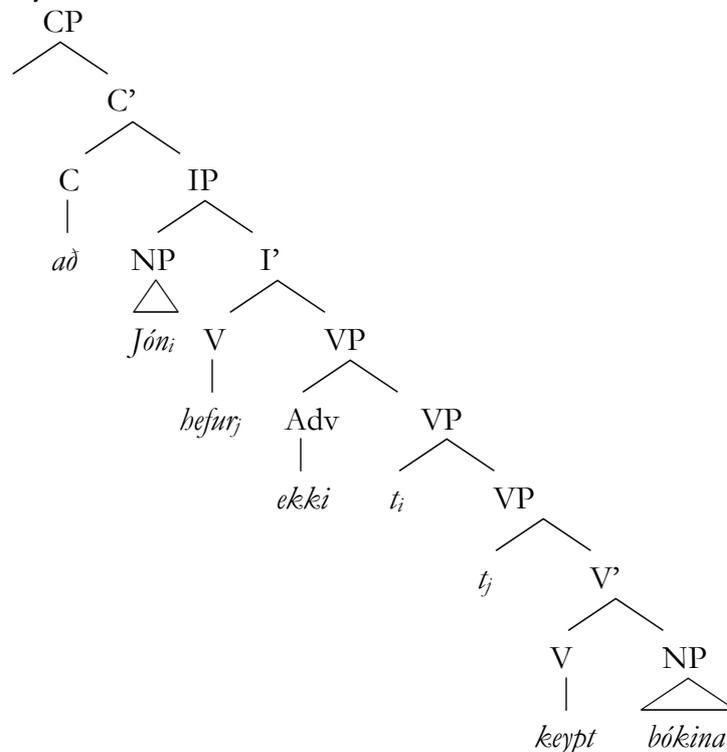
In the traditional analysis, the finite verb undergoes V to I to C movement in matrix clauses so that it ends up in the right position for the surface sentence. In embedded clauses, however, the verb remains in V, because in Dutch, like in German, an overt complementizer (*dat*) fills the C position and the I position is governed by C. C then cancels the strength of the inflections in I and allows the verb to remain in its base position, while the agreement/tense (AgrT) inflection lowers to V. The verb *gekocht* then undergoes Verb Raising and adjoins to the right of the auxiliary *heeft* to form a verb cluster. The object *het boek* scrambles upwards to a position left of the adverb (cf. Bouma, 2003). The tree structure for a sentence without negation would be similar to the one in (5), only without the second VP node containing the adverb *niet*.

(8) Zwart's VO analysis of a Dutch subordinate clause



The tree in (8) shows an underlying VO order in a Dutch embedded clause as proposed by Zwart (1997). The object *het boek* scrambles upwards to check its features in AgrOP and is thus in a derived position, as Zwart argues. This upward movement is obligatory in minimalism, because the object has to check with a strong N-feature, which is otherwise uninterpretable and causes the derivation to crash (see Zwart 1997:100).

(9) Analysis of an Icelandic subordinate clause



As has been shown before, matrix clauses in Icelandic have the same word order as subordinate clauses (see for instance Thráinsson 2007:42-45). In (9) it can be seen that the finite verb moves to I to get its inflection and the right position for the surface structure. The gap between the auxiliary verb and the main verb can be seen in a clear contrast to the verb cluster in the Dutch tree structure. A sentence without negation can be extracted from this tree structure by removing the node which contains the negation *ekki*.

By examining whether the participants place the negation correctly, it will hopefully become clearer whether they have access to the Universal Grammar or whether they use their own self-constructed rules. If the participants move the finite verb in subordinate clauses up from V to I, which happens in Icelandic but not in Dutch, they will get a different and ungrammatical output sentence. This would be considered negative transfer from Icelandic to Dutch. The participants will not be shown the correct placement of the negation, so if UG is available to them, the modelling and elicited production tests will work as a trigger to reset the parameter. From the traditional point of view, the participants have to know that in Dutch subordinate clauses, C is in the position to govern I and thereby cancels the strength of its features. However, from the minimalist point of view, the participants have to know that there is no verb movement in subordinate clauses, so that the verb remains in its base position.

When they learn/acquire this, there are two theoretical options to predict the possible consequences. Following the Economy Principle in the UG Accessibility Theory (White, 1989), the second language learners will now consistently leave the verb alone in embedded clauses and will place the negation correctly as well. However, in the Fundamental Difference Hypothesis (Bley-Vroman, 1990) second language learners will have learned how to handle sentences without negation, but not sentences with negation. They will have to create a new rule for this type of sentence, and they can still make mistakes in placing the verb or the negation in negated sentences. The aim of this thesis is to find evidence to support the hypothesis that second language learners do not have access to the Universal Grammar.

1.2 L1 vs. L2

In studies on language acquisition, much has been written about the similarities between the acquisition of a first language by children and of a second language by adults. It has been argued that the same learning strategies and operating principles are responsible for both types of acquisition, but that the differences in rate, manner and level of attainment are accounted for by cognitive, affective and social factors (McLaughlin, 1978). In studies on L1 acquisition, it is often assumed that children have access to UG. Some authors have argued that L2 learners also have access to UG, as they found evidence for the assumption that L2 learners have resource to fundamental UG notions, for example the Complex Noun Phrase Constraint, from the beginning. This was for instance discovered by letting French L2 learners of English take part in a grammaticality judgement task (White, 1988). The participants were particularly sensitive to errors due to violations of this constraint. Similar results occurred in a grammaticality judgement test of German L2 learners of English (Felix, 1988). Felix argues that this sensitivity can only be accounted for by the access that L2 learners have to UG principles and not by explicit instruction. The L2 learners are unable to discover some of the rules of the language purely on the basis of input, since this does not provide all information they need. This is called the 'logical problem of acquisition' (White, 1989). It is assumed that the solution to this problem is that UG guides children in the process of first language acquisition. However, if one assumes that adult second language

learners do not have access to UG, it seems logical that they have to rely on other sources of information, like their general cognition (White, 1989).

In contrast to the similarities found in both types of acquisition, it is also often argued that the nature of L1 and L2 acquisition is different. Clahsen and Muysken (1989) present us with a paradox. On the one hand, there are the similarities between L1 and L2 acquisition mentioned above, and on the other hand clear differences between the development of L1 and L2 acquisition can be perceived, evidence of which may be found in the acquisition of word order and negation in German (Clahsen & Muysken, 1986). Clahsen and Muysken attribute this to the fact that L1 learners make more abstract analyses than L2 learners, who rely more on surface strategies. They use this evidence to claim that L2 learners do not have access to grammatical principles of UG. According to Clahsen and Muysken, all that L2 learners have is full knowledge of the properties of L1, including more general properties. This would explain why L2 learners hardly ever attain fully native competence. Their general cognition of language may help the L2 learner in shaping the L2. It explains why there is a certain sequence in the development of L2, because the learners may acquire rules that are more universal than others before acquiring more language specific rules. This might explain why it seems as though L2 learners have access to UG, while they are in fact only applying general cognition in their L2.

But what is the difference between having access to UG and the usage of general cognition? Adults have already acquired a natural language, their L1, and they can therefore be expected to have intuitions about what is linguistically possible in L2 and what is not (Jordens, 1988). This differs from the way children acquire their first language, because they are guided by UG when setting the parameters in the correct positions; they do not have any prior general cognition of any language. More recent research by Clahsen & Felser (2006) has shown that L2 learners are guided by the same lexical-semantic cues as native speakers, meaning that they are able to acquire native-like proficiency in these fields, but not so much by syntactic cues. Clahsen & Felser suggest that, given the data they acquired in their research, the differences between L1 and L2 can be explained by assuming that the syntactic representations non-native speakers compute during comprehension are shallower and less detailed than those of native speakers. Clahsen & Felser call this the *shallow surface hypothesis*. To summarize, Clahsen & Felser thus argue that both native and non-native speakers of a language use UG for lexical-semantic representations, but only native speakers have access to UG for syntactic representations. Non-native speakers have to rely on shallow surface rules for syntactic representations, acquired by general cognition.

1.3 Critical period

The two points of view sketched above have been discussed quite extensively in the literature. Another relevant aspect in this discussion is the importance of age in second language acquisition. Where should the border be drawn between L1 and L2 acquisition? In the first few years of life, children are capable of acquiring full competence in a language. If the child is not provided with language input in this critical period, it will never achieve a full command of language. This can be illustrated by the case of Genie, the 13 year old girl who was discovered after being neglected and was unable to talk when she was found (Curtiss, 1977). This shows that there must be a critical period for learning a first language, because Genie was unable to acquire the English language after she was found. In the literature on this topic, many older L2 learners seem to be unable to acquire a native-like competence of a

language, even after long exposure, so the critical period seems to affect the ability to construct a mental grammar.

Penfield and Roberts (1959) argued that the language input should be provided in the first ten years of life, when the brain retains its plasticity. Lenneberg (1967) developed this idea into the theory of the critical period for language acquisition. He suggested that the first language should be acquired before puberty, that is, before the brain has lost its plasticity. After this, it is only possible to learn a language in a physiologically different and more difficult way. Several researchers, such as Scovel (1988) and Long (1990) have presented evidence to suggest that the critical period for acquiring a native-like pronunciation is respectively 12 and 6 years. It is clear that the age question has been a popular topic of research, but it remains controversial.

2. The experiment

2.1 Participants

The experiment has been conducted on ten participants.⁵ The participants in this experiment are Icelandic by origin and have Icelandic as their mother tongue, but have moved to the Netherlands and are learning or have learned the Dutch language at an adult age. There are no other criteria the participants have to fulfil. All participants have only Icelandic relatives. Most participants moved to the Netherlands for studies and already had some basic knowledge of German before settling in the Netherlands. This knowledge of German might be relevant for the experiment, since German uses the same linguistic principles for word order in subordinate clauses. The dominant language spoken at home is Icelandic in seven cases, Dutch in two cases and English in one case. Both males and females participated in the experiment, and the age of the participants varies between 24 and 47 years. The starting age of the second language learning process varies between 23 and 35 years. The participants can be divided into two groups, one containing the Icelanders that have been living in the Netherlands for a shorter period of time, namely between 1-4 years, and the others for a longer period, varying from 7-13 years. The results of the experiment, however, do not always show a correlation between the number of years spent in the Netherlands and the proficiency of Dutch. Three participants had spent some time in an English speaking country before moving to the Netherlands, varying from 1-6 years. Two participants have lived in Germany; one of them spent 9 months in Germany and the other 11 years. One participant has lived in South Africa for 10 years, but spoke only English. All participants were asked to indicate their proficiency in Dutch before the experiment was run, and the results varied between fair and good.

2.2 Design

The experiment has a within-subjects design and consists of several components. All components of the experiment were carried out on individual participants. First, the participants were asked to fill out a form with biographical information. Before the start of each part of the experiment, the participants were given some time to read the instructions for that particular task. The language of instruction (both written and spoken) was Dutch.⁶ The first component of the experiment is a grammaticality judgement task, in which the

⁵ Because the target group is rather small and not easily approachable, it was not possible to find more than ten participants within the time limits of this experiment.

⁶ A copy of the instructions translated in English is attached in part 4 of the appendix.

participants have to judge sentences as either grammatical or ungrammatical. The next component consists of a modelling treatment and elicited production with feedback. The third and last part is a test with both oral and written elicited production. Further on in this chapter, the exact research methods will be discussed in more detail. First, some more general properties of the experiment design will be reviewed.

The grammaticality judgement task in this experiment is slightly different from regular grammaticality judgement tasks: the participants are presented with an audio recording of the sentences rather than having to read the sentences themselves. Murphy (1997) compared these two types of grammaticality judgement tasks, and found out that L2 learners have significantly more problems in judging the sentences when provided aurally, because they have less time to process them. They can not read the sentences over again, which would be the case if the grammaticality judgement task was in a written form, and since the auditory signal fades rapidly, the participants have to respond immediately. This method was chosen to make sure that the participants would rely on their first impression of the sentences.

The design used in the latter parts of this experiment is similar to the design used by Herron & Tomasello (1988). They tested two types of teaching methods for second language teaching, namely a modelling and a feedback method in elicited production tasks. In the feedback method, the participants were not provided with the correct answer when making a mistake, but were guided through a self-correction process, in which the researcher gave clues as to what the participant should change in his or her answer. In the modelling method, however, the correct production was given when a participant made a mistake. For the experiment conducted in this paper, the modelling method has been used, because in this way, the participants have to depend on the grammatical rules that they have constructed themselves, instead of rules that are partly constructed or modelled by others. This research method supplied Herron and Tomasello with interesting results, and they showed that this method even worked on a short term. Considering these facts and given the time constraints for this research project, there is no need for a longitudinal study, even though both methods logically have their advantages and disadvantages.⁷

Part one: The grammaticality judgement task

In the first test, the participants are aurally presented with a number of isolated sentences (see appendix 1⁸): 50 pre-recorded sentences are played for the participants, with an interval of approximately two seconds. Half of the sentences are grammatical, the other half are ungrammatical. Ten of the sentences are fillers, which means that 40 sentences have a subordinate clause (either correctly or incorrectly used) and 10 do not. All filler sentences are grammatical. The participants are allowed some time to read the instructions of the grammaticality judgement task, in which they are instructed to mark their answers in the table on their answer sheet. They are also warned about the fact that they only get to hear the sentences once and that the intervals between the sentences are short.

The task starts with three example sentences that are not included in the results. In this way, the participants can get used to the voice of the speaker, the method for answering and the speed at which the sentences are presented. Then the participants were informed that the actual experiment would start. The participants have to judge the sentences immediately,

⁷ For a further discussion of this research method, see Herron & Tomasello (1988).

⁸ In the appendix, the sentences are sorted per type. For the experiment, however, all sentences were put in a random order. This counts for all sentence lists in the appendices.

since they will hear the sentences only once. There are four types of sentences in this task, examples of which can be seen below, namely sentences with one verb (10), sentences with an aspectual auxiliary verb (11), with a modal auxiliary verb (12) and filler sentences (13). An asterisk indicates the ungrammaticality of the sentence / word order. The number between brackets indicates the amount of sentences of this type used in the test.

- (10) a. *Annie ziet dat Jan een boek koopt* (5) SOV
 Annie sees that Jan a book buys (subject-object-verb)
 ‘Annie sees that Jan buys a book’
 b. **Klaas ziet dat Els leest een boek* (5) *SVO
 ‘Klaas sees that Els reads a book’ (subject-verb-object)

The ungrammatical Dutch sentence in (10b) has the word order that is grammatical in Icelandic, SVO. If the participants show signs of transfer, they are likely to accept these sentences in the grammaticality judgement task.

- (11) a. *Klaas weet dat Jan veel foto’s heeft gemaakt* (5) SOAV
 Klaas knows that Jan many pictures has taken (subject-object-asp.aux-verb)
 ‘Klaas knows that Jan has taken many pictures’
 b. **Klaas denkt dat Els heeft haar muren geverfd* (5) *SAOV
 Klaas thinks that Els has her walls painted (subject-asp.aux-object-verb)
 ‘Klaas thinks that Els has painted her walls’
 c. **Jan zegt dat Piet heeft gelezen het artikel* (5) *SAVO
 ‘Jan says that Piet has read the article’ (subject-asp.aux-verb-object)

Two of the three varieties in the sentences with the aspectual auxiliary verb *hebben* are ungrammatical in Dutch; the SAVO word order in (11c) has the grammatical word order for Icelandic sentences.

- (12) a. *Jan denkt dat Kees een boek wil kopen* (5) SOMV
 Jan thinks that Kees a book wants buy (subject-object-modal-verb)
 ‘Jan think that Kees wants to buy a book’
 b. **Marie vindt dat Jan moet de auto kopen* (5) *SMOV
 Marie thinks that Jan must the car buy (subject-modal-object-verb)
 ‘Marie thinks that John should buy the car’
 c. **Jan weet dat Kees moet lezen veel studieboeken* (5) *SMVO
 Jan knows that Kees must read many study books (subject-modal-verb-object)
 ‘Jan knows that Kees has to read many study books’

The sentence in (12c) has the grammatical word order for Icelandic, namely SMVO, where the finite modal auxiliary verb is in the second position of the sentence and the object follows at the end. An example of the filler sentences will also be given below.

- (13) *Anna denkt te veel aan haar werk* (10) filler
 ‘Anna thinks too much about her work’

Right after finishing the grammaticality judgement task, the participants may continue to the next part of the experiment and read the instructions.

Part two: Modelling and feedback

The second component of the experiment is a modelling procedure. This happens individually as well. The researcher and the participant go through several parts of the experiment in the modelling procedure. In the first part, the participant gets a list of sentences that he/she has to say out loud one by one, and the researcher responds to each of them starting with the words *Ik weet dat ...* ('I know that...') followed by the rest of the sentence, creating a sentence with a subordinate clause. In this first part of the modelling phase the participants are explicitly instructed to pay attention to what happens when the researcher transforms the sentence. They are also told that the roles will be switched in the following section, to give an extra motivation to pay attention. There are 15 sentences (see appendix 2, part 1), all without a negation in the subordinate clause, and five sentences per sentence type mentioned in the previous section on the grammaticality judgement task (the filler sentences are excluded from this part of the experiment): SOV, SOAV and SOMV.⁹ An example of how this part of the experiment is conducted can be seen in (14).

- (14) Participant: *Kees heeft een hond*
'Kees owns a dog'
Researcher: *Ik weet dat Kees een hond heeft*
I know that Kees a dog owns
'I know that Kees owns a dog'

In the next part, the roles are switched and an elicited production task is created, so now it is the researcher who says the basic sentence first and the participant has to create the sentences with subordinate clauses. Again, there are 15 sentences, split into five sentences of each type (see appendix 2, part 2). In this part of the research, the participants do not get to see the sentences, so that they have to rely on their first impressions of the sentences, as in the grammaticality judgement task. The researcher marks the responses the participants supply in a table with possible answers and immediately continues to the next sentence. The participants are instructed to start with the 'Ik weet dat'-sentence right after the researcher has finished the basic sentence, to avoid that they think about the sentences for too long. When the participant makes an error, the researcher corrects him/her and supplies the correct response, but an explanation is not given. An example of a dialogue of this kind is given in (15).

- (15) Researcher: *Marie heeft twee zwarte katten*
'Marie owns two black cats'
Participant: **Ik weet dat Marie heeft twee zwarte katten*
'I know that Marie owns two black cats'
Researcher: *Nee, ik weet dat Marie twee zwarte katten heeft*
No, I know that Marie two black cats owns
'No, I know that Marie owns two black cats'

The third part of the experiment follows immediately after the second part, and again, the participants are asked to read the instructions.

Part three: Oral and written test

The third and last component of the experiment is a test on what the participants have learned in the modelling treatment, and it consists of an oral and a written test. The oral test

⁹ The abbreviations used here indicate the target word order, not the word order used in the main clauses.

has the same structure as the elicited production task in the previous section, so the instructions for this test are similar to the ones given earlier. However, the sentences used in this test (appendix 3, oral test) are slightly different from the ones the participants have been taught. In this test, all sentences have a negation in the subordinate clause, so the participants have to rely on their own grammar rules to be able to produce these sentences in the correct manner. Again, there are 15 sentences in this part of the test. A difference compared to the elicited production task in part two is that in this part, incorrect answers are not corrected by the researchers. An example of the kind of dialogue aimed for in this test can be seen in (16).

- (16) Researcher: *Kees heeft de krant niet gelezen*
 Kees has the newspaper not read
 ‘Kees hasn’t read the newspaper’
 Participant: *Ik weet dat Kees de krant niet heeft gelezen*
 I know that Kees the newspaper not has read
 ‘I know that Kees hasn’t read the newspaper’

As said, the participants’ knowledge is tested in both an oral and a written format. After completing the oral part of the experiment, each participant gets to spend an additional 5-10 minutes on the written test, in which the participant has to write his/her responses to 15 sentences (see appendix 3, written test) similar to the ones in the oral test as well as sentences similar to the ones taught in an earlier stage of the experiment. There are both sentences with a negation and sentences without a negation, and with or without auxiliary and modal verbs. A written test is included to shed some light on the differences between oral and written elicited production and the success rate of both, since the participants get a chance to process the written sentences in a different manner and with more time than the spoken sentences.

3. Results

In the following chapter, the results of the experiment will be discussed. They will be discussed starting with the grammaticality judgement task, followed by the elicited production tasks and finally, the tests. This chapter will be concluded with a discussion section where some of the results will be reviewed before moving on to the discussion in chapter 4.

Part one: The grammaticality judgement task

The results for the grammaticality judgement task will be presented in the three tables below. Each table shows the results for one sentence group, which means that SOV and SVO, for instance, are grouped together in one table. For every sentence type, an example is given in the second column, but the percentage given in the last column counts for all sentences of that type in the judgement task, not just for the given example sentence. The underlined part of the sentence is the subordinate clause. An asterisk (*) marks the ungrammaticality of a sentence, and when it says ‘(ice)’ in the first column, this means that it is the grammatical Icelandic word order that is being tested. The first table shows the results for the SOV and *SVO sentences.

Word order	Example sentence	% of correct judgements
SOV	<i>Anna <u>ziet dat Jan een boek koopt</u></i>	86%
*SVO(ice)	<i>*Klaas <u>ziet dat Els leest een boek</u></i>	65%

Table 3: Judgements for SOV / *SVO.

The percentages in table 3 indicate that all ten participants together show an average success rate of 86% in the SOV sentences, which means that they correctly accepted 86% of the grammatical Dutch sentences. Also, they rejected 65% of the ungrammatical Dutch sentences where the Icelandic word order was used. In 35%, however, they wrongfully accepted the Icelandic word order. The next table shows the results for the SOAV, *SAOV and *SAVO sentences.

Word order	Example sentence	% of correct judgements
SOAV	<i>Klaas weet <u>dat Jan veel foto's heeft gemaakt</u></i>	100%
*SAOV	<i>*Klaas denkt <u>dat Els heeft haar muren geverfd</u></i>	60%
*SAVO(ice)	<i>*Jan zegt <u>dat Piet heeft gelezen het artikel</u></i>	92%

Table 4: Judgements for SOAV / *SAOV / *SAVO

In table 4 it can be seen that all participants correctly judged the sentences with the grammatical Dutch word order SOAV as grammatical. In 92% of the cases, they correctly rejected the ungrammatical Dutch sentences with Icelandic word order. However, they only have a 60% success rate with the *SAOV sentences, which is a word order that is neither Dutch nor Icelandic. The third table below displays the results for the sentences with a modal verb.

Word order	Example sentence	% of correct judgements
SOMV	<i>Jan denkt <u>dat Kees een boek wil kopen</u></i>	96%
*SMOV	<i>*Marie vindt <u>dat Jan moet de auto kopen</u></i>	32%
*SMVO(ice)	<i>*Jan weet <u>dat Kees moet lezen veel studieboeken</u></i>	90%

Table 5: Judgements for SOMV / *SMOV / *SMVO

The results in table 5 are rather similar to the results from table 2: high success rates in both the acceptance of the grammatical sentences and the rejection of the ungrammatical sentences with Icelandic word order. However, a strikingly low 32% success rate appears in the *SMOV sentences; the same type of structure where the sentences with an auxiliary verb scored 60% in correct judgements. This neither Dutch nor Icelandic word order seems to sound quite acceptable to the participants.

For matters of completeness, a table for the results of the filler sentences will also be included.

	Example sentence	% of correct judgements
	<i>Anna denkt te veel aan haar werk</i>	77%

Table 6: Judgements for filler sentences

As can be seen in table 6, approximately a quarter of all filler sentences were wrongfully judged as ungrammatical. In the next paragraph, the results of the modelling phase of the experiment will be discussed.

Part two: Modelling and feedback

There are no results for the first part of the modelling and feedback section, since it was the researcher who gave the correct responses. The results of the elicited production with feedback, the second part of this section, will be shown in the tables below. First, the percentages of the success rates will be given. The individual errors will be discussed in a preliminary discussion at the end of this chapter. In the first column, the target word order for the sentences is given. The second column shows an example of a sentence of that word order, and, again, the percentages count for all sentences of that type that were presented to the participants.

Word order	Example sentence	% of correct productions
SOV	<i>Anna heeft een nieuwe bril</i> <i>target: Ik weet dat Anna een nieuwe bril heeft</i>	88%
SOAV	<i>Kees heeft een krant gekocht</i> <i>target: Ik weet dat Kees een krant heeft gekocht</i>	82%
SOMV	<i>Piet wil een foto maken</i> <i>target: Ik weet dat Piet een foto wil maken</i>	82%

Table 7: Results for the elicited production with feedback

The success rates for all three sentence types are rather high, if one bases conclusions on the data in table 7. If one, however, looks at the individual results of the participants, it can be seen that some of the participants show very low success rates on some of the sentence types, or even have a 0% correct score. These individual differences will be discussed in the last section of this chapter. First, it is time to look at the results from the oral and written test.

Part three: Oral and written test

The results of the oral elicited production test will be presented in the same manner as the elicited production task in part two. The abbreviations are slightly different in these results, because there is a negation in the sentences in this test. SONV is the grammatical Dutch word order (*subject-object-negation-verb*), as well as SONAV (*subject-object-negation-auxiliary-verb*) and SONMV (*subject-object-negation-modal-verb*). Table 8 shows the results.

Word order	Example sentence	% of correct productions
SONV	<i>Marie voert haar vissen niet</i> <i>target: Ik weet dat Marie haar vissen niet voert</i>	80%
SONAV	<i>Jan heeft zijn auto niet betaald</i> <i>target: Ik weet dat Jan zijn auto niet heeft betaald</i>	74%
SONMV	<i>Johanna kan de film niet zien</i> <i>target: Ik weet dat Johanna de film niet kan zien</i>	76%

Table 8: Results for the oral elicited production test without feedback

The results of this elicited production test show that the participants are slightly less successful than in the task in part two. However, because there were so few participants, no statistically significant conclusions can be drawn from these numbers. The individual errors will be discussed in a later stage. The following table displays the results of the written elicited production test. The different word orders are paired: the group of sentences with only one verb, both with and without negation, is one pair, et cetera.

Word order	Example sentence	% of correct productions
SOV	<i>Marie koopt nieuwe plantjes</i> <i>target: Ik weet dat Marie nieuwe plantjes koopt</i>	90%
SONV	<i>Mark lust zijn brood niet</i> <i>target: Ik weet dat Mark zijn brood niet lust</i>	87%
SOAV	<i>Anna heeft een mooie tas gekregen</i> <i>target: Ik weet dat Anna een mooie tas heeft gekregen</i>	90%
SONAV	<i>Piet heeft de telefoon niet gepakt</i> <i>target: Ik weet dat Piet de telefoon niet heeft gepakt</i>	87%
SOMV	<i>Johanna wil haar nieuwe boek lezen</i> <i>target: Ik weet dat Johanna haar nieuwe boek wil lezen</i>	88%
SONMV	<i>Kees kan zijn horloge niet vinden</i> <i>target: Ik weet dat Klaas zijn horloge niet kan vinden</i>	90%

Table 9: Results for the written elicited production test

As can be seen in table 9, the overall success rate for all sentences is rather high. However, the answers from one of the participants resulted in a success rate of 0%. This participant made 15 errors in 15 sentences, which explains the fact that the success rate never rises above 90%. The following section will be a preliminary discussion of the results.

Preliminary discussion

The table for the elicited production task in part two, where the participants got feedback if their answer was not correct, showed a rather distorted view on the results, since the percentages given were averages, and the individual errors made by some of the participants are more relevant in this experiment.

Five of the ten participants had a 100% success rate; three of the participants answered only one or two out of 15 sentences incorrectly. One participant had a total of nine errors, and one had 11 errors, which is translated to success rates of respectively 40% and 27%. There are only a few types of errors that can be found in the data. Some examples of errors made can be seen below.

- (17) **Ik weet dat Jan wint veel wedstrijden*
'I know that Jan wins many matches'

SVO instead of SOV

- (18) **Ik weet dat Johanna heeft een cadeau gekregen* SAOV instead of SOAV
 I know that Johanna has a present received
 ‘I know that Johanna has received a present’
- (19) **Ik weet dat Mark wil de loterij winnen* SMOV instead of SOMV
 I know that Mark wants the lottery win
 ‘I know that Mark wants to win the lottery’

Sentences of the type shown in (17) have the Icelandic word order, which would explain why this is a common error made by the participants: six of the in total 24 errors made in this part of the experiment are of this type. The SAOV and SMOV word order both count nine errors in total. This word order is, however, neither the grammatical Dutch nor the grammatical Icelandic word order.

Some other anecdotes concerning this part of the research must be given here. In this part, where the participants received feedback on their wrong answers, it seemed that the participant with the most errors did not seem to capture this feedback from the researcher when being corrected. When asked about this, the participant replied that he did not hear a difference between what he said himself and what the researcher said, thinking he was giving the correct response. Also, some of the participants with few mistakes responded to the researcher’s feedback by saying ‘oh, yes, that is right; the verb has to be at the end’. These participants are obviously aware of this rule in Dutch. Also, a total of 16 sentences were wrongfully judged as ungrammatical by the participants.

If we then continue to the next component of the experiment, which is the oral elicited production test where the participants do not get feedback on their errors, similar problems arise. The overall average percentages seem to imply a rather high success rate, but this is not the case with all participants. Again, half of the participants have a 100% success rate, and three participants have one or two errors. One participant has six of 15 sentences wrong; two others both had 13 errors. One of these two participants made all 13 errors of the same type, which is exemplified in (20). Two other participants with fewer mistakes also had errors of this type.

- (20) **Ik weet dat Anna niet haar hond heeft gevoerd* SNOAV instead of SONAV
 I know that Anna not her dog has fed
 ‘I know that Anna hasn’t fed her dog’

In (20), the negation is placed right after the subject and before the object instead of after it. The participant makes this same type of mistakes in the other sentences types as well, SNOMV instead of SONMV and SNOV instead of SONV also occur.¹⁰ The other participant with 13 errors has a wider range of types of errors, six of which are of the type that can be seen in (21).

- (21) **Ik weet dat Marie wil het duurste boek niet kopen* SMONV instead
 I know that Marie wants the most expensive book not buy of SONMV
 ‘I know that Marie doesn’t want to buy the most expensive book’

¹⁰ In Dutch, it is possible to front the negation when it is meant to emphasize the object or make a contrast: ‘Ik weet dat Jan niet zijn fiets heeft gemaakt, maar met de bus is gegaan’ (I know that John hasn’t fixed his bicycle, but went by bus). However, this was not the situation illustrated in the test, so the sentences are still considered as mistakes.

In the elicited production tasks of part two, the most common errors are SMOV, SAOV (as in the grammaticality judgement task) and SVO. The fact that sentences with an SVO word order are accepted is not surprising, because SVO is the grammatical Icelandic word order. The question rises why the participants do not produce more ‘Icelandic sentences’, since this is their mother tongue after all. A possible explanation for this type of error might seem that the participants are imitating the researcher, for the SAOV and SMOV word orders are the grammatical word orders in main clauses in Dutch, thus what was used in the input. However, this does not seem to be the case. The participants often transformed the sentences in other ways, such as replacing a name or a verb with something else. An actual example of this as encountered in the experiment can be seen in (24).

- (24) Researcher: *Kees* heeft een krant *gekocht*
 Kees has a newspaper bought
 ‘Kees has bought a newspaper’
 Participant: Ik weet dat *Jan* een krant heeft *gelezen*
 I know that Jan a newspaper has read
 ‘I know that John has read a newspaper’

This is evidence for the assumption that the participants do not just copy the researcher’s sentences, but rather process and produce their own sentences.

Another important aspect of the results is the type of error exemplified in (20), in which the negation is placed right after the subject and before the object. An explanation for this structure might be found in the surface movements of the verbs, in the combination of full knowledge of Icelandic and partial application of the rule in Dutch that verbs have to come at the end in subordinate clauses. The Icelandic word order in subordinate clauses is SANVO. If the participant used this as the basic structure for the formation of a Dutch subordinate clause, it might be the case that he or she has learned the rule in Dutch that verbs have to be clause-final in sentences like this. Therefore, there are movements of A and V to the end of the sentence. For constructing a grammatical Dutch subordinate clause, the negation has to be between the object and the (in this case) auxiliary verb, as in SONAV. However, the errors made by the participant imply a kind of interlanguage, in which the second part of the movement is not included. This results in the following word order: SNOAV. Since the negation seems to be placed incorrectly in these cases, the assumption that second language learners have access to UG becomes less plausible.

To finish this section, let us look back at the predictions that were made in the introduction. It might be concluded that the participants that made many errors in the modelling procedure made errors in placing the negation as well, as can be seen in the results of both components. The participants with fewer or no errors in the modelling procedure had just as few or less errors in the elicited production test with negations.

5. Conclusion

The experiment conducted for this thesis resulted in some interesting data for the domain of second language acquisition. It seems that Icelandic second language learners who are learning Dutch go through different phases when learning the word order in subordinate clauses. They start with the Icelandic SVO order, and when having practiced long enough, they end up using the correct Dutch word order SOV. Somewhere in between, they seem to

want to push the infinite verb to the end of the sentence, possibly because they are aware of the rule in Dutch that verbs are supposed to be in this position in subordinate clauses. At least in the experiment conducted here, this was quite often mentioned by the participants. In this process, there seems to be a phase in which the learners push only the infinite verb to the end of the clause and keep the finite verb in the second position.

This seems clear evidence for the assumption that was hypothesized in this thesis, namely that second language learners do not have access to UG for syntactic representations, but use self-constructed (*shallow*, following Clahsen & Felser 2006) rules for forming grammatical sentences in the foreign language. Another argument for this assumption is that the participants in the experiment conducted here were not all that successful in the grammaticality judgement task. They accepted many ungrammatical sentences, even though some of the participants have been living in the Netherlands for more than eight years. Also, the idea that second language learners rely mostly on surface strategies for constructing grammatical sentences has been explicitly confirmed by the participants in the experiment, who kept reminding themselves of the Dutch word order rules and by saying ‘oh, it’s so difficult, I have to think so hard!’, obviously trying to dig up and use their knowledge of Dutch grammar.

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Appendices

APPENDIX 1

Single verb sentences (SOV, *SVO)

1. Annie ziet dat Jan een boek koopt.
2. Jan weet dat Marie een kat heeft.
3. Piet ziet dat de kat van Marie eten krijgt.
4. Jan zegt dat hij een telefoon heeft.
5. Johannes ziet dat Klaas een schilderij koopt.
6. * Els weet dat het boek heeft vijftig bladzijden.
7. * Marie zegt dat Piet heeft een zwarte tas.
8. * Maria vindt dat Piet maakt mooie schilderijen.
9. * Klaas ziet dat Els leest een boek.
10. * Els weet dat Klaas heeft een nieuwe auto.

Regular verb + aspectual auxiliary verb (SOAV, *SAOV, *SAVO)

11. Piet zegt dat hij zijn presentatie heeft gedaan.
12. Johanna zegt dat ze veel mooie bloemen heeft gezien.
13. Klaas weet dat Jan veel foto's heeft gemaakt.

14. Piet ziet dat Maria haar kamer heeft opgeruimd.
15. Jan weet dat Anna naar school is gefietst vandaag.
16. * Johannes vindt dat Piet heeft te veel gedaan gisteren.
17. * Klaas denkt dat Els heeft haar muren geverfd.
18. * Annie vindt dat Johanna heeft veel cadeautjes gehad.
19. * Jan zegt dat hij heeft zijn tenniswedstrijd gewonnen.
20. * Maria weet dat Jan heeft eigenlijk de wedstrijd verloren.
21. * Jan zegt dat Piet heeft gelezen het artikel.
22. * Klaas vindt dat Johanna heeft gekocht te veel kleren.
23. * Marie weet dat Jan heeft gedragen veel verhuisdozen.
24. * Anna denkt dat Els heeft gelopen een marathon.
25. * Els vindt dat Jan heeft gewonnen veel geld.

Regular verb + modal auxiliary verb (SOMV, *SMOV, *SMVO)

26. Jan denkt dat Kees een boek wil kopen.
27. Klaas vindt dat Jan een snor moet hebben.
28. Maria zegt dat Jan veel koekjes moet bakken.
29. Piet zegt dat Annie een computer kan kopen.
30. Kees weet dat Piet veel aardbeien wil eten.
31. * Marie vindt dat Jan moet de auto kopen.
32. * Els weet dat Annie wil heel veel foto's maken.
33. * Kees zegt dat Piet kan mooie schilderijen maken.
34. * Annie weet dat Kees wil veel geld winnen.
35. * Jan denkt dat Klaas moet veel nieuwe dingen leren.
36. * Klaas denkt dat Johanna wil kopen een nieuw huis.
37. * Jan weet dat Kees moet lezen veel studieboeken.
38. * Piet denkt dat Maria kan bakken lekkere broden.
39. * Jan vindt dat Kees moet lopen een marathon.
40. * Marie weet dat Els wil hebben veel nieuwe kleren.

Filler sentences

41. Piet vindt de boeken die Jan leest niet leuk.
42. Kees denkt vaak aan zijn vakantie in Parijs.
43. Jan weet niet veel over honden en katten.
44. Marie vindt Klaas een leuke man.
45. Johanna zegt regelmatig iets verkeerd.
46. Els vindt zelfgebakken appeltaart lekker.
47. Klaas denkt nooit zo goed na.
48. Johanna weet altijd leuke verhalen te vertellen.
49. Anna denkt te veel aan haar werk.
50. Mark zegt altijd domme dingen.

APPENDIX 2

Part 1:

	Participant	Interviewer
1.	Kees heeft een hond.	Ik weet dat ... Kees een hond heeft.
2.	Marie leest veel boeken.	Ik weet dat ... Marie veel boeken leest.
3.	Jan koopt een nieuwe auto.	Ik weet dat ... Jan een nieuwe auto koopt.
4.	Johanna heeft drie kinderen.	Ik weet dat ... Johanna drie kinderen heeft.
5.	Mark geeft leuke cadeautjes.	Ik weet dat ... Mark leuke cadeautjes geeft.
6.	Piet heeft een lekker brood gebakken.	Ik weet dat ... Piet een lekker brood heeft gebakken.
7.	Klaas heeft een nieuwe broek gekocht.	Ik weet dat ... Klaas een nieuwe broek heeft gekocht.
8.	Els heeft een foto gemaakt.	Ik weet dat ... Els een foto heeft gemaakt.
9.	Kees heeft een verhaal verteld.	Ik weet dat ... Kees een verhaal heeft verteld.
10.	Piet heeft het eten gekookt.	Ik weet dat ... Piet het eten heeft gekookt.
11.	Marie wil een nieuw boek kopen.	Ik weet dat ... Marie een nieuw boek wil kopen.
12.	Anna moet meer fruit eten.	Ik weet dat ... Anna meer fruit moet eten.
13.	Maria wil iets te drinken bestellen.	Ik weet dat ... Maria iets te drinken wil bestellen.
14.	Mark kan de wedstrijd winnen.	Ik weet dat ... Mark de wedstrijd kan winnen.
15.	Klaas moet nieuwe schoenen kopen.	Ik weet dat ... Klaas nieuwe schoenen moet kopen.

Part 2:

	Interviewer	Participant
1.	Johanna leest de krant.	Ik weet dat ...
2.	Jan wint veel wedstrijden.	Ik weet dat ...
3.	Marie heeft twee zwarte katten.	Ik weet dat ...
4.	Anna heeft een nieuwe bril.	Ik weet dat ...
5.	Klaas spaart buitenlandse postzegels.	Ik weet dat ...
6.	Jan heeft zijn auto gerepareerd.	Ik weet dat ...
7.	Kees heeft een krant gekocht.	Ik weet dat ...
8.	Maria heeft veel mooie landen bezocht.	Ik weet dat ...
9.	Els heeft een dief betrapt.	Ik weet dat ...
10.	Johanna heeft een cadeau gekregen.	Ik weet dat ...
11.	Piet wil een foto maken.	Ik weet dat ...
12.	Kees moet zijn huiswerk maken.	Ik weet dat ...
13.	Mark wil de loterij winnen.	Ik weet dat ...
14.	Anna kan veel talen spreken.	Ik weet dat ...
15.	Klaas moet de afwas doen.	Ik weet dat ...

APPENDIX 3

Oral test:

	Interviewer	Participant
1.	Jan verkoopt zijn oude auto niet.	Ik weet dat ...
2.	Piet leest zijn boeken niet.	Ik weet dat ...
3.	Klaas snapt de opdracht niet.	Ik weet dat ...
4.	Johanna wast haar handen niet.	Ik weet dat ...
5.	Marie voert haar vissen niet.	Ik weet dat ...
6.	Anna heeft haar hond niet gevoerd.	Ik weet dat ...
7.	Kees heeft de krant niet gelezen.	Ik weet dat ...
8.	Mark heeft zijn kleren niet gewassen.	Ik weet dat ...
9.	Els heeft haar huiswerk niet gedaan.	Ik weet dat ...
10.	Jan heeft zijn auto niet betaald.	Ik weet dat ...
11.	Marie wil het duurste boek niet kopen.	Ik weet dat ...
12.	Piet wil de hond van Jan niet aaien.	Ik weet dat ...
13.	Maria kan de grote doos niet dragen.	Ik weet dat ...
14.	Klaas kan de dure auto niet kopen.	Ik weet dat ...
15.	Johanna kan de film niet zien.	Ik weet dat ...

Written test:

	Test sentence	Participant
1.	Piet werkt in de tuin.	Ik weet dat ...
2.	Marie koopt nieuwe plantjes.	Ik weet dat ...
3.	Kees vergeet zijn verjaardag niet.	Ik weet dat ...
4.	Els mist haar oude school niet.	Ik weet dat ...
5.	Mark lust zijn brood niet.	Ik weet dat ...
6.	Jan heeft zijn huis geschilderd.	Ik weet dat ...
7.	Anna heeft een mooie tas gekregen.	Ik weet dat ...
8.	Klaas heeft zijn werk niet gedaan.	Ik weet dat ...
9.	Piet heeft de telefoon niet gepakt.	Ik weet dat ...
10.	Marie heeft haar tent niet gebruikt.	Ik weet dat ...
11.	Johanna wil haar nieuwe boek lezen.	Ik weet dat ...
12.	Maria moet haar wekker zetten.	Ik weet dat ...
13.	Klaas wil zijn schuur niet schilderen.	Ik weet dat ...
14.	Mark kan zijn fiets niet repareren.	Ik weet dat ...
15.	Kees kan zijn horloge niet vinden.	Ik weet dat ...

APPENDIX 4:

The instructions that were given to the participants (translated into English).

Part one: the grammaticality judgement task

“Listen to the sentences and judge them on how (grammatically) correct you think they sound. You can write a cross in the right column. To get used to the experiment, you will be presented with three test sentences, which you can judge in the table below. These answers will not be included in the results. The first one has already been judged. Attention: you will hear each sentence only once and the time between the sentences is quite short, so react as soon as possible.”

Example:

<i>Sentence number</i>	<i>Sounds grammatical</i>	<i>Sounds un-grammatical</i>
A.	X	
B.		
C.		

Part two: modelling and elicited production

“This part of the experiment will have the form of a role-playing game. The idea is that you, the participant, will say a sentence, on which the interviewer will reply by saying that exact same question but in a different form, namely starting with *Ik weet dat*. There are 15 sentences in total, and they are given below. This part of the test is mostly about practicing with the different types of sentences. It is important that you pay attention to what happens to the sentences when they are preceded by *Ik weet dat*. You will have to use this in a later stage of the experiment.”

	Participant	Interviewer
1.	Kees heeft een hond.	Ik weet dat ...
2.	Johanna heeft drie kinderen.	Ik weet dat ...
3.	Els heeft een foto gemaakt.	Ik weet dat ...
4.	Mark kan de wedstrijd winnen.	Ik weet dat ...
5.	Anna moet meer fruit eten.	Ik weet dat ...
6.	Klaas moet nieuwe schoenen kopen.	Ik weet dat ...
7.	Marie wil een nieuw boek kopen.	Ik weet dat ...
8.	Jan koopt een nieuwe auto.	Ik weet dat ...
9.	Piet heeft een lekker brood gebakken.	Ik weet dat ...
10.	Piet heeft het eten gekookt.	Ik weet dat ...
11.	Kees heeft een verhaal verteld.	Ik weet dat ...
12.	Maria wil iets te drinken bestellen.	Ik weet dat ...
13.	Mark geeft leuke cadeautjes.	Ik weet dat ...
14.	Marie leest veel boeken.	Ik weet dat ...
15.	Klaas heeft een nieuwe broek gekocht.	Ik weet dat ...

“This part will also have the form of a role-playing game, however, it will be the exact opposite of the previous part. Now the idea is that the interviewer says the sentences, and

you have to reply to them by saying *Ik weet dat*. There are 15 sentences. It is important that you start talking right after the interviewer has finished the sentence. You are supposed to say the first thing that comes to mind. Take a look at the examples below to see what you are supposed to do.”

	Interviewer	Participant
1.	Jan loopt.	Ik weet dat ... (<i>Jan loopt.</i>)
2.	Piet lacht.	Ik weet dat ...
3.	etc.	etc.

Part three: oral and written test

“This part of the experiment has the same form as the previous part: the interviewer gives a sentence and you have to reply by saying the same sentence with *Ik weet dat*. There are 15 sentences. Again, it is of great importance that you react as soon as possible.”

“The final part of this experiment consists of a written test, in which you are supposed to do the same as in the previous parts, but now in a written form. There are 15 sentences. Try to start writing as soon as you have read the sentence.”