

Complementiser ‘That’ Insertions in Subject – Embedded Subject

Response Constructions by Dutch Learners of English

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ABSTRACT

This paper examines the use of the complementiser *that* by Dutch L2 learners of English. In English, the complementiser *that* can be left out of a sentence without compromising the grammaticality, unlike in Dutch, where the complementiser must be inserted. Two experiments were conducted in which participants from two proficiency levels were shown a hypothetical scenario and were asked to respond to a question. Their responses were primed to allow for the insertion of the complementiser *that*. Whether or not their answer contained the complementiser *that* was counted and analysed. The participants had to construct an answer from either their own, or the researcher's point of view (e.g. *I think (that) you are happy / You think (that) I am happy*). The analysis of the data from Experiment 1 showed a significant difference between the two proficiency groups, as participants from the low-proficiency group inserted the complementiser more than those from the high-proficiency group. Experiment 2 controlled for a concern in Experiment 1, as the question construction contained an optional complementiser *that*. The complementiser was omitted from the question, which may have influenced the participants from omitting it also. The issue was dealt with in Experiment 2 by altering the question formulation. The change did not result in any significant difference compared to the results of Experiment 1.

2. INTRODUCTION

During speech, our brain has to make numerous linguistic decisions, such as which morphological and phonological constructions to use and how to form utterances that abide by grammatical structures. Years of training result in a more fluent transition between processes. As a result, we are able to have conversations in a 'normal' manner. On average, we accurately retrieve and articulate two to three words per second from our lexicon during a conversation (Levelt, Roelofs, & Meyer, 1999), which is rather fast considering the processes required.

In order to fully understand a message, the brain might need some additional processing time when confronted with a complicated task. The processing time of a message differs greatly depending on the specific degree of difficulty of the message input and on the overall knowledge the hearer has on the subject (Zwaan & Rapp, 2006). This has to do with the mental representation the hearer forms in his or her mind and how this takes shape in relation to the speaker's intended message.

One of the methods to increase the speaker's processing time is to add additional words to a sentence, hereby creating more time to formulate the rest of the message before pronouncing it. This can be achieved by adding function words. The purpose of inserting supplementary function words in an utterance is to postpone the use of words that are of significant value to the meaning of the sentence. Function words usually merely assist in delivering the main message, because they carry little lexical meaning, but help to identify grammatical relations with other words in the sentence. Function words encompass categories such as "determiners, prepositions, [...] complementizers [...] and other sorts of particles" (Selkirk, 1996, p. 417). This paper focusses on the use of one type of function word: the complementiser. In the English language, one of the most commonly used complementisers is the word *that*.

This study seeks to address the use of the complementiser *that* by Dutch L2 learners of English. Previous studies have already investigated the ways in which *that* is used in the English language by native speakers of English, but not yet by native speakers of Dutch, making research from this perspective worthwhile. Two experiments were conducted in which participants from two proficiency levels were tested on their use of the complementiser *that*.

The remainder of this chapter reviews the complementiser *that* in other literature. Secondly, the ways in which *that* can be used in both English and Dutch will be examined. The

grammatical differences and possible transfer between the languages will also be addressed. Lastly, the research question and hypotheses are given.

Previous studies have examined how the complementiser *that* is applied in the English language (Ferreira & Dell, 2000; Ferreira & Hudson, 2011). Ferreira and Dell (2000) studied what reasons native speakers of English might have to use the complementiser *that*. They formed “two general approaches” (p. 296) which focussed on language production. The first approach focusses on language production. Simplifying the syntactic processes of creating spoken sentences can be achieved by more fluent speech. This results in less complicated sentence production. If the sentences are well constructed and formulated before being uttered, there is no need for additional words as complementisers. The second approach focuses on the extent to which the message formulation facilitates understanding by the receiver. The sender of the information constructs the message in such a way that he or she tries to accommodate to the processing capabilities of the receiver, “so that optional words like *that* are used to avoid temporarily ambiguous, difficult-to-comprehend sentences” (Ferreira & Dell, 2000, p. 296). An extreme example of this is given in sentences 1 and 2.

1. *I think you think I said you took the biscuit*
2. *I think that you think that I said that you took the biscuit*

Both sentences are grammatically correct and have an identical meaning, yet in the second sentence the complementisers highlight the separate segments. Ferreira and Dell (2000) conclude that speakers act according to the first approach more often than according to the second. Sentences are usually syntactically constructed to “permit early mention of available material and not to circumvent disruptive temporary ambiguities” (p. 296). This means that speakers generally formulate their sentences with the motive to get their message across in an easy manner. They are less motivated to try to formulate their sentences to avoid any possible misunderstandings by the receiver.

In Ferreira and Hudson's (2011) study, participants took part in an experiment in which their complementiser *that*-insertions were analysed in relation to the accessibility of the information to which they had to respond. The idea of accessibility is best explained by the setting as it was used in this study and in Ferreira and Hudson's (2011). Firstly, a specific sentence structure was provided for a participant. In order to elicit a particular response, the sentence structure had the form of a question in which a certain structure was primed, such as: *How do you think you feel?*. The response had to contain a form of the verb *to think*, so that the subject and embedded subject were also mentioned. This was done to prevent the response from being too short, i.e. merely stating the emotion in a single word. The response, according to the provided question structure, should then have been: *I think I feel ...*. In this case, the subject and embedded subject in the question are both *you*. When the participant has to formulate an answer, the similarity of the subject and embedded subject make it easier to do so. These elements are easier to process and retrieve, and are therefore more easily accessible.

When the subject and embedded subject are different in the question and response constructions, the information is less accessible. Using the same example question as before, the question *How do you think I feel?* is primed to be answered with *I think you feel ...*. The subject and embedded subject are different in the question construction, and therefore also in the response construction.

In other words, when the subject and embedded subject are similar, this element is still very fresh in the working memory of the participant, i.e. easily accessible when formulating the answer. Consequently, they have one factor less to thoroughly consider and evaluate in their response formulation. This results in a decreased processing load, thus fewer word insertions, thus fewer insertions of the complementiser *that* (2011). Ferreira and Hudson (2011) concluded that the accessibility of subject – embedded subject clauses does have an influence on whether

or not a speaker chooses to include or exclude *that* when responding. Unlike their hypothesis, similar subject - embedded subject response clauses did not have fewer *that* insertions than dissimilar subject - embedded subject response clauses. Rather, constructions starting with 'you' had the most occurrences of *that*.

This study is based on that of Ferreira and Hudson (2011). The main difference between their study and this study is that Ferreira and Hudson investigated native speakers of English, whereas this study focuses on the use of the complementiser *that* in spoken English by Dutch learners of English. All of the participants for this study were native speakers of Dutch who learn English as an L2 in secondary school. The focus of this study is to see whether or not the Dutch grammatical rules concerning *that* are applied when Dutch L2 learners speak English. This topic will be elaborated on below.

The Dutch equivalent for the English word *that* is *dat*. Just like *that* in English, the Dutch word *dat* can be used as a demonstrative to denote a specific event or object. In this case, insertion is mandatory because the demonstrative correlates with the subject and provides the receiver of the message with significant information about a particular object (Mulac & Thompson, 1990; Ferreira, 2002). As a complementiser, the word *that* can be left out of sentences without compromising the grammaticality, whereas the Dutch complementiser *dat* still has to be inserted for the sentences to be grammatically correct, as illustrated in the Dutch and English sentences 3a-4b.

3. a. *Ik denk dat ik blij ben*
 b. *I think that I am happy*
4. a. **Ik denk ik blij ben*
 b. *I think I am happy*

Due to the grammatical differences between English and Dutch, difficulties are likely to occur for Dutch speakers. Insertion of *that* in English is mandatory as a demonstrative,

but optional as a complementiser. However, there is no optionality of *dat* in Dutch, neither as a demonstrative nor as a complementiser. Here, Dutch L1 transfer might play a role in the speaker's approach to *that*. If it is equally grammatical to use the complementiser *that*, as opposed to omitting it in English, less advanced Dutch speakers may insert *that* constantly in order to avoid producing ungrammatical sentences. By reason, it might be better to insert *that* all the time, instead of possibly making a mistake by leaving it out of a sentence where it actually has to be inserted. Furthermore, more advanced Dutch L2 learners of English might experience fewer problems than less advanced learners, because they might already be familiar with the optionality of the complementiser *that*.

As stated before, when the processing load increases, additional words can be added to a sentence. For Dutch learners, this could lead to a double hurdle to overcome in English: complicated messages together with the differences in complementiser use. More advanced learners of English who understand the optionality of the complementiser *that* will then have the option to insert *that* in their spoken sentences when dealing with a higher processing load, or leaving it out when the processing load is lower, thus speaking in more fluent speech.

As mentioned earlier, the focus for this study lies on the use of the English complementiser *that* by Dutch L2 learners of English regarding the possible L1 transfer and accessibility of subject – embedded subject response constructions. Because the use of *that* by the high-proficiency group and low-proficiency group are compared to each other's, the analysis is of a contrastive nature.

The hypotheses are that the complementiser *that* will be inserted more often than it will be omitted, because of Dutch L1 transfer to English grammatical constructions. Also, the low-proficiency group will insert *that* more often in their responses than the high-proficiency group. In addition, the response constructions 'you – I' and 'I – you' will feature more *that*-insertions than the 'you – you' and 'I – I' constructions due to the increased processing load of the non-

identical subject – embedded subject constructions. This was not found by Ferreira and Hudson (2011), but the participants in this study are L2 speakers of English, and are thus generally less fluent in English than the L1 speakers in their study (2011). This means that accessibility will have a greater impact on the frequency of *that*-insertions in this study than in Ferreira and Hudson's (2011).

The remainder of this paper will cover the following subjects. Chapter 3 covers Experiment 1, starting with the method and the results, which will then be evaluated in the discussion. Chapter 4 deals with Experiment 2, which is almost identical to Experiment 1, except for the way in which the participants are primed to give their answers. The overall results from both experiments will be analysed and compared to each other in Chapter 5, along with a review of the hypotheses.

3. EXPERIMENT 1

3.1 Method

3.1.1 Participants

This experiment was conducted with students of a Dutch secondary school in the city of Amersfoort. All of the participants volunteered to take part and all participants were second language learners of English with Dutch as their first language. The participants were divided into two groups. The first consisted of students from the first form of secondary school, representing the group with a low proficiency in English. The second group consisted of students from the sixth form of VWO (the last year in the highest educational level of Dutch secondary schools), representing the group with a high English proficiency. Both groups consisted of 13 students, resulting in 26 participants in total, with an overall even distribution of boys and girls (13 each). The participants from the first form had an average age of 12. The participants from the sixth form had an average age of 18.

3.1.2 Materials

The participants had to answer a question which focussed on the accessibility of a previous given sentence structure, i.e. the correlation between the subject and the embedded subject in a clause, similar to the investigation by Ferreira and Hudson (2011). Different kinds of response structures were primed through the question formulation, focussing on the personal pronouns *I* and *you*. One example of such a primed response construction is given in sentences 5a-5c. The scenario description (a) and the researcher's question (b) lead to the participant's answer (c). When combining the two pronouns, four mixed arrangements were possible. See appendices B and C for the full list of all arrangements with the corresponding scenarios as presented to the participants.

5. a. Researcher: *All of my vacation photos are ruined.* [Scenario description]
 b. Researcher: *How do you think I feel?* [Researcher's question]
 c. Participant: *I think (that) you feel sad.* [Participant's answer]

48 One-sentence scenarios were specifically constructed for this experiment, representing four emotions: happy, sad, angry and scared ($48 / 4 = 12$ scenarios per emotion). Each scenario had a relatively clear focus on one of the four emotions in order to avoid any ambiguity. The emotions were embedded in the experiment to mask the true purpose of the experiment, identical to the study of Ferreira and Hudson (2011). Some example scenarios from the experiment are given below in sentences 6a-9b.

6. a. You have won tickets to see your favourite band. (Happy)
 b. I have found a new job. (Happy)
7. a. I have a flat tire on my bicycle. (Sad)
 b. You did not pass the English test. (Sad)
8. a. I lost the game because my opponent was cheating. (Angry)
 b. You saved the last piece of cake, but someone else ate it. (Angry)

9. a. You watched the most terrifying horror film last night. (Scared)
b. I am walking on very thin ice. (Scared)

The presented scenario sentences were kept reasonably simple for several reasons. The first is that all sentences had to be understandable for the sixth-form students, as well as for the first-form students. Furthermore, more understandable sentences require less processing time, which would result in faster response formulation, thus more spontaneous answers. A more spontaneous response is preferable, for this means the participant used as little time as needed to formulate an answer. The more time a participant takes to formulate a response, the more aspects of it they might have evaluated, thereby increasing the processing load. The processing load of the sentences was to be as consistent as possible, in order to better test the accessibility differences.

The four emotions were selected because they are among the emotions most easily recognised. In previous studies (Denham, Basset, Way, Mincic, Zinsser, & Graling, 2011; Petrides & Furnham, 2003), participants were tested on their recognition of emotions and how this correlates with academic success. Denham et al (2011) used the Affect Knowledge Test and concluded that pre-schoolers with higher emotional knowledge turned out to achieve more pre-academic success. As the participants from this study all came from the highest level of the Dutch educational system, it can be assumed that the majority possessed a higher emotion knowledge. This, however, has not been explicitly tested. Petrides and Furnham (2003) found that the emotion happiness is most easily recognised, followed by disgust, anger, surprise, fear and finally sadness. The choice to keep the emotions sadness and fear as scenario descriptions instead of disgust and surprise was made because of the apparent possibility of more scenarios with this emotion. Because of this, the scenarios did not have to be farfetched and could be recognised more easily by the participants.

After the scenarios were constructed, the four different subject - embedded subject sentence structures ('you – you', 'you – I', 'I – you' and 'I – I') were included in the questions for the scenarios and divided over the four sets of twelve sentences, resulting in a list of 48 sentences. Of these 48 scenarios, the first twelve sentences primed the 'I – I' answer construction, the next twelve sentences focussed on the 'I – you' answer construction etc. Subsequently, all of the scenarios were randomised to prevent a constant repetition of a single emotion during the experiment. This resulted in randomised scenario sentences, but grouped sentence constructions. Sentences 10a-13c illustrate a scenario (a) with the four different mixed arrangements of the two personal pronouns in both the question formulation (b) and the primed response construction (c).

- | | | |
|--------------------|--|--------------------------|
| 10. a. Researcher: | <i>All of my vacation photos are ruined.</i> | [Scenario description] |
| b. Researcher: | <i>How do you think I feel?</i> | [Researcher's question] |
| c. Participant: | <i>I think (that) you feel sad.</i> | [Participant's response] |
| 11. a. Researcher: | <i>All of my vacation photos are ruined.</i> | [Scenario description] |
| b. Researcher: | <i>How do I think I feel?</i> | [Researcher's question] |
| c. Participant: | <i>You think (that) you feel sad.</i> | [Participant's response] |
| 12. a. Researcher: | <i>All of your vacation photos are ruined.</i> | [Scenario description] |
| b. Researcher: | <i>How do you think you feel?</i> | [Researcher's question] |
| c. Participant: | <i>I think (that) I feel sad.</i> | [Participant's response] |
| 13. a. Researcher: | <i>All of your vacation photos are ruined.</i> | [Scenario description] |
| b. Researcher: | <i>How do I think you feel?</i> | [Researcher's question] |
| c. Participant: | <i>You think (that) I feel sad.</i> | [Participant's response] |

Still, this only made for one list, in which the subject – embedded subject answer constructions were always in the same order, meaning that an answer construction would always be joined by the same specific scenario and emotion. The participants only took part in the experiment once (i.e. being presented with 48 scenarios) and would therefore not be affected by the reoccurring scenarios and answer constructions. Still, this approach would not make for a reliable outcome overall. To ensure that each scenario was tested with all of the four answer constructions, four lists were made using the same 48 scenarios, in which the clusters of 12 scenarios shifted between the four answer constructions. Table 1 visualises this approach.

Table 1. Distribution of the 48 scenarios over the subject – embedded subject response constructions in sets of 12 sentence clusters. This distribution made for 4 different lists.

	I - I	I - you	you - I	you - you
→ List 1	1-12	13-24	25-36	37-48
→ List 2	13-24	25-36	37-48	1-12
→ List 3	25-36	37-48	1-12	13-24
→ List 4	37-48	1-12	13-24	25-36

Every participant was presented with one list. All four of the lists were being used a nearly even number of times, with lists 1, 2 and 3 six times and list 4 eight times. Each one of the 48 scenarios was copied to a slide in the computer programme PowerPoint 2013. This resulted in four PowerPoint presentations: one presentation for each list. The presentations each consisted of a title slide, followed by two test questions and the 48 scenarios. PowerPoint was selected as an appropriate programme to carry out the experiment with, as the slides filled the entire computer screen, minimising any distractions from the laptop used to carry out the experiment. Also, the full screen option of the programme prevented the participants from looking ahead to see how many and what kind of questions were still to come during the experiment.

3.1.3 Procedure

The experiments took place over the course of several days. In this time, the researcher went to the secondary school in Amersfoort and visited the students of the two classes during their normal lessons.

Prior to the experiment itself, the researcher had asked the teachers whether they would mind if the researcher used the students as participants and would fetch them from the classroom one at a time. As the researcher entered the classroom and introduced himself, he told the students he conducted an experiment about emotions in English and that they were selected as participants. In order to prevent any unreliable outcomes, the participants were not told what the true intention of the experiment was. The researcher told the participants that the experiment was to be conducted in the form of a game, which emphasised on the recognition of certain scenarios and the participants' ability to attribute an emotion to these scenarios from different perspectives. Because of this approach, the participants were unaware of the real goal of the experiment and paid no or very little attention to their use of the complementiser *that*.

When a participant volunteered, he or she was shown to the room where the experiment took place. The researcher accompanied the participant back to the classroom after he or she had completed the test. A new volunteer would then step forward and leave the classroom with the researcher to take the test. This process was repeated until the designated time of the participants' lesson had passed, or until there was not enough time left for a new participant to take part. The researcher would then wait for the class's next lesson to begin and continued with the procedure. Including the instructions, the test generally took between 10 and 15 minutes, depending on the English proficiency of the participant.

The participants took part in the experiment individually and only once. There was no difference in the procedure between the low-proficiency participants and the high-proficiency participants. The experiment was conducted in a quiet, small room in the school.

The experiment was set up in such a way that the participants sat with their back turned to the door so they could focus on their task and were not preoccupied by distractions such as other students walking by. In addition, the researcher was seated next to, and just behind the participant, as can be seen in figure 1, so the participant could focus on the screen of the laptop completely. In the pre-test, conducted before the actual experiment, the researcher was seated opposite the participant, causing various complications. For example, when the participants pressed a wrong button, the pace of the experiment and concentration of the participant were lost before the researcher could reset the experiment. Also, when a participant was not entirely sure whether their answer was correct or not, they repeatedly looked at the researcher for confirmation, even though it was stated in advance that the researcher would not be allowed to help. The changed seating position of the researcher allowed for much faster technical help and decreased the possibility of eye contact made by the participant.

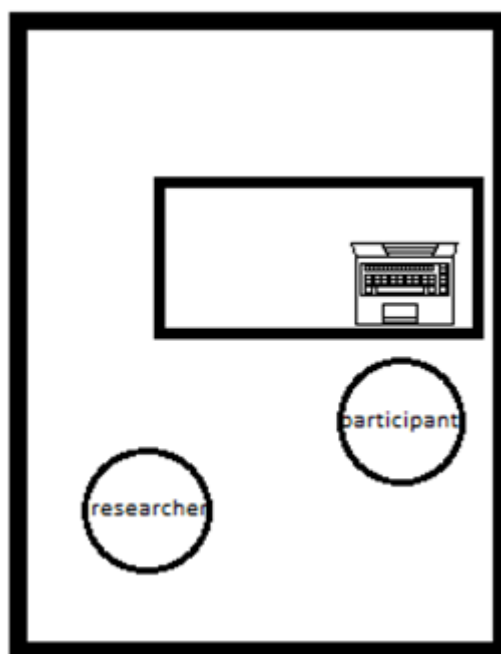


Figure 1. Layout of the room and seating positions during the experiments as seen from above.

After brief oral instructions in Dutch, which shortly summarised the procedure and objective of the experiment, the participants were asked to read a complete, printed, Dutch description of the experiment (provided in Appendix C). These written instructions explained the specifics of the experiment in more detail and stated what was expected from the participant. The instructions could not have been in English, as the example sentences would have given away the intention of the experiment and might have biased the participants' responses. The basic oral instructions were repeated on the printed form and the participants were further informed that the researcher would not focus on their grammar or pronunciation, that there was no time limit and that any answer they gave would be all right, as long as it was in the form of a complete sentence and contained a conjugated form of *to think*. This information was given in order to relieve the participant from any potential insecurity or stress. The printed instructions also featured complete examples of the four possible sentence constructions, question constructions and answer constructions in Dutch. The participants were also informed that they were in control of the pace of the game, as they could press the arrow key or the spacebar on the laptop to proceed to the next slide with a new scenario. By using this approach, the experiment never went too slowly or too fast for the participant.

When the participants had no further questions, two test scenarios were presented to ensure that they had fully understood the experimental task. Additional explanations were given if required by the participants or if considered necessary by the experimenter. Supplementary repetitions of the instructions were necessary during the experiment if the participant appeared to make systematic mistakes or when the participant gave answers in short clauses instead of full sentences. For example, in list 1, the twelve 'I – you' answer constructions were followed by the next twelve 'you – I' answer constructions. Some participants still had difficulty with this transition. Therefore, the written instructions were kept in sight of the participant as a cheat

sheet, so the participants could always see how they were supposed to reply, with or without pointers from the researcher.

As a participant took part in the experiment, the 48 scenarios were all presented in a specific way. Firstly, an imaginary situation was presented on a slide, such as shown below in figures 2 and 3, with a relatively clear focus on a certain sentiment. The participants were shown a short sentence describing a scenario in which the subject was either the participant or the researcher (depending on the specific primed subject – embedded subject response construction). The researcher simultaneously read the same scenario sentence out loud, thus providing both visual and audio input for the participants. The researcher read the sentences out loud with as little emotion as possible, so as not to give away the answer through intonation or word stress, since this might influence the thinking processes of the participant, resulting in a different answer formulation. The researcher spoke with a British English (RP) accent and the English spelling on the slides was also in British English. This was done to make the test as native-like as possible and because the secondary school teaches the students the British English variety.

1



Scenario: You have just bought a new car.

Sebastian: "How do you think you feel?"

Happy – Sad – Angry – Scared

Figure 2. Example slide from List 1.

45



Scenario: You got blamed for somebody else's mistake.

Sebastian: "How do I think you feel?"

Happy – Sad – Angry – Scared

Figure 3. Example slide from List 2.

After this, if the participant had no questions regarding the meaning and translation of the scenario sentence or any individual words, the researcher asked the participants a question, which was also presented on the same slide, as shown in figures 2 and 3. The participants then had to choose which of the four different emotions (happy, sad, angry and scared) best matched that scenario. There were four answer formats, depending on the subject and embedded subject in the clause. If the participant showed continuous difficulty formulating his or her answer according to the primed answer format, the researcher put stress on the subject and embedded subject in the question formulation, in order to emphasise the key components in the participant's answer.

Each slide showed the four emotions the participants had to choose from, as can be seen in figures 2 and 3. The participants therefore did not need to learn the emotions by heart throughout the experiment, ensuring a more spontaneous response. The name of the researcher was provided on the slide instead of the title 'researcher' to make the experiment more personal, hereby aiming to make the participant feel more at ease.

The experiments were recorded using a Zoom H-1 digital audio recorder, so that any transcriptions, analyses and evaluations after the experiments could be made correctly. The participants all agreed to being recorded for the purpose of the investigation.

3.2 Results

The outcomes of the tests were analysed using a computerised Generalised Mixed Linear Analysis in SPSS Statistics. The Mixed Analysis allowed for an examination in which the various effects could also be compared with each other. For this computerised analysis, the dependent variable was the use of the complementiser *that*. It was a categorical dependent variable with two levels: YES (entered as a 1) if it was used in the participant's response, NO (inserted as a 0) if it was left out of the response. Therefore, the target of the analysis was set to

that. The fixed effects were the *sentence constructions* (the four constructions being ‘you – you’, ‘you – I’, ‘I – you’ and ‘I – I’), *proficiency level* (for the participants from the first and the sixth form) and *sentence construction*proficiency level*. The random effects were *participants* and *sentence*, since it could not be predicted in which order the participants would take part in the experiment.

Figure 4 illustrates the overall difference between the low-proficiency group and high-proficiency group. It shows the number of *that*-insertions made by the participants, without any distinction between the four different sentence constructions. The total number of possible *that*-insertions was 1248 for both groups, so 624 for each group. It can be observed in figure 4 that both groups omitted the complementiser *that* more often than that they included it in their response. *That* was inserted 35.6% of the time in the low-proficiency group, compared to only 6.6% in the high-proficiency group. The main effect of proficiency level was significant ($F(7.157) = 1.240, p = 0.008$).

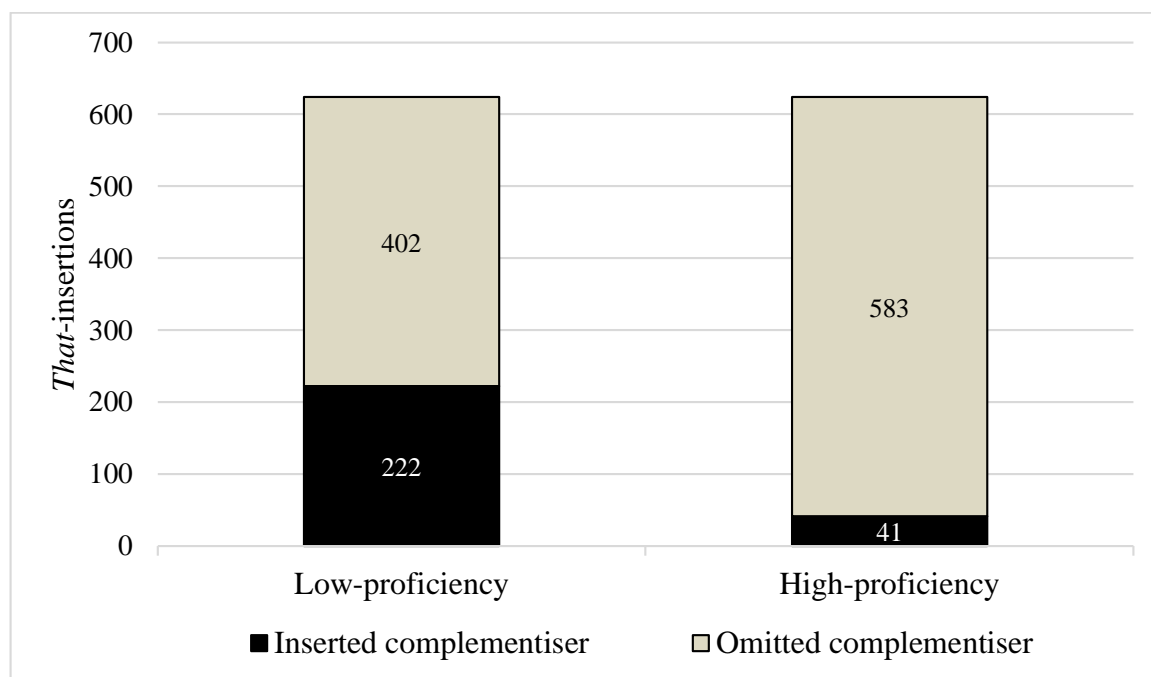


Figure 4. Total number of *that*-insertions by the low-proficiency group and high-proficiency group in Experiment 1.

Furthermore, there appeared to be a difference in the distribution of *that* between the four response constructions. Figure 5 shows the percentages of *that*-insertions in each of the four sentence constructions for both proficiency groups. *That* was most often used in the answer sentences in which the main subject was ‘you’ and the embedded subject was ‘I’, followed by the ‘you – you’ and the ‘I – you’ sentences, and least frequently in the ‘I – I’ answer sentences. To see whether there were any significant differences between the four answer constructions, a *t*-test was applied to the group’s combined results. The *t*-test revealed that only the difference between the ‘you – I’ and ‘I – I’ response constructions was significant ($t = 3.302, p = 0.001$).

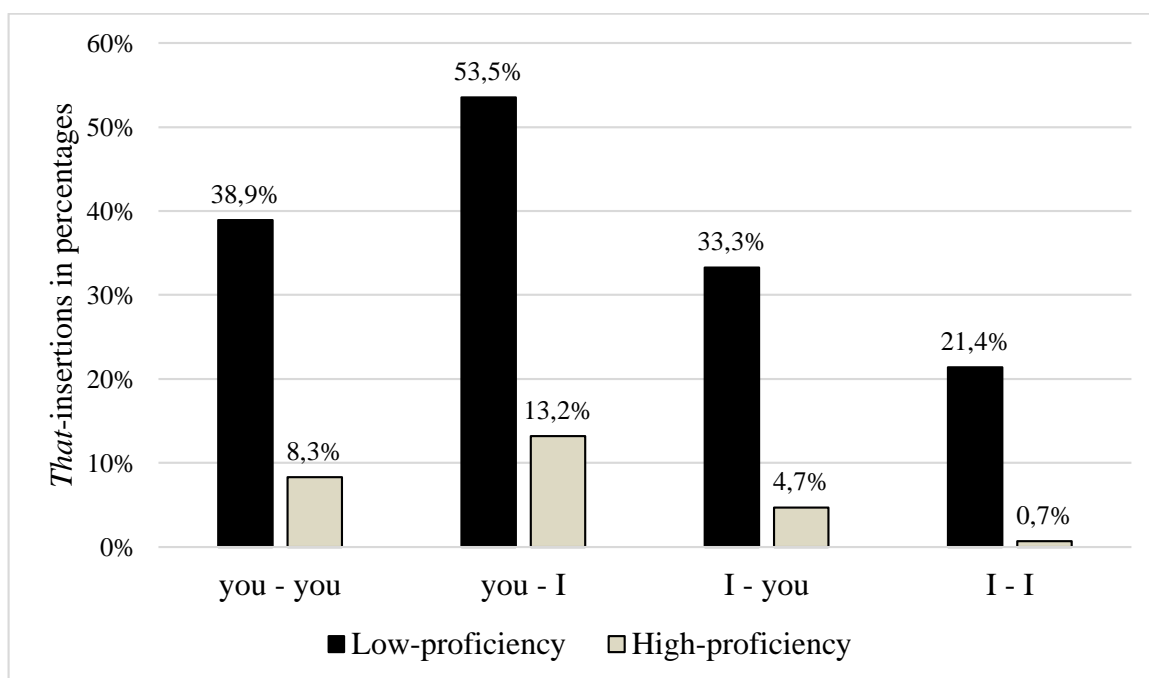


Figure 5. Percentages of *that*-insertions in the four response constructions, between the low-proficiency group and high-proficiency group in Experiment 1.

3.3 Discussion

The main difference between the low-proficiency group and high-proficiency group was significant. The low-proficiency group inserted the complementiser more, meaning that the hypothesis concerning the proficiency levels is confirmed. Whether this is because the low-proficiency participants were unfamiliar with the optionality of *that*, or because they inserted *that* to create more processing time cannot be concluded. The hypothesis that the

complementiser *that* would be inserted most of the time is not confirmed. For both proficiency groups combined, the percentage of *that*-insertions is 21.1%. This is unlike the results of Ferreira and Hudson's study (2011), where the complementiser was inserted approximately in half of all occasions. This would suggest that transfer of the grammatical rules for the Dutch complementiser *dat* to the English *that* was of little influence to the Dutch participants.

Even though the main difference is significant, the variety of the individual English proficiency of the participants was noticeable during the experiment. This manifested itself in various ways, as some of the participants from the first form, i.e. the low-proficiency group, understood all of the scenarios and sentence constructions immediately, whereas others needed additional explanations of certain words. The same goes for the high-proficiency group, though these participants required fewer clarifications during the experiments themselves. Also, some participants needed more time to complete the entire experiment than their peers did.

Furthermore, as is illustrated in figure 5, the two answer constructions in which the participants started their response with 'you think' have more overall occurrences of a *that*-insertion than the responses starting with 'I think'. This can be explained by the likelihood of the increased processing load of the required 'you think' response constructions compared to the 'I think' response constructions. The level of proficiency made no difference in these findings, as both proficiency groups showed similar results regarding the relative frequencies with which they inserted *that* in the four response constructions (1. 'you – I', 2. 'you – you', 3. 'I – you', 4. 'I – I'). Ferreira and Hudson (2011) found similar results in their study, as they discovered that *that* was inserted "less when the main subject was "I" (43.9%) than when it was "you" (53.0%)" (p. 1746).

In addition, the 'you – I' response construction featured the most *that*-occurrences compared to the other three. Again, this may occur because it is harder to imagine how other people might think we are feeling, than to imagine how we ourselves think we are feeling.

This could have had an influence on how the participants constructed their answers. For example, the participants might have simply copied the sentence construction from the researcher if they were not confident about their own English competence. This means that the question might have biased the responses towards omitting the complementiser *that*.

To circumvent this problem in Experiment 2, the questions were altered in such a way that they could no longer contain an optional complementiser *that*, yet still allowed for an optional complementiser *that* in the participants' specific response constructions. Instead of the original question formulation

15. *How do you think I feel?*

The question was changed into

16. *What do you think about me?.*

This alteration in the question formulation is hypothesised to lead to an increased number of *that*-insertions, especially in the low-proficiency group, since the participants could no longer simply copy the researcher's question formulation in their response.

4.1 Method

4.1.1 Participants

32 Participants took part in Experiment 2. Some of them were from the same classes as the participants from Experiment 1, others from a different one. Still, all the participants were either from the first, or from the sixth form of VWO of the same secondary school. There was an even distribution of the participants between the two groups as each group consisted of 16 students, which means that each list was utilised four times by students from the first form and four times by students from the sixth form. The gender of the participants was not evenly distributed, as 13 male and 19 female participants volunteered for the experiment.

4.1.2 Materials

The same materials from Experiment 1 were used, with the alteration of the question formulation described above. The scenarios, questions and corresponding emotions were presented in the same style as in Experiment 1. This all ensured the possibility of a comparison solely between the two question constructions and their correlated *that*-insertions in the responses of the participants. All other factors were kept as similar to Experiment 1 as possible. The four new sentence constructions were formulated as shown in sentences 17a-20c. Again, the four lists were converted into four PowerPoint presentations.

17. a. - Researcher: *All of my vacation photos are ruined.*
 b. - Researcher: *What do you think about me?*
 c. - Participant: *I think (that) you are sad.*
18. a. - Researcher: *All of my vacation photos are ruined.*
 b. - Researcher: *What do I think about myself?*
 c. - Participant: *You think (that) you are sad.*
19. a. - Researcher: *All of your vacation photos are ruined.*
 b. - Researcher: *What do you think about yourself?*
 c. - Participant: *I think (that) I am sad.*
20. a. - Researcher: *All of your vacation photos are ruined.*
 b. - Researcher: *What do I think about you?*
 c. - Participant: *You think (that) I am sad.*

4.1.3 Procedure

Identical to Experiment 1, the participants left the classroom individually with the researcher. The private room in which the experiment was conducted had not been changed in setting or seating layout. The procedure was identical to that of the first experiment, starting with short oral instructions followed by more detailed written instructions, test questions, visual and audio

input during the experiment and a verbal response from the participant, who was again in control of the pace of the experiment. All the participants' experiments were recorded using a digital audio recorder.

4.2 Results

The same computerised Mixed Linear Analysis as in Experiment 1 was carried out. All effects were similarly classified in SPSS for the analysis. The results from Experiment 2 will be given in this chapter. In the discussion of Experiment 2, the results from Experiment 1 will also be compared to those of Experiment 2 to see whether or not the change in question formulation has had a significant effect.

The main effect between the low-proficiency group and high-proficiency group and their *that* insertions in Experiment 2 can be seen in figure 6. The number of possible *that* insertions was 768 for each of the proficiency groups, so 1536 in total. As in Experiment 1, the participants from the low-proficiency group inserted the complementiser *that* more (20.3%) than the high-proficiency participants did (18.6%). A contrastive *t*-test analysis of this difference resulted in $p = 0.668$, which is not significant. Figure 6 shows how close the groups' results were to each other's and that they both omitted the complementiser more often than that they included it in their responses.

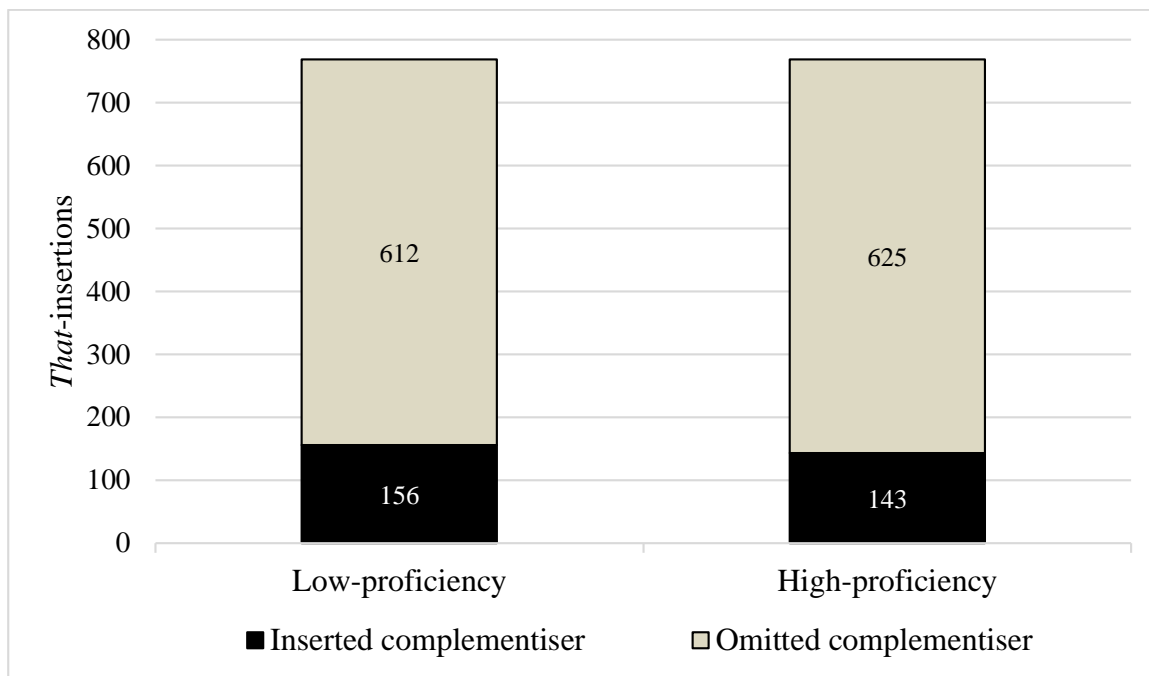


Figure 6. Total number of *that*-insertions of the low-proficiency group and the high-proficiency group in Experiment 2.

The results of the *that*-insertions in correlation to the four response constructions between the two proficiency groups are displayed in figure 7. Using a *t*-test in which the ‘I – I’ construction was compared to the other three, not one of the response constructions had a significant difference when it comes to the frequency of *that*-insertions. Overall, the ‘you – you’ construction had the highest number of *that* occurrences ($t = 5.436$), followed by the ‘I – I’ constructions and the responses in which the subject was ‘you’ and the embedded subject was ‘I’ ($t = 3.366$). The ‘I – you’ construction scored the lowest number of *that*-insertions ($t = 0.783, p = 0.434$).

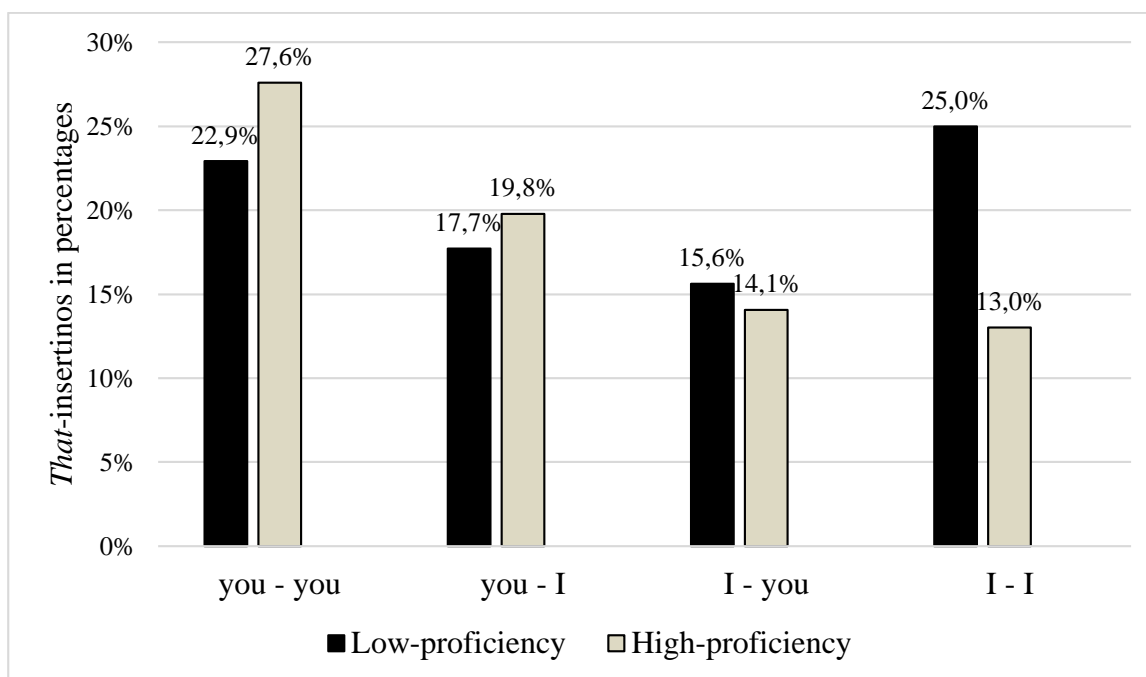


Figure 7. Percentages of *that*-insertions in the four response constructions, of the low-proficiency group and high-proficiency group in Experiment 2.

Concerning the overall difference between the two experiments, changing the formulation of the question sentence did not result in a significant difference. Here, a Pairwise Contrast between the two experiments based on the participants' frequency of *that*-insertions was carried out. The Subjects, Fixed and Random effects were classified identically to Experiment 1, except for the *sentence construction* effect, which is of no significance to this analysis. A *t*-test of the *that*-insertions of two proficiency groups in Experiment 1 and Experiment 2, where a significant difference would have $p < 0.05$ using the sequential Bonferroni adjustment, resulted in $p = 0.098$. Thus, the alteration of the question formulation did not significantly influence the number of *that*-insertions.

4.3 Discussion

A comparison between the results of both experiments will be made in this chapter, as well as evaluations of the results of Experiment 2. In both experiments, the participants from the low-proficiency group inserted the complementiser *that* more often than the participants from the

high-proficiency group did. However, the low-proficiency participants' percentages of *that*-insertions did decrease (but not significantly) in Experiment 2. In Experiment 1, the percentage of *that*-insertions was 35.6%, in contrast to 20.3% in Experiment 2. The change of question sentence formulation did therefore not have the hypothesised effect of an increased number of *that*-insertions in the low-proficiency group.

The high-proficiency group, on the other hand, did show an increased (but not significant) percentage of *that*-insertions in Experiment 2 (18.6%) compared to Experiment 1 (6.6%). A rise of *that*-insertions was predicted, but not specifically for the high-proficiency group. Following the interpretation from the introduction of Experiment 2, the participants from the high-proficiency group might have been less confident of their own English competence than the low-proficiency group. They might have therefore chosen to reproduce the structure as presented in the question formulation in Experiment 1, which was biased to omit the complementiser *that*. The new question formulation in Experiment 2 prohibited the participants from copying the provided sentence structure and forced them to formulate their answer individually, which could explain the higher frequency of *that*-insertions in Experiment 2. The hypothesis stated that the number of *that*-insertions would increase compared to Experiment 1. This is the case for the high-proficiency group with all four response constructions, but not for the low-proficiency group. The low-proficiency group only showed an increased number of *that*-insertions with the 'I – I' response construction, which will be evaluated below.

Furthermore, looking at the response constructions in Experiment 2 separately, the participants from the high-proficiency group used *that* more in the two 'you –' response constructions than the low-proficiency group did. Still, these are the only observed cases in both Experiment 1 and 2 in which the high-proficiency participants inserted the complementiser *that* more often than the participants from the low-proficiency group did. In all other cases, the high-proficiency group inserted the complementiser *that* less than the low-proficiency group.

Possibly, the participants from the high-proficiency group experienced more difficulty answering from the researcher's perspective than the low-proficiency participants did. However, since these results are not reflected in the other response constructions or in all of Experiment 1, the most likely explanation is that the dissimilarity of the individual English proficiency within the two groups manifested itself more than in the other cases.

The responses from the low-proficiency group also made for interesting results in Experiment 2. Whereas the high-proficiency group responded according to the hypothesis and results of Experiment 1 with most *that*-insertions in the responses starting with 'you' as the subject, the low-proficiency group had the most *that*-insertions in the 'I – I' response construction in Experiment 2, followed by the two 'you –' constructions and finally the 'I – you' construction. It is hard to deduct why this outcome may have come to be, as it is unlike the hypothesis and findings from previous investigation by Ferreira and Hudson (2011). When linking this to accessibility, Ferreira and Hudson (2011) stated that when the subject and embedded subject are similar, the information is more accessible than when they are different. This means that the 'you – you' and 'I – I' constructions should have fewer correlated *that*-insertions than the 'you – I' and 'I – you' constructions. However, none of the experiments show results exactly as stated in this theory. The results seem to be more consistent with the theory that it is easier to attribute an emotion from our own perspective than from someone else's.

The possible transfer of the Dutch grammatical patterns of *dat* to the English *that* by the participants did not seem to have had an effect based on the results. In both experiments combined, the participants used *that* a total of 562 times out of a possible 2784 times. This equals a percentage of 20.2%. If transfer from Dutch were to play a relevant role in the participants' English, the calculated percentage should have been higher than that of native English speakers, as they are aware of the optionality of *that* as a complementiser. Because no

native English speakers were tested in this set-up, the closest results are those of Ferreira and Hudson (2011). Here, the native English participants inserted *that* no less than 34.9% of the time, with 58.3% as the highest recorded percentage (2011). This is still higher than all of the Dutch participants' insertions in this experiment.

A comparison of the results of the two experiments shows that the differences are not significant, ($p = 0.098$). This means that the change from the question *How do you think I feel?* in Experiment 1 to *What do you think about me?* in Experiment 2 did not make a difference in the way the participants formulated their answers. It has thus not been proven that the omitted complementiser in the question formulation in Experiment 1 influenced the responses of the participants.

5. CONCLUSION

This study attempted to gain insight into the ways in which Dutch L2 learners of English use the English complementiser *that* in response constructions. The possible grammatical transfer from Dutch (mandatory insertion) to English (optional insertion) regarding the rules of the complementiser *dat* and *that* was tested by having a low-proficiency group and a high-proficiency group participate in the same experiments. The overall difference between the low-proficiency group and the high-proficiency group turned out to be significant in Experiment 1, but not in Experiment 2. Still, even in Experiment 2, the low-proficiency group inserted *that* more often.

The hypothesis stating that transfer would lead to the participants being more likely to insert the complementiser *that* than to leave it out of their response was not confirmed. The participants from both the low-proficiency group and the high-proficiency group omitted *that* more often than that they included it in both experiments. One possible explanation is that the experiments may have been too easy for most of the participants. Once they had fully

understood the way they were supposed to construct their answers, most participants needed only very little processing time. More difficult scenarios and also randomising the subject – embedded subject constructions may increase the processing load in future studies. This could result in more *that*-insertions.

As for the accessibility of the subject and embedded subject in the participants' responses, it was hypothesised that the most *that*-insertions would be found in the 'you – I' and the 'I – you' constructions. The results showed that, for both groups and both experiments combined, the 'I – you' response construction featured the fewest *that*-occurrences. Then came the 'I – I' construction, the 'you – I' construction and finally the 'you – you' construction. The hypothesis was therefore not confirmed by the results. It seemed that the decisive factor was the main subject of the response construction. The 'I –' constructions required less processing time than the 'you –' constructions, because talking from one's own perspective was more natural, as explained earlier.

Some difficulties and limitations have become apparent over the course of this study. The issue of the diversity in English proficiency among the participants (of the same proficiency group) was hard to prevent. This may have resulted in a greater difference between the participants between the sentence constructions in both experiments. This made the level of transfer from Dutch to English difficult to analyse. A larger group of participants probably would not have resulted in more accurate test results, as this does not guarantee that the participants will also have a more similar approach to the experiments. Perhaps a screening of the participants based on their English grades and proficiency prior to the experiment (in collaboration with the school and English teachers) could have helped to create two even more compatible proficiency groups, but the way they would use a single complementiser could probably not have been predicted or controlled by looking at the students' grades. This is not a factor the students are tested on specifically. For future studies, a similar approach with

participants with an even higher, or at least a more comparable proficiency level in the same proficiency group might be a solution to this problem. University students of English, for instance, are more likely to have a comparable English competence than high school students do, because their standards are set higher and they must have a certain English competence in order to proceed with the course.

Another suggestion for future investigation in this field is to measure the time it takes for a participant to formulate and give his or her answer. This might make the testing of accessibility more accurate, as a greater processing load results in more required processing time, especially when analysed in combination with one of the four response constructions. One way to achieve this is by analysing the elapsed time between the question formulation and the time it takes a participant to formulate and produce a response. A fully computerised experiment would then be more appropriate, as the time can be measured more accurately.

6. REFERENCES

- Denham, S. A., Basset, H. H., Way, E., Mincic, M., Zinsser, K., & Graling, K. (2011). Preschoolers' Emotion Knowledge: Selfregulatory Foundations, and Predictions of Early School Success. *Cognition and Emotion*, 26, 667-679.
doi:10.1080/02699931.2011.602049
- Dörnyei, Z. (2007). *Research Methods in Applied Linguistics*. Oxford University Press: Oxford.
- Ferreira, V. (2002). The Persistence of Optional Complementizer Production: Why Saying "That" is not Saying "That" at all. *Journal of Memory and Language*, 48, 379-398.
doi:10.1016/S0749-596X(02)00523-5
- Ferreira, V., & Dell, G. (2000). Effect of Ambiguity and Lexical Availability on Syntactic and Lexical Production. *Cognitive Psychology*, 40, 296-340. doi:10.1006/cogp.1999.0730

- Ferreira, V., & Hudson, M. (2011). Saying “That” in Dialogue: The Influence of Accessibility and Social Factors on Syntactic Production. *Language and Cognitive Processes*, 26, 1736-1762. doi:10.1080/01690965.2010.537482
- Fowler, R. H. & Aaron, J. E. (2010). *The Little, Brown Handbook: Eleventh Edition*. Pearson Education International: United States.
- Garrod, S., & Pickering, M. (2009). Joint Action, Interactive Alignment and Dialogue. *Topics in Cognitive Science*, 1, 292-304. doi:10.1111/j.1756-8765.2009.01020.x
- Haywood, S. L., Pickering, M. J., & Branigan, H. P. (2005). Do Speakers Avoid Ambiguity During Dialogue? *Psychological Science*, 16, 362-366. doi:10.1111/j.0956-7976.2005.01541.x
- Levelt, W. J. M., Roelofs, A., & Meyer, A. S. (1999). A Theory of Lexical Access in Speech Production. *Behavioral and Brain Sciences*, 22, 1-75. doi:10.1073/pnas.231459498
- Petrides, K. V., & Furnham, A. (2003). Trait Emotional Intelligence: Behavioural Validation in Two Studies of Emotion Recognition and Reactivity to Mood Induction. *European Journal of Personality*, 17, 39-57. doi:10.1002/per.466
- Selkirk, E. (1996). The Prosodic Structure of Function Words. In J. J. McCarthy (Ed.) *Optimal Theory in Phonology: A Reader* (pp. 417-437). Oxford, Blackwell. doi:10.1002/9780470756171.ch22
- Zwaan, R.A., & Rapp, D.N. (2006). Discourse comprehension. In M.A. Gernsbacher & M.J. Traxler (Eds.). *Handbook of Psycholinguistics: 2nd edition*, 725-764. San Diego, CA: Elsevier. doi:10.1146/annurev.psych.48.1.163

Appendix A 1

Experiment 1 - List 1

- | | |
|---|----------------------------|
| 1. You have just bought a new car | How do you think you feel? |
| 2. You are lost in the middle of a forest | How do you think you feel? |
| 3. You heard a knock on the door at midnight,
but there was no one there | How do you think you feel? |
| 4. Your phone got stolen last week | How do you think you feel? |
| 5. You are making a delicious looking cake | How do you think you feel? |
| 6. Your favourite sports team lost the match | How do you think you feel? |
| 7. You have won the jack pot in the lottery | How do you think you feel? |
| 8. You did not pass the English test | How do you think you feel? |
| 9. You lost the game because your opponent was cheating | How do you think you feel? |
| 10. You did not know it is raining so hard outside | How do you think you feel? |
| 11. You were in an earthquake last year | How do you think you feel? |
| 12. Your friend just lied to you | How do you think you feel? |
| | |
| 13. I got the highest grade of the whole class | How do you think I feel? |
| 14. I have a flat tire on my bicycle | How do you think I feel? |
| 15. I stepped in dog poo where no dogs are allowed | How do you think I feel? |
| 16. My entire street is without power once again | How do you think I feel? |
| 17. I heard a whisper in my ear, but there was no one there | How do you think I feel? |
| 18. I woke up sweating from a terrible nightmare last night | How do you think I feel? |
| 19. My headache is finally over | How do you think I feel? |
| 20. My phone's battery is dead and I need to make a call | How do you think I feel? |
| 21. I saved the last piece of cake, but someone else ate it | How do you think I feel? |
| 22. I have finally found my keys | How do you think I feel? |
| 23. I watched the most terrifying horror film last night | How do you think I feel? |
| 24. I have completely forgotten to prepare for this test | How do you think I feel? |
| | |
| 25. You are eating your favourite food tonight | How do I think you feel? |
| 26. Your mom forgot to pick you up from school yesterday | How do I think you feel? |
| 27. You are about to get a tooth pulled at the dentist's | How do I think you feel? |
| 28. Your neighbour always plays really loud music,
no matter your complaints | How do I think you feel? |
| 29. You do not want to go to school today | How do I think you feel? |
| 30. Your mail is always late on Thursdays | How do I think you feel? |
| 31. An angry dog chased after you | How do I think you feel? |
| 32. You set a new high score in the arcade yesterday | How do I think you feel? |
| 33. You will probably get a promotion | How do I think you feel? |
| 34. You have lost your keys | How do I think you feel? |
| 35. You feel like breaking a vase | How do I think you feel? |
| 36. You are walking on very thin ice | How do I think you feel? |

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| 37. I have to ride my bicycle through a heavy storm | How do I think I feel? |
| 38. I am going on a nice, long vacation | How do I think I feel? |
| 39. I got fired for being late just once | How do I think I feel? |
| 40. I have found a new job | How do I think I feel? |
| 41. I watched a drama film in which the main character died | How do I think I feel? |
| 42. I have lost my wallet | How do I think I feel? |
| 43. A car has been following me at night
for a very long time now | How do I think I feel? |
| 44. I have won tickets to see my favourite band | How do I think I feel? |
| 45. I saw my bicycle being stolen | How do I think I feel? |
| 46. The volcano near my house is erupting | How do I think I feel? |
| 47. I just heard my favourite TV-show got cancelled | How do I think I feel? |
| 48. I got blamed for somebody else's mistake | How do I think I feel? |

Appendix A 2

Experiment 1 - List 2

- | | |
|---|----------------------------|
| 1. You have just bought a new car | How do I think I feel? |
| 2. You are lost in the middle of a forest | How do I think I feel? |
| 3. You heard a knock on the door at midnight,
but there was no one there | How do I think I feel? |
| 4. Your phone got stolen last week | How do I think I feel? |
| 5. You are making a delicious looking cake | How do I think I feel? |
| 6. Your favourite sports team lost the match | How do I think I feel? |
| 7. You have won the jack pot in the lottery | How do I think I feel? |
| 8. You did not pass the English test | How do I think I feel? |
| 9. You lost the game because your opponent was cheating | How do I think I feel? |
| 10. You did not know it is raining so hard outside | How do I think I feel? |
| 11. You were in an earthquake last year | How do I think I feel? |
| 12. Your friend just lied to you | How do I think I feel? |
| 13. I got the highest grade of the whole class | How do you think you feel? |
| 14. I have a flat tire on my bicycle | How do you think you feel? |
| 15. I stepped in dog poo where no dogs are allowed | How do you think you feel? |
| 16. My entire street is without power once again | How do you think you feel? |
| 17. I heard a whisper in my ear, but there was no one there | How do you think you feel? |
| 18. I woke up sweating from a terrible nightmare last night | How do you think you feel? |
| 19. My headache is finally over | How do you think you feel? |
| 20. My phone's battery is dead and I need to make a call | How do you think you feel? |
| 21. I saved the last piece of cake, but someone else ate it | How do you think you feel? |
| 22. I have finally found my keys | How do you think you feel? |
| 23. I watched the most terrifying horror film last night | How do you think you feel? |
| 24. I have completely forgotten to prepare for this test | How do you think you feel? |
| 25. You are eating your favourite food tonight | How do you think I feel? |
| 26. Your mom forgot to pick you up from school yesterday | How do you think I feel? |
| 27. You are about to get a tooth pulled at the dentist's | How do you think I feel? |

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|---|--------------------------|
| 28. Your neighbour always plays really loud music,
no matter your complaints | How do you think I feel? |
| 29. You do not want to go to school today | How do you think I feel? |
| 30. Your mail is always late on Thursdays | How do you think I feel? |
| 31. An angry dog chased after you | How do you think I feel? |
| 32. You set a new high score in the arcade yesterday | How do you think I feel? |
| 33. You will probably get a promotion | How do you think I feel? |
| 34. You have lost your keys | How do you think I feel? |
| 35. You feel like breaking a vase | How do you think I feel? |
| 36. You are walking on very thin ice | How do you think I feel? |
| | |
| 37. I have to ride my bicycle through a heavy storm | How do I think you feel? |
| 38. I am going on a nice, long vacation | How do I think you feel? |
| 39. I got fired for being late just once | How do I think you feel? |
| 40. I have found a new job | How do I think you feel? |
| 41. I watched a drama film in which the main character died | How do I think you feel? |
| 42. I have lost my wallet | How do I think you feel? |
| 43. A car has been following me at night
for a very long time now | How do I think you feel? |
| 44. I have won tickets to see my favourite band | How do I think you feel? |
| 45. I saw my bicycle being stolen | How do I think you feel? |
| 46. The volcano near my house is erupting | How do I think you feel? |
| 47. I just heard my favourite TV-show got cancelled | How do I think you feel? |
| 48. I got blamed for somebody else's mistake | How do I think you feel? |

Appendix A 3

Experiment 1 – List 3

- | | |
|---|--------------------------|
| 1. You have just bought a new car | How do I think you feel? |
| 2. You are lost in the middle of a forest | How do I think you feel? |
| 3. You heard a knock on the door at midnight,
but there was no one there | How do I think you feel? |
| 4. Your phone got stolen last week | How do I think you feel? |
| 5. You are making a delicious looking cake | How do I think you feel? |
| 6. Your favourite sports team lost the match | How do I think you feel? |
| 7. You have won the jack pot in the lottery | How do I think you feel? |
| 8. You did not pass the English test | How do I think you feel? |
| 9. You lost the game because your opponent was cheating | How do I think you feel? |
| 10. You did not know it is raining so hard outside | How do I think you feel? |
| 11. You were in an earthquake last year | How do I think you feel? |
| 12. Your friend just lied to you | How do I think you feel? |
| | |
| 13. I got the highest grade of the whole class | How do I think I feel? |
| 14. I have a flat tire on my bicycle | How do I think I feel? |
| 15. I stepped in dog poo where no dogs are allowed | How do I think I feel? |
| 16. My entire street is without power once again | How do I think I feel? |
| 17. I heard a whisper in my ear, but there was no one there | How do I think I feel? |

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|---|----------------------------|
| 18. I woke up sweating from a terrible nightmare last night | How do I think I feel? |
| 19. My headache is finally over | How do I think I feel? |
| 20. My phone's battery is dead and I need to make a call | How do I think I feel? |
| 21. I saved the last piece of cake, but someone else ate it | How do I think I feel? |
| 22. I have finally found my keys | How do I think I feel? |
| 23. I watched the most terrifying horror film last night | How do I think I feel? |
| 24. I have completely forgotten to prepare for this test | How do I think I feel? |
| | |
| 25. You are eating your favourite food tonight | How do you think you feel? |
| 26. Your mom forgot to pick you up from school yesterday | How do you think you feel? |
| 27. You are about to get a tooth pulled at the dentist's | How do you think you feel? |
| 28. Your neighbour always plays really loud music,
no matter your complaints | How do you think you feel? |
| 29. You do not want to go to school today | How do you think you feel? |
| 30. Your mail is always late on Thursdays | How do you think you feel? |
| 31. An angry dog chased after you | How do you think you feel? |
| 32. You set a new high score in the arcade yesterday | How do you think you feel? |
| 33. You will probably get a promotion | How do you think you feel? |
| 34. You have lost your keys | How do you think you feel? |
| 35. You feel like breaking a vase | How do you think you feel? |
| 36. You are walking on very thin ice | How do you think you feel? |
| | |
| 37. I have to ride my bicycle through a heavy storm | How do you think I feel? |
| 38. I am going on a nice, long vacation | How do you think I feel? |
| 39. I got fired for being late just once | How do you think I feel? |
| 40. I have found a new job | How do you think I feel? |
| 41. I watched a drama film in which the main character died | How do you think I feel? |
| 42. I have lost my wallet | How do you think I feel? |
| 43. A car has been following me at night
for a very long time now | How do you think I feel? |
| 44. I have won tickets to see my favourite band | How do you think I feel? |
| 45. I saw my bicycle being stolen | How do you think I feel? |
| 46. The volcano near my house is erupting | How do you think I feel? |
| 47. I just heard my favourite TV-show got cancelled | How do you think I feel? |
| 48. I got blamed for somebody else's mistake | How do you think I feel? |

Appendix A 4

Experiment 1 – List 4

- | | |
|---|--------------------------|
| 1. You have just bought a new car | How do you think I feel? |
| 2. You are lost in the middle of a forest | How do you think I feel? |
| 3. You heard a knock on the door at midnight,
but there was no one there | How do you think I feel? |
| 4. Your phone got stolen last week | How do you think I feel? |
| 5. You are making a delicious looking cake | How do you think I feel? |
| 6. Your favourite sports team lost the match | How do you think I feel? |
| 7. You have won the jack pot in the lottery | How do you think I feel? |

- | | |
|---|----------------------------|
| 8. You did not pass the English test | How do you think I feel? |
| 9. You lost the game because your opponent was cheating | How do you think I feel? |
| 10. You did not know it is raining so hard outside | How do you think I feel? |
| 11. You were in an earthquake last year | How do you think I feel? |
| 12. Your friend just lied to you | How do you think I feel? |
| | |
| 13. I got the highest grade of the whole class | How do I think you feel? |
| 14. I have a flat tire on my bicycle | How do I think you feel? |
| 15. I stepped in dog poo where no dogs are allowed | How do I think you feel? |
| 16. My entire street is without power once again | How do I think you feel? |
| 17. I heard a whisper in my ear, but there was no one there | How do I think you feel? |
| 18. I woke up sweating from a terrible nightmare last night | How do I think you feel? |
| 19. My headache is finally over | How do I think you feel? |
| 20. My phone's battery is dead and I need to make a call | How do I think you feel? |
| 21. I saved the last piece of cake, but someone else ate it | How do I think you feel? |
| 22. I have finally found my keys | How do I think you feel? |
| 23. I watched the most terrifying horror film last night | How do I think you feel? |
| 24. I have completely forgotten to prepare for this test | How do I think you feel? |
| | |
| 25. You are eating your favourite food tonight | How do I think I feel? |
| 26. Your mom forgot to pick you up from school yesterday | How do I think I feel? |
| 27. You are about to get a tooth pulled at the dentist's | How do I think I feel? |
| 28. Your neighbour always plays really loud music,
no matter your complaints | How do I think I feel? |
| 29. You do not want to go to school today | How do I think I feel? |
| 30. Your mail is always late on Thursdays | How do I think I feel? |
| 31. An angry dog chased after you | How do I think I feel? |
| 32. You set a new high score in the arcade yesterday | How do I think I feel? |
| 33. You will probably get a promotion | How do I think I feel? |
| 34. You have lost your keys | How do I think I feel? |
| 35. You feel like breaking a vase | How do I think I feel? |
| 36. You are walking on very thin ice | How do I think I feel? |
| | |
| 37. I have to ride my bicycle through a heavy storm | How do you think you feel? |
| 38. I am going on a nice, long vacation | How do you think you feel? |
| 39. I got fired for being late just once | How do you think you feel? |
| 40. I have found a new job | How do you think you feel? |
| 41. I watched a drama film in which the main character died | How do you think you feel? |
| 42. I have lost my wallet | How do you think you feel? |
| 43. A car has been following me at night
for a very long time now | How do you think you feel? |
| 44. I have won tickets to see my favourite band | How do you think you feel? |
| 45. I saw my bicycle being stolen | How do you think you feel? |
| 46. The volcano near my house is erupting | How do you think you feel? |
| 47. I just heard my favourite TV-show got cancelled | How do you think you feel? |
| 48. I got blamed for somebody else's mistake | How do you think you feel? |

Appendix B 1

Experiment 2 – List 1

- | | |
|---|-----------------------------------|
| 1. You have just bought a new car | What do you think about yourself? |
| 2. You are lost in the middle of a forest | What do you think about yourself? |
| 3. You heard a knock on the door at midnight,
but there was no one there | What do you think about yourself? |
| 4. Your phone got stolen last week | What do you think about yourself? |
| 5. You are making a delicious looking cake | What do you think about yourself? |
| 6. Your favourite sports team lost the match | What do you think about yourself? |
| 7. You have won the jack pot in the lottery | What do you think about yourself? |
| 8. You did not pass the English test | What do you think about yourself? |
| 9. You lost the game because your opponent
was cheating | What do you think about yourself? |
| 10. You did not know it is raining so hard outside | What do you think about yourself? |
| 11. You were in an earthquake last year | What do you think about yourself? |
| 12. Your friend just lied to you | What do you think about yourself? |
| | |
| 13. I got the highest grade of the whole class | What do you think about me? |
| 14. I have a flat tire on my bicycle | What do you think about me? |
| 15. I stepped in dog poo where no dogs are allowed | What do you think about me? |
| 16. My entire street is without power once again | What do you think about me? |
| 17. I heard a whisper in my ear,
but there was no one there | What do you think about me? |
| 18. I woke up sweating from a terrible nightmare
last night | What do you think about me? |
| 19. My headache is finally over | What do you think about me? |
| 20. My phone's battery is dead
and I need to make a call | What do you think about me? |
| 21. I saved the last piece of cake,
but someone else ate it | What do you think about me? |
| 22. I have finally found my keys | What do you think about me? |
| 23. I watched the most terrifying horror film last night | What do you think about me? |
| 24. I have completely forgotten to prepare for this test | What do you think about me? |
| | |
| 25. You are eating your favourite food tonight | What do I think about you? |
| 26. Your mom forgot to pick you up
from school yesterday | What do I think about you? |
| 27. You are about to get a tooth pulled at the dentist's | What do I think about you? |
| 28. Your neighbour always plays really loud music,
no matter your complaints | What do I think about you? |
| 29. You do not want to go to school today | What do I think about you? |
| 30. Your mail is always late on Thursdays | What do I think about you? |
| 31. An angry dog chased after you | What do I think about you? |
| 32. You set a new high score in the arcade yesterday | What do I think about you? |
| 33. You will probably get a promotion | What do I think about you? |
| 34. You have lost your keys | What do I think about you? |

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|--|-------------------------------|
| 35. You feel like breaking a vase | What do I think about you? |
| 36. You are walking on very thin ice | What do I think about you? |
| 37. I have to ride my bicycle through a heavy storm | What do I think about myself? |
| 38. I am going on a nice, long vacation | What do I think about myself? |
| 39. I got fired for being late just once | What do I think about myself? |
| 40. I have found a new job | What do I think about myself? |
| 41. I watched a drama film in which
the main character died | What do I think about myself? |
| 42. I have lost my wallet | What do I think about myself? |
| 43. A car has been following me at night
for a very long time now | What do I think about myself? |
| 44. I have won tickets to see my favourite band | What do I think about myself? |
| 45. I saw my bicycle being stolen | What do I think about myself? |
| 46. The volcano near my house is erupting | What do I think about myself? |
| 47. I just heard my favourite TV-show got cancelled | What do I think about myself? |
| 48. I got blamed for somebody else's mistake | What do I think about myself? |

Appendix B 2

Experiment 2 – List 2

- | | |
|---|-----------------------------------|
| 1. You have just bought a new car | What do I think about myself? |
| 2. You are lost in the middle of a forest | What do I think about myself? |
| 3. You heard a knock on the door at midnight,
but there was no one there | What do I think about myself? |
| 4. Your phone got stolen last week | What do I think about myself? |
| 5. You are making a delicious looking cake | What do I think about myself? |
| 6. Your favourite sports team lost the match | What do I think about myself? |
| 7. You have won the jack pot in the lottery | What do I think about myself? |
| 8. You did not pass the English test | What do I think about myself? |
| 9. You lost the game because your opponent
was cheating | What do I think about myself? |
| 10. You did not know it is raining so hard outside | What do I think about myself? |
| 11. You were in an earthquake last year | What do I think about myself? |
| 12. Your friend just lied to you | What do I think about myself? |
| 13. I got the highest grade of the whole class | What do you think about yourself? |
| 14. I have a flat tire on my bicycle | What do you think about yourself? |
| 15. I stepped in dog poo where no dogs are allowed | What do you think about yourself? |
| 16. My entire street is without power once again | What do you think about yourself? |
| 17. I heard a whisper in my ear,
but there was no one there | What do you think about yourself? |
| 18. I woke up sweating from a terrible nightmare
last night | What do you think about yourself? |
| 19. My headache is finally over | What do you think about yourself? |
| 20. My phone's battery is dead
and I need to make a call | What do you think about yourself? |

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|---|-----------------------------------|
| 21. I saved the last piece of cake,
but someone else ate it | What do you think about yourself? |
| 22. I have finally found my keys | What do you think about yourself? |
| 23. I watched the most terrifying horror film last night | What do you think about yourself? |
| 24. I have completely forgotten to prepare for this test | What do you think about yourself? |
| | |
| 25. You are eating your favourite food tonight | What do you think about me? |
| 26. Your mom forgot to pick you up
from school yesterday | What do you think about me? |
| 27. You are about to get a tooth pulled at the dentist's | What do you think about me? |
| 28. Your neighbour always plays really loud music,
no matter your complaints | What do you think about me? |
| 29. You do not want to go to school today | What do you think about me? |
| 30. Your mail is always late on Thursdays | What do you think about me? |
| 31. An angry dog chased after you | What do you think about me? |
| 32. You set a new high score in the arcade yesterday | What do you think about me? |
| 33. You will probably get a promotion | What do you think about me? |
| 34. You have lost your keys | What do you think about me? |
| 35. You feel like breaking a vase | What do you think about me? |
| 36. You are walking on very thin ice | What do you think about me? |
| | |
| 37. I have to ride my bicycle through a heavy storm | What do I think about you? |
| 38. I am going on a nice, long vacation | What do I think about you? |
| 39. I got fired for being late just once | What do I think about you? |
| 40. I have found a new job | What do I think about you? |
| 41. I watched a drama film in which
the main character died | What do I think about you? |
| 42. I have lost my wallet | What do I think about you? |
| 43. A car has been following me at night
for a very long time now | What do I think about you? |
| 44. I have won tickets to see my favourite band | What do I think about you? |
| 45. I saw my bicycle being stolen | What do I think about you? |
| 46. The volcano near my house is erupting | What do I think about you? |
| 47. I just heard my favourite TV-show got cancelled | What do I think about you? |
| 48. I got blamed for somebody else's mistake | What do I think about you? |

Appendix B 3

Experiment 2 – List 3

- | | |
|---|----------------------------|
| 1. You have just bought a new car | What do I think about you? |
| 2. You are lost in the middle of a forest | What do I think about you? |
| 3. You heard a knock on the door at midnight,
but there was no one there | What do I think about you? |
| 4. Your phone got stolen last week | What do I think about you? |
| 5. You are making a delicious looking cake | What do I think about you? |
| 6. Your favourite sports team lost the match | What do I think about you? |
| 7. You have won the jack pot in the lottery | What do I think about you? |

- | | |
|---|-----------------------------------|
| 8. You did not pass the English test | What do I think about you? |
| 9. You lost the game because your opponent was cheating | What do I think about you? |
| 10. You did not know it is raining so hard outside | What do I think about you? |
| 11. You were in an earthquake last year | What do I think about you? |
| 12. Your friend just lied to you | What do I think about you? |
| 13. I got the highest grade of the whole class | What do I think about myself? |
| 14. I have a flat tire on my bicycle | What do I think about myself? |
| 15. I stepped in dog poo where no dogs are allowed | What do I think about myself? |
| 16. My entire street is without power once again | What do I think about myself? |
| 17. I heard a whisper in my ear,
but there was no one there | What do I think about myself? |
| 18. I woke up sweating from a terrible nightmare last night | What do I think about myself? |
| 19. My headache is finally over | What do I think about myself? |
| 20. My phone's battery is dead and I need to make a call | What do I think about myself? |
| 21. I saved the last piece of cake,
but someone else ate it | What do I think about myself? |
| 22. I have finally found my keys | What do I think about myself? |
| 23. I watched the most terrifying horror film last night | What do I think about myself? |
| 24. I have completely forgotten to prepare for this test | What do I think about myself? |
| 25. You are eating your favourite food tonight | What do you think about yourself? |
| 26. Your mom forgot to pick you up from school yesterday | What do you think about yourself? |
| 27. You are about to get a tooth pulled at the dentist's | What do you think about yourself? |
| 28. Your neighbour always plays really loud music,
no matter your complaints | What do you think about yourself? |
| 29. You do not want to go to school today | What do you think about yourself? |
| 30. Your mail is always late on Thursdays | What do you think about yourself? |
| 31. An angry dog chased after you | What do you think about yourself? |
| 32. You set a new high score in the arcade yesterday | What do you think about yourself? |
| 33. You will probably get a promotion | What do you think about yourself? |
| 34. You have lost your keys | What do you think about yourself? |
| 35. You feel like breaking a vase | What do you think about yourself? |
| 36. You are walking on very thin ice | What do you think about yourself? |
| 37. I have to ride my bicycle through a heavy storm | What do you think about me? |
| 38. I am going on a nice, long vacation | What do you think about me? |
| 39. I got fired for being late just once | What do you think about me? |
| 40. I have found a new job | What do you think about me? |
| 41. I watched a drama film in which
the main character died | What do you think about me? |
| 42. I have lost my wallet | What do you think about me? |

- | | |
|--|-----------------------------|
| 43. A car has been following me at night
for a very long time now | What do you think about me? |
| 44. I have won tickets to see my favourite band | What do you think about me? |
| 45. I saw my bicycle being stolen | What do you think about me? |
| 46. The volcano near my house is erupting | What do you think about me? |
| 47. I just heard my favourite TV-show got cancelled | What do you think about me? |
| 48. I got blamed for somebody else's mistake | What do you think about me? |

Appendix B 4

Experiment 2 – List 4

- | | |
|---|-------------------------------|
| 1. You have just bought a new car | What do you think about me? |
| 2. You are lost in the middle of a forest | What do you think about me? |
| 3. You heard a knock on the door at midnight,
but there was no one there | What do you think about me? |
| 4. Your phone got stolen last week | What do you think about me? |
| 5. You are making a delicious looking cake | What do you think about me? |
| 6. Your favourite sports team lost the match | What do you think about me? |
| 7. You have won the jack pot in the lottery | What do you think about me? |
| 8. You did not pass the English test | What do you think about me? |
| 9. You lost the game because your opponent
was cheating | What do you think about me? |
| 10. You did not know it is raining so hard outside | What do you think about me? |
| 11. You were in an earthquake last year | What do you think about me? |
| 12. Your friend just lied to you | What do you think about me? |
| 13. I got the highest grade of the whole class | What do I think about you? |
| 14. I have a flat tire on my bicycle | What do I think about you? |
| 15. I stepped in dog poo where no dogs are allowed | What do I think about you? |
| 16. My entire street is without power once again | What do I think about you? |
| 17. I heard a whisper in my ear,
but there was no one there | What do I think about you? |
| 18. I woke up sweating from a terrible nightmare
last night | What do I think about you? |
| 19. My headache is finally over | What do I think about you? |
| 20. My phone's battery is dead
and I need to make a call | What do I think about you? |
| 21. I saved the last piece of cake,
but someone else ate it | What do I think about you? |
| 22. I have finally found my keys | What do I think about you? |
| 23. I watched the most terrifying horror film last night | What do I think about you? |
| 24. I have completely forgotten to prepare for this test | What do I think about you? |
| 25. You are eating your favourite food tonight | What do I think about myself? |
| 26. Your mom forgot to pick you up
from school yesterday | What do I think about myself? |
| 27. You are about to get a tooth pulled at the dentist's | What do I think about myself? |

- | | |
|--|-----------------------------------|
| 28. Your neighbour always plays really loud music, no matter your complaints | What do I think about myself? |
| 29. You do not want to go to school today | What do I think about myself? |
| 30. Your mail is always late on Thursdays | What do I think about myself? |
| 31. An angry dog chased after you | What do I think about myself? |
| 32. You set a new high score in the arcade yesterday | What do I think about myself? |
| 33. You will probably get a promotion | What do I think about myself? |
| 34. You have lost your keys | What do I think about myself? |
| 35. You feel like breaking a vase | What do I think about myself? |
| 36. You are walking on very thin ice | What do I think about myself? |
| | |
| 37. I have to ride my bicycle through a heavy storm | What do you think about yourself? |
| 38. I am going on a nice, long vacation | What do you think about yourself? |
| 39. I got fired for being late just once | What do you think about yourself? |
| 40. I have found a new job | What do you think about yourself? |
| 41. I watched a drama film in which the main character died | What do you think about yourself? |
| 42. I have lost my wallet | What do you think about yourself? |
| 43. A car has been following me at night for a very long time now | What do you think about yourself? |
| 44. I have won tickets to see my favourite band | What do you think about yourself? |
| 45. I saw my bicycle being stolen | What do you think about yourself? |
| 46. The volcano near my house is erupting | What do you think about yourself? |
| 47. I just heard my favourite TV-show got cancelled | What do you think about yourself? |
| 48. I got blamed for somebody else's mistake | What do you think about yourself? |

Appendix C – Written instructions for Experiment 1 and 2

Instructie spel “gevoel”

Dit is een Engels spel waarbij je Engelse zinnen te horen en te lezen krijgt. Deze zinnen zijn hypothetische gebeurtenissen die ik heb meegemaakt, of die jij hebt meegemaakt. De zinnen kan je één voor één lezen op het scherm, waarbij ik ze ook voorlees. Het is jouw taak om aan het einde van ieder zinnetje te raden welke emotie het beste bij de gebeurtenis past.

Een belangrijke spelregel is dat ik de gebeurtenissen zo neutraal mogelijk vertel, om zo min mogelijk voor te zeggen. Je kunt dus niet aan mijn stem horen of op mijn gezicht zien wat voor emotie het beste bij het zinnetje past.

Je kunt kiezen uit vier emoties. Deze vier emoties zijn altijd hetzelfde en blijven altijd op het scherm staan. De vier emoties zijn

Happy (Blij)	Sad (Verdrietig)	Angry (Boos)	Scared (Bang)
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Na de beschrijving van een gebeurtenis vraag ik aan jou hoe jij denkt dat ik me voel, of hoe ik denk dat ik me voel, of hoe jij denkt dat jij je voelt, of hoe ik denk dat jij je voelt.

Voorbeelden van het spel in het Nederlands:

- Sebastiaan: “Al mijn vakantiefoto’s zijn mislukt.”
- Sebastiaan: “Wat denk jij over mij?”
- Jij: “**Ik denk dat je verdrietig bent.**”
- Sebastiaan: “Al mijn vakantiefoto’s zijn mislukt.”
- Sebastiaan: “Wat denk ik over mijzelf?”
- Jij: “**Jij denkt dat je verdrietig bent.**”
- Scenario: Al jouw vakantiefoto’s zijn mislukt.
- Sebastiaan: “Wat denk jij over jezelf?”
- Jij: “**Ik denk dat ik verdrietig ben.**”
- Scenario: Al jouw vakantiefoto’s zijn mislukt.
- Sebastiaan: “Wat denk ik over jou?”
- Jij: “**Jij denkt dat ik verdrietig ben.**”

Jij geeft dus altijd antwoord op mijn vraag in de vorm van het onderstreepte voorbeeld. Gebruik altijd hele zinnen en **let op dat je een vorm van het woord ‘think’ gebruikt.**

Er is geen goed of fout antwoord, beslis zelf welke emotie het beste bij de desbetreffende gebeurtenis past. Dit is ook het enige waar naar gekeken wordt, niet naar je uitspraak of grammatica. Er geldt ook geen tijdslimiet, dus er is geen druk. Probeer wel zo spontaan mogelijk antwoord te geven. Als je een antwoord hebt gegeven kan je zelf doorklikken naar de volgende slide door op de spatiebalk te drukken. Dan zal ik het zinnetje weer voorlezen. Als je wilt kan ik een zin meerdere keren herhalen.

Aarzel niet om vragen te stellen, ook tijdens het spel. Ik leg je graag de betekenis van een woordje of zinnetje uit.

Good luck and have fun!