Master's thesis

NTNU
Norwegian University of Science and Technology
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L1 Transfer of Island Constraints

A Study of L1 Norwegian L2 English Speakers' Island (In)Sensitivity

Master's thesis in English Linguistics
Supervisor: Anne Dahl and Dave Kush
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ABSTRACT

This thesis explores island constraints in the L2 English of Norwegian learners, in connection to issues of transfer and learnability. Despite claims of universal treatment, current research has found cross-linguistic differences; English rejects all island constraint violations, while Norwegian accepts some of the same violations. Under standard views on transfer, the insensitivity to island constraints in the L1 Norwegian speakers' grammar would predict a corresponding (if slightly reduced) insensitivity in the L2 English grammar. Accordingly, this thesis aims to uncover whether the participants' L2 grammar displays parametric settings equivalent to the suggested L1 grammar, i.e., whether island constraints and island insensitivity are subject to transfer. The research focused on three syntactic constructions: embedded questions, relative clauses and subject phrases. Additionally, the thesis examines whether the universal account of island constraints can be maintained despite cross-linguistic differences.

The L1 Norwegian and L2 English grammar of an experimental group and the L1 English grammar of a control group were examined through acceptability judgment tests. The tests were developed in accordance with the factorial design (Sprouse, 2007). Analysis of the judgments resulted in inconclusive findings regarding learnability issues in SLA. However, based on the experiments' results, previous research and current theories on cross-linguistic influence, I argue for indications of transfer in the participants' L2 grammar, aligning with the FT/FA-model (Schwartz & Sprouse, 1994, 1996). Additionally, the results align with previous findings suggesting an extended complementizer domain in Norwegian (e.g., Nyvad, Christensen, & Vikner, 2015), which enables a universal account of syntactic islands, despite cross-linguistic differences.

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CONTENTS

FIGURES AND TABLES

ABBREVIATIONS AND SYMBOLS

*	Unacceptability/ungrammaticality
A’	Non-argument
CAH	The Contrastive Analysis Hypothesis
CP	Complementizer phrase
FA/NT	The Full Access/No Transfer Model
FT/FA	The Full Transfer/Full Access Model
IHS	The Initial Hypothesis of the Syntax
IL	Interlanguage (mostly referred to as L2 grammar)
L1	First language
L2	Second language (any language learned after the L1)
MTH	The Minimal Trees Hypothesis
NL	Native language
RC	Relative clause island
SLA	Second language acquisition
SpecX	The specifier position of an X-phrase
SUB	Subject island
TL	Target language
TP	Tense phrase
UG	Universal Grammar
VP	Verb phrase
WH	Embedded question island (also: EQ)

1 INTRODUCTION

1.1 THESIS TOPIC AND BACKGROUND

The main aim of this thesis is to uncover the significance of the first language (L1) in the acquisition of a second language (L2). More specifically, the thesis aims to uncover whether there is evidence of transfer of island constraints in L1 Norwegians' L2 English. By uncovering this, the thesis hopes to make a contribution to the understanding of the learnability problems set forth in The Logical Problem of Language Acquisition and the Poverty of the Stimulus argument (White, 2003). The learnability problems can be summarized as follows: During language acquisition, a language learner is exposed to a limited amount of utterances through interaction with the target language (TL). Since language is a non-finite system, the language learner derives hypotheses that apply to the grammatical system as a whole, based on minimal input. However, the input could in theory be compatible with a number of incorrect hypotheses (Pinker, 1989), necessitating some innate constraints on language acquisition, which this thesis assumes to be UG (Chomsky, 1965). For second language acquisition (SLA), another component figures prominently in the learnability problem as well; the L1. The language learner already possesses linguistic knowledge when faced with an L2, which presents the question of whether the L1 grammar influences SLA.

To answer the learnability questions surrounding the acquisition of an L2, the syntactic phenomenon of islands constraints is explored. Islands are linguistic constructions which it is impossible to move syntactic phrases out of (e.g., Chomsky, 1973; Ross, 1967). The constructions were suggested to be universals, entailing consistent treatment of islands across languages. However, previous research has suggested that cross-linguistic differences exist and that English does not accept extraction from any islands, whereas Norwegian and other mainland Scandinavian languages seem to accept extraction out of some islands (e.g., K. R. Christensen, Kizach, & Nyvad, 2013; K. R. Christensen & Nyvad, 2014; Kush, Lohndal, & Sprouse, 2018, 2019; Maling & Zaenen, 1982). Thus, the island constraints seem especially fitting for an investigation of SLA for two reasons. Firstly, the suggested cross-linguistic differences provide a basis for discussing the universal account of islands in relation to innate constraints on its own. Secondly, the specific cross-linguistic differences between English and Norwegian enable a discussion of L1 influence on L2 grammar, in this case, L1 Norwegian's influence on L2 English.

1.1.1 Thesis experiment

Despite the growing body of research on the island constraints as a linguistic phenomenon, little attention has been given to transfer of such structures. One (forthcoming) study has examined cross-linguistic influence in L1 Norwegian L2 English; Kush and Dahl (2020). As is described in length in section 2.3, their findings suggest transfer of insensitivity to island constraints. The current thesis diverges from Kush and Dahl (2020) by investigating a younger age group, namely teenagers. Considering that English is an independent subject in school from grade 1, in addition to the extensive use of English in culture and media, the participants are probably proficient enough to

understand the rather complicated sentences containing island structures, but have yet to fully acquire the L2 grammar. Thus, exploring the participants' island-sensitivity can (i) provide answers on transfers' role in an intermediate stage of L2 acquisition, (ii) possibly indicate whether learners are able to reset their L2 grammar based on experience with the TL, and (iii) possibly outline potential research questions regarding the acquisition of island constraints.

Thus, the topics of interest relate to learnability issues in SLA and the universality of islands. The thesis aims to uncover whether the island (in)sensitivity of L1 Norwegian speakers transfer to their L2 English grammar, and whether the universal account of islands is applicable considering the cross-linguistic differences. In an attempt to answer these questions, acceptability judgment tests, which provide data on structures that are too rare in everyday language to learn about them in any other way (Schütze & Sprouse, 2017), were given to a group of L1 Norwegian L2 English speakers and a control group of L1 English speakers. The experimental group were tested in both Norwegian and English.

1.2 THESIS STRUCTURE

As specified, data on island constraint violations in L1 Norwegian and L2 English was collected through acceptability judgement tests. Discussing the results of these experiments would not be interesting without a theoretical background and a review of previous research findings. Thus, the theoretical understanding necessary for both designing a study and discussing the implications of its results is presented in chapter 2. The first section of chapter 2 reviews the syntactical part of the thesis; movement (constraints) in language and the island constraints. The second part of the chapter deals with SLA and models of transfer. Finally, a review of previous research on transfer of island constraints completes the chapter. Chapter 3 considers the methodical concerns of the data collection. Firstly, the participants and the two groups which they are part of are presented. Then, the factorial design, which was employed in the experiment, is reviewed, followed by a description of the items for the acceptability judgment tests. The following section outlines the procedure of the experiment. Finally, the chapter briefly comments on how the data was analyzed and some ethical concerns. Chapter 4 presents the results of the experiment. Firstly, the reasoning behind excluding some of the participants from analysis is explained. Then, the results of the acceptability judgment tests are presented; focusing both on group and individual analysis. Chapter 5 discusses the results of the experiment, connects them to the theoretical background and explores the implications of the findings in light of learnability issues and L2 acquisition. Finally, chapter 6 summarizes the main findings of the thesis and offers a conclusion. Additionally, the limitations of the present study are discussed and suggestions for further research are given.

2 THEORETICAL BACKGROUND

This thesis is written within the generative framework (e.g., Chomsky, 1993, 2014). I elaborate on what that means below. Furthermore, the current thesis presupposes that possible constraints in language acquisition are part of Chomsky's UG (1965).

2.1 ISLAND CONSTRAINTS

Discussing a complicated syntactic phenomenon such as island constraints requires an understanding of the more basic theoretical foundations of movement in language. Accordingly, this chapter presents the basic syntactic considerations and analyses of movement prior to exploring movement constraints and the specific islands relevant for the thesis.

A theory of phrase structure is necessary to review movement and islands. This thesis adopts X'-theory (x-bar theory) (Chomsky, 1965, 1970, 1973; Jackendoff, 1977). X'-theory and the X'-schema attempt to explain all syntactic phrases through a uniform analysis: the smallest part is the head, X°, which first projects X', where it can combine with an (optional) complement; additional intermediate X' projections can be generated for arguments or optional adjuncts; and finally, the topmost X' combines with a specifier to create the maximum projection of the phrase, marked XP (Haegeman, 1994, p. 105). This structure also provides the template for phrases that make up the structure of full clauses (and sentences). The topmost node is a complementizer phrase (CP). The CP selects a tense phrase (TP) as its complement. Finally, the TP selects a verb phrase (VP), which in turn selects the phrases that vary according to the overt words, creating the full clause (Haegeman, 1994, pp. 109-114; 116). The X'-schema and the CP-TP-VP structure are presented in Figure 1.

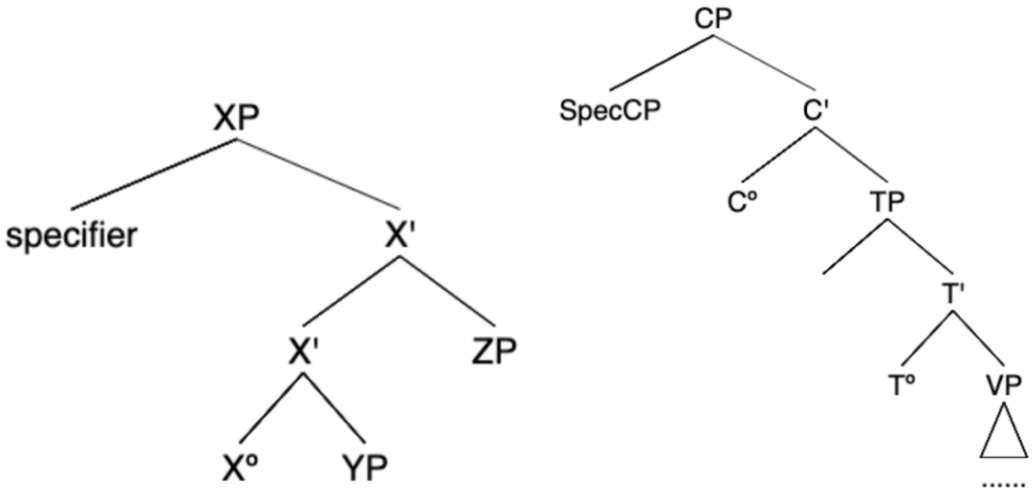

Figure 1: The X'-format (adapted from Carnie, 2009, p. 118) and the CP-TP-VP structure.

2.1.1 Movement

Faced with a sentence (1a), the naïve language user would not think anything special about the order of the constituents:

(1) a. What did David break?

However, to a syntactician, it is apparent that the constituent *what* has been moved. There are several arguments behind this line of reasoning, where one of the more compelling is related to theta-theory (θ-theory) (Chomsky, 1993). A verb/predicate, like *break* in (1a) takes two complements/arguments; AGENT and THEME. The theta-grid displaying its structure is represented in (1b-c):

(1) b. break$_V$: <AGENT> <THEME>

c. David$_{AGENT}$ broke$_V$ the window$_{THEME}$

If either of the predicate's required arguments are omitted from the sentence, e.g., missing an object compliment as in (1d), the resulting sentence is ungrammatical:

(1) d. *David$_{AGENT}$ broke$_V$

To explain this ungrammaticality, Chomsky (1981, as cited in the 7th edition: 1993) formulated a requirement, the *Theta Criterion*, which applies to all sentences: individual verbs assign different numbers of theta-roles, and "each argument bears one and only one θ-role, and each θ-role is assigned to one and only one argument" (p. 36). The theta-role assignment is a local operation. This entails that a predicate can only assign theta-roles to elements within the maximal projection of the VP (Radford, 2006). Furthermore, theta-roles are assigned at theta-positions, where each complement position is such a position. In addition, "a θ-role may (though it need not) be assigned in the position of the subject" (Chomsky, 1993, p. 36). For sentence (1c), both arguments are local to the predicate and in theta-positions, entailing that role assignment is possible. Thus, theta-theory accounts for the grammaticality of sentence (1c) and the ungrammaticality of sentence (1d), where the latter is missing a required argument, the THEME.

Now, returning to sentence (1a): In (1a) it appears like *break* does not have an object complement and therefore a THEME, since, unlike (1c), there is no argument to the right of the predicate. Furthermore, the entity *what* in SpecCP is no longer in a local relation to the verb, i.e., not within the VP or a theta-position. Presumably, this would entail that the theta-criterion is violated and that the sentence is ungrammatical. The solution to this problem is movement. Following the Locality Principle, i.e., that grammatical operations are local (Radford, 2006, p. 17), the DP *what* is hypothesized to originate in the THEME's original position as the complement of the verb, where it receives its theta-role. The DP is subsequently moved to the non-theta position SpecCP in the derivation of sentence (1a) (Radford, 2006, p. 131).

Three aspects of this movement are interesting to note. Firstly, since the wh-phrase receives its theta-role in its original position and the theta-criterion specifies that no

argument can receive more than one role, the wh-phrase cannot be moved to a theta-position. Accordingly, the wh-movement illustrated in (1a) is referred to as non-argument, A'-movement (Haegeman, 1994).[1] Secondly, A'-movement leaves a trace, illustrated in (1e):

(1) e. What$_i$ did David break t_i?

The trace is marked by *t* and an index; $_i$. The trace represents the original location of the moved element, which in analyses is marked by an index identical to the trace's index. This enables an interpretation of the wh-word as the original complement of the verb. The trace occupies the moved phrase's previous position, entailing that other constituents cannot be generated or moved to that position. Thus, movement of constituents creates a 'gap' in the construction (Radford, 2006). Finally, A'-movement is unbounded (Haegeman, 1994; Radford, 2006). Even though movement from a deeply embedded clause presumably imposes a strain on short-term memory and language processing, there is no theoretical limit on the number of embedded clauses which the moved element can cross. In the following examples, sentence (2a) involves movement to a local SpecCP, i.e., within the immediate clause. Sentence (2b) displays movement across two embedded clauses:

(2) a. [What$_i$ did the girl eat t_i on warm summer days]?

b. [What$_i$ did Liza say [that Ron suggested [that the girl ate t_i on warm summer days]]]?

Thus, a constituent can unboundedly move across several clauses without losing the association to its gap, i.e., the argument position (Goodluck & Rochemont, 1992).

However, not all movement operations result in grammatical sentences, and several linguists have proposed restrictions upon A'-movement.

2.1.2 Constraints on movement

As established by Ross (1967), there exist some syntactic constructions where long-distance movement results in unacceptable sentences. Moreover, certain syntactic environments block movement in general. These constructions were termed islands. Several structures have been suggested as islands, both by Ross and following syntacticians: complex NPs (3a), embedded questions (3b), relative clauses (3c) and sentential subjects (3d), amongst others.[2]

[1] The examples used illustrate A'-movement of wh-phrases. It should be noted that movement of other constituents, e.g., in relativization, topicalization etc. is possible as well. A'-movement is simply movement into a non-argument position, SpecCP (Haegeman, 1994; Åfarli & Eide, 2003).

[2] The examples in (3) are adapted versions of island violations from Kush et al. (2018).

(3) a. *What$_i$ did you make the claim [that Sigrid made t$_i$]?
b. *What$_i$ do you wonder [who made t$_i$]?
c. *What$_i$ did you meet the woman [who made t$_i$]?
d. *What$_i$ did you think [that t$_i$ was sitting on the counter] was practical?

In his thesis, Ross (1967) identified constraints that apply to the specific islands, e.g., the complex NP constraint, the sentential subject constraint and the coordinate structure constraint (pp. 241; 118; 158). These constraints were intended as universals, i.e., they were suggested to apply across all languages. Even though they seemed to reflect real world language, he received some criticism; the constraints were too specific. This would seem especially important within the generative approach to linguistics, where universals play a significant role both in syntactic analysis and the learning perspective (see chapter 2.2 for further details). For this reason, Chomsky argued for a theoretical approach explaining the unacceptability of multiple different island constructions under the same analysis.

Chomsky (1973) proposed the *Subjacency Condition* as an attempt to explain the inability to A'-move constituents out of some island constructions. Similar to the constraints of Ross (1967), Subjacency was suggested to be universal and apply to all language users and all languages. In short, the Subjacency Condition states that constituents cannot cross more than one bounding node at a time during A'-movement. The bounding nodes were originally defined as S and NP, which translate to TP and DP under Minimalist phrase structure (the modern-day successor to the extended standard theory and GB). To account for long-distance movement which apparently crosses more than one bounding node, Chomsky suggested that constituents have the ability to move successive-cyclically, i.e., a step-by-step movement where the constituent repeatedly moves to the closest landing site; SpecCP. Thus, an entity can cross one bounding node during each movement operation, allowing for long-distance dependencies. The moved constituent uses the specifiers of local CPs (previously called COMP positions) as intermediate landing sites (Belikova & White, 2009; Goodluck & Rochemont, 1992; Nyvad et al., 2015).

Applying these theoretical claims to sentence (2b) and (3a), illustrated in Figure 2 and Figure 3, where the bounding nodes are marked by long diagonal lines, it seems that Subjacency can account for the grammaticality of the former and the ungrammaticality of the latter.

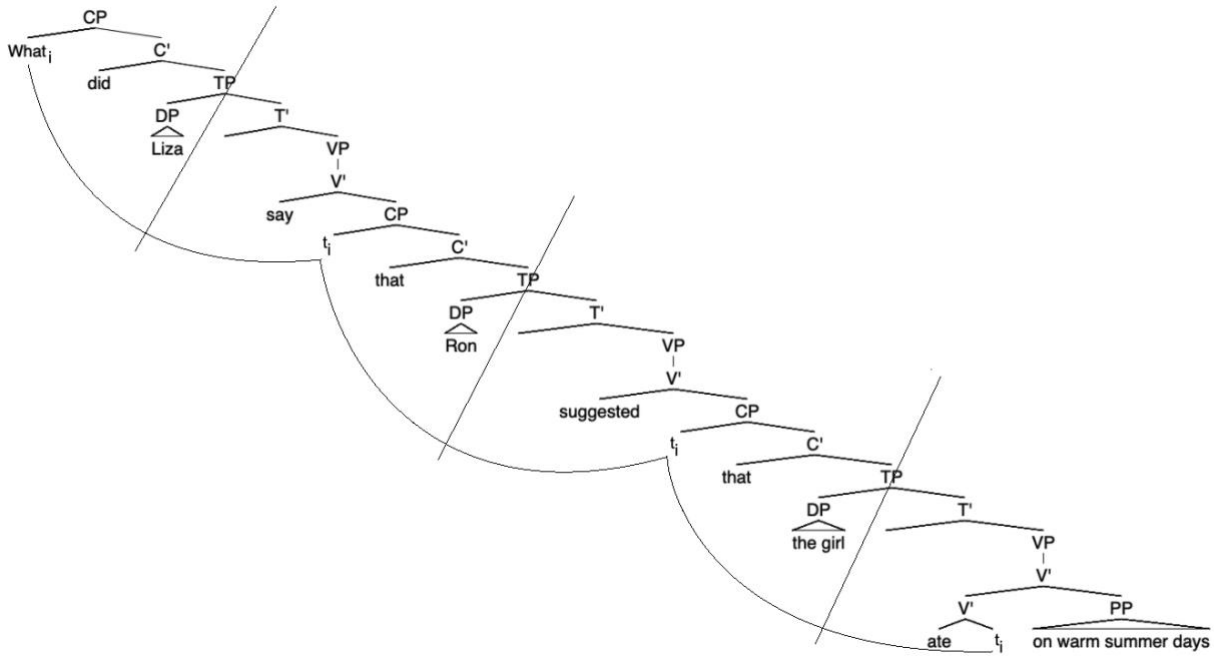

Figure 2: Sentence diagram of "What did Liza say that Ron suggested that the girl ate on warm summer days?"

Figure 2 illustrates how the long-distance A'-movement of *what* in sentence (2b) would proceed under the Subjacency Condition. The constituent *what* is able to move from the embedded clause and into the matrix clause by cyclically moving into the empty specifier positions of the local CPs, crossing one, and only one, bounding node at a time. For each movement operation, the wh-movement leaves a trace in (and thus occupies) its intermediate landing positions.

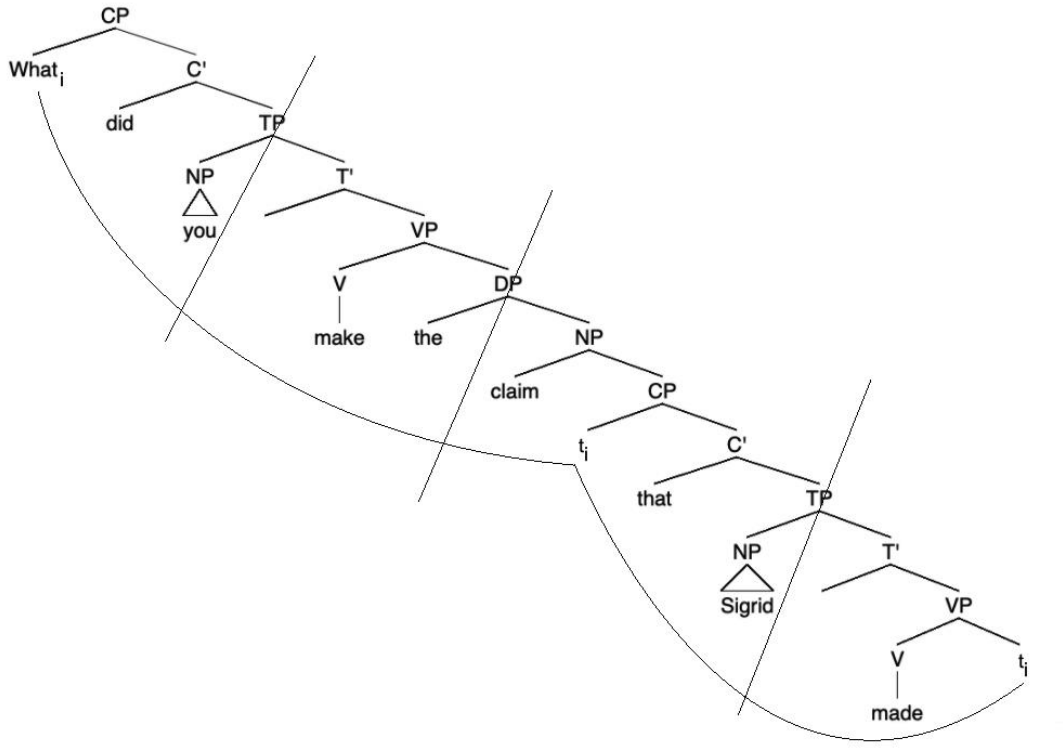

*Figure 3: Sentence diagram of *"What did you make the claim that Sigrid made?"*

On the other hand, Figure 3 illustrates why constituents cannot move out of the complex NP-island following the limitations set forth by the Subjacency Condition. Movement of the DP *what* from the VP to SpecCP of the embedded clause is possible, but the second movement operation required, movement into the matrix SpecCP, crosses two bounding nodes; the DP headed by *the,* and the TP headed by *you*, which violates the Subjacency condition.

Three aspects of the constraints on movement are important to note. First of all, even though the Subjacency condition is an acknowledged and relatively conventional analysis of island constraints, it has received some criticism. Belikova and White (2009) state that the Subjacency condition is "both too strong and too weak" (p. 207), in that some sentences which should have been deemed ungrammatical are in fact acceptable and vice versa. This is further discussed in the following sub-chapters, focusing especially on the cross-linguistic differences which are, but should not be, present if the Subjacency condition is universal and island effects are simply an effect of Subjacency. Secondly, even though this thesis makes use of Ross' generalizations and Chomsky's Subjacency condition as the means of analysis, there has not been any definite answer as to how one should analyze the ungrammatical movement which results in island constraint violations. Several other approaches have been presented, e.g., Barriers, Relativized Minimality and Structure-building (Sprouse, Caponigro, Greco, & Cecchetto, 2016).[3] Apart from a brief explanation of Condition on Extraction Domains (CED) (Huang, 1982), this thesis make use of Subjacency alone, and other means of analysis are not discussed any further. Finally, the examples given so far have all been either grammatical or ungrammatical. However, it is not the case that day-to-day language is either acceptable or non-acceptable, and in some cases, the island sentences could instead be termed questionable. In technical terms; not all islands are equally opaque (Polinsky et al., 2011), i.e., completely block association between the moved element and its trace. The difference between the ungrammatical and the more questionable island violations has been termed strong and weak islands, respectively.

The following sub-chapters go into greater depth regarding three islands; embedded question, relative clause and subject islands. In addition to considerations which are presented in chapter 3, the two former were chosen due to the suggestions that speakers of English and Norwegian treat the island constraint differently (e.g., Goodluck & Rochemont, 1992; Maling & Zaenen, 1982), while the subject island was chosen since there seems to be no cross-linguistic difference in movement out of such constructions. The final sub-chapter of 2.1 explores possible theoretical analyses for the suggested cross-linguistic differences.

[3] In addition, the increased processing demands of islands have been suggested as the main reason for rejection of such structures, and researches such as K. R. Christensen et al. (2013) have suggested that there are no constraints related to the islands, and that "instead, reduced acceptability of wh-movement out of an embedded wh-question (…) is due to the difficulty of processing two wh-dependencies (…) simultaneously" (p. 53). Semantic constraints have also been argued to influence the acceptance of islands (e.g., Engdahl, 1997; Erteschik-Shir, 1973). Ultimately, the relative acceptance of multiple filler-gap dependencies in Norwegian (e.g., K. K. Christensen, 1982) contradicts both arguments.

2.1.3 Embedded Question Islands ("Wh-Islands")

Embedded complement clauses are subordinate clauses that occur as the complement of the matrix clause's verb that are often used to change direct speech to indirect speech.

(4) a. [Adam told me [that Sarah had sold the cookies]].
b. [Adam told me [who had sold the cookies]].

Both sentences in (4) contain an embedded clause as a complement to *told (me)*; (4a) contains a declarative clause introduced by the complementizer *that,* and (4b) contains an interrogative clause introduced by the wh-phrase *who*. Subjecting each of the sentences to movement out of the embedded clause reveals a difference in terms of acceptability:

(4) c. [What$_i$ did Adam tell me [that Sarah had sold t_i]?
d. *[What$_i$ did Adam tell me [who$_i$ t_i had sold t_i]?

As is clear from the above examples, A'-movement originating inside declarative embedded clauses results in grammatical sentences (4c). However, the interrogative embedded clauses yield unacceptability when subjected to extraction (4d). Analyzing the sentences under the Subjacency Condition reveals why (the relevant bounding nodes are marked with BN):

(5) a. [$_{CP}$ [$_{DP}$ what$_i$] [$_{C'}$ did$_j$ [$_{TP}$ *BN* [$_{DP}$ Adam] [$_{T'}$ t_j [$_{VP}$ [$_{V'}$ tell [$_{DP}$ me]] [$_{CP}$ t_i [$_{C'}$ [$_{TP}$ *BN* [$_{NP}$ Sarah] [$_{T'}$ had [$_{VP}$ [$_{V'}$ sold [$_{DP}$ t_i]]]]]]]]]]]
b. *[$_{CP}$ [$_{DP}$ what$_i$] [$_{C'}$ did$_j$ [$_{TP}$ *BN* [$_{DP}$ Adam] [$_{T'}$ t_j [$_{VP}$ [$_{V'}$ tell [$_{DP}$ me]] [$_{CP}$ [$_{DP}$ who$_k$] [$_{C'}$ [$_{TP}$ *BN* t_k [$_{T'}$ had [$_{VP}$ [$_{V'}$ sold [$_{DP}$ t_i]]]]]]]]]]]

The wh-phrase of (5a), *what*, is able to move successive-cyclically from its original position, via the available local SpecCP and into the matrix SpecCP. However, in sentence (5b), the same wh-phrase cannot move into the matrix SpecCP. Since the embedded clause is interrogative, the embedded SpecCP is already occupied by *who*, entailing that *what* has to cross two bounding nodes in one movement operation.

Due to the reduced acceptability of extracting a constituent out of them, embedded questions are commonly referred to as islands. Since the moved element in an embedded question is a wh-phrase, the construction is often referred to as wh-islands. In his original work, Ross (1967) did not identify embedded questions as islands. More recent work has classified the embedded question as a weak island, i.e., one that is not completely opaque, often resulting in questionable sentences. Nevertheless, research has shown that movement out of embedded questions results in reduced acceptability and that the structure is currently treated as an island in English (K. R. Christensen et al., 2013; Maling & Zaenen, 1982; Sprouse, Wagners, & Philips, 2012).

However, interestingly, in Norwegian, the same sentences seem to be grammatical independently of whether the embedded clause is declarative (6a) or interrogative (6b), despite the similar syntax of English and Norwegian. This cross-linguistic difference has also been suggested in previous research (e.g., K. R. Christensen et al., 2013; Kush et

al., 2018; Maling & Zaenen, 1982).

(6) a. [Hvem$_i$ fortalte Adam meg [at t$_i$ hadde solgt kjeksene]]?

b. [Hva $_i$ fortalte Adam meg [hvem$_i$ t$_i$ som hadde solgt t $_i$]?

Thus, for English, movement out of embedded questions is unacceptable and results in ungrammatical sentences. Contrastively, for Norwegian, it seems that A'-movement out of embedded questions is permitted and that such sentences are perceived as grammatical, even though they may be harder to parse. This cross-linguistic difference poses a problem for the universal analysis of the island constructions. If the Subjacency condition is a universal constraint, in agreement with the claim of Chomsky (1973), all language users, independent of which language they speak, should have this condition as an innate predisposition (specifically, as a part of UG), meaning that all languages should treat these island constraint violations similarly.

2.1.4 Relative Clause Islands

Similar to the embedded question, the relative clause is an embedded CP within a matrix CP. The analysis of embedded questions and relative clauses follow similar steps and can be difficult to distinguish. However, there is a difference which separates them; the positioning of the relativized phrase in the relative clause (7a) and the wh-phrase of the embedded question (7b):

(7) a. RC: relativized DP [$_{CP}$ … [$_{C'}$ wh-phrase/*that*/Ø [$_{TP}$ …

b. EQ: [$_{CP}$ wh-phrase [$_{C'}$ *that*/Ø [$_{TP}$ …

(Åfarli, 1997, p. 157: my translation)
Note: the labels were changed to those currently used (e.g., S'' to CP).

The analysis in (7) illustrates how the nominal which the relative clause modifies is placed outside the dependent clause and is also related to an obligatory gap/trace within the dependent clause. Furthermore, while the embedded question functions as a complement of a verb, the relative clause is a dependent clause used to modify an antecedent, most commonly realized as a postmodifier in a DP (Hasselgård, Johansson, & Lysvåg, 1998; Åfarli, 1997).

Relative clauses are usually introduced by a relative pronoun. In English, the pronouns are *who, whom, which, whose* (wh-relative) and *that* (that-relative). Norwegian only has one relative pronoun; *som*. In some constructions, both in English and Norwegian, the relative pronoun is non-overt, which is the zero relative; Ø. The relative pronoun, including the zero-relative pronoun, has an identical syntactic function in the clause as its antecedent would have had in the same construction (Hasselgård et al., 1998; Åfarli, 1997). Thus, for English there are three different relative clauses: the wh-relative (8a), the that-relative (8b) and the zero-relative (8c). The Norwegian relative clauses only

take two forms; [4] a relative clause introduced by *som* (8d) and the zero-relative (8e):

(8) a. She knows a teacher [*who*$_i$ t$_i$ works at that school].
b. I know a man [*who*$_i$ *that*$_i$ t$_i$ sells those flowers].
c. I got a postcard from someone [ø$_i$ I used to work with t$_i$].
(Hasselgård et al., 1998, p. 341)
d. Jeg kjenner en mann [*som*$_i$ t$_i$ selger de blomstene]. *Equivalent to (8b)*
e. Jeg fikk et postkort fra noen [ø$_i$ jeg pleide å jobbe med t$_i$]. *Equivalent to (8c)*

For both languages, the base position of the relative operator is inside the relative clause, cf. the trace's placement in the sentences in (8). During the derivation of the sentence, the relative pronoun moves to SpecCP and leaves a required gap in its original position. For the English wh-relative in (8a), the relative pronoun *which* replaces the DP *a teacher* and is subsequently moved to SpecCP of the relative clause, leaving a gap in its initial position (Radford, 2006, p. 142). In contrast, Norwegian syntax requires deletion of the relativized position's correlate, i.e., the wh-relative which is moved to SpecCP of the embedded clause, resulting in the absence of a wh-relative (Åfarli, 1997, p. 159). The zero-relative exemplified in (8b) and (8e) is analyzed in a similar manner, but differs in that after movement the relative pronoun is deleted (ibid., p. 160). Finally, in the English that-relative, (8c), the complementizer *that* is generated as the head of a CP. Additionally, a relative operator like a wh-relative pronoun is generated inside the relative clause and is subsequently subjected to the same movement as described for the wh-relative. When there is a head in Cº, the wh-phrase is not pronounced, resulting in the that-relative (Wilder, 2014). For Norwegian, the relative pronoun in Cº, *som*, is obligatory only in relative clauses where the highest subject is relativized; resulting in the *som*-relative and the zero-relative (Åfarli, 1997, pp. 156-158).

Similar to the embedded questions, relative clauses have been claimed to block A'-movement. A'-movement of an entity from a relative clause in English results in sentences that would be judged unacceptable by native speakers:

(9) a. *What$_i$ do I know a man [*that* sells t$_i$]?

In fact, English does not allow extraction out of relative clauses at all (Lindahl, 2014). As noted by Åfarli and Eide (2003), movement of a constituent out of a relative clause should yield unacceptability in Norwegian as well, due to the universality of the Subjacency Condition. However, they, and other linguists, have suggested that

[4] Arguably, Norwegian also have a *der*-relative (introduced by the relative-adverb *der* (*there*) (Åfarli, 1997). This kind of relative is not pursued any further in this thesis.

Norwegian speakers do, at least in some cases, accept such movement (Maling & Zaenen, 1982; Taraldsen, 1982; Åfarli & Eide, 2003).[5] In contrast to the English sentence in (9a), it is in fact possible to extract a constituent from the same relative clause in Norwegian (9b):

(9) b. Hva$_i$ kjenner jeg en mann som [selger t$_i$]?

In conclusion, relative clauses should, according to a universalist view of clause structure and Subjacency, block all extraction, which is true for English. Contrary to this, Norwegian seems to accept some of these extractions, suggesting that there is a cross-linguistic difference.

2.1.5 Subject Islands

The subject position, SpecTP, is not restricted to simple DPs/NPs (henceforth NP for simplicity). In fact, both complex NPs and entire clauses can occupy this position. The simple subject is a bare NP (with or without determiner) (10a), whereas the complex subject can consist of either a complex NP (e.g. NP + PP) (10b) or a full CP (10c)[6].

(10) a. [The recipe] was sitting on the counter.
b. [The recipe for cookies] was sitting on the counter.
c. [That the recipe was sitting on the counter] was convenient.

The latter of these, (10c), is referred to as a sentential subject. A sentential subject is a finite clause, which "appears to occupy the subject position" (Lohndal, 2014, p. 315). Even though sentences containing sentential subjects are accepted, they are very rare (Engdahl, 1982), which means that their acceptability/unacceptability could easily be influenced by frequency. Therefore, and for reasons presented in section 3.1.2, neither

[5] In research on relative clauses in Norwegian, Kush et al. (2018) found island effects for wh-movement out of relative clauses, but Kush et al. (2019) found that Norwegian speakers accept topicalization dependencies from relative clauses more often, despite there still being an island effect also for Norwegian relative clauses. In fact, it seems that there are certain relative clauses which it is unacceptable to A´-move out of in Norwegian. Maling and Zaenen (1982, pp. 232-233) present an example of an island constraints violation that Norwegians judge unacceptable (9a):

(11) a. *Lisa$_i$ snakker jeg med den gutten som kysset ___$_i$.
Lisa speak I with that boy.DEF that kissed.
*Lisa, I speak with the boy that kissed.

Maling and Zaenen (1982) suggests that this unacceptability is tied to semantics rather than syntax. In contrast to the sentences in (8a-b), which concern *the flowers*, the sentence in (9) does not deal with the topicalized NP *Lisa.* Interestingly, these findings imply that extraction from relative clauses vary in acceptability.

[6] The examples in (10) and (12) are adapted versions of island violations from Kush et al. (2018).

they nor the bare NP subjects are discussed. Instead, this sub-chapter focuses on sentences such as (10b): complex subjects consisting of a NP with PP complements.

As with the embedded questions and relative clauses, there are some restrictions related to movement out of the subject position. Extracting the full NP+PP subject is acceptable (12a/c), but extracting a NP from inside the PP leads to unacceptability (12b/d):

(12) a. Which recipe$_i$ was [t_i] sitting on the counter?
b. *What$_i$ was [the recipe for t_i] sitting on the counter?
c. Hvilken oppskrift$_i$ lå [t_i] på benken?
d. *Hva$_i$ lå [oppskriften for t_i] på benken?

Thus, extracting parts of an entity out of the subject position results in ungrammaticality. As suggested earlier, this is true for both English (e.g., Sprouse et al., 2016; Sprouse, Fukada, Ono, & Kluender, 2011) and Norwegian (e.g., Kush et al., 2018, 2019), in contrast to the cross-linguistic differences illustrated for the two other islands. It should be noted that extractions such as the one in (12b) and (12d) also violate the complex NP island constraint. The implications for this are discussed in section 3.2.2.

In his thesis, Ross (1967) formulated a constraint for the sentential subjects: "No element dominated by an S may be moved out of that S if that S is dominated by an NP which itself is immediately dominated by S" (p. 243). However, he did not develop a similar constraint for extraction out of non-sentential subjects. Furthermore, the ungrammaticality of extraction out of SpecTP cannot be analyzed following the Subjacency Condition. This was also noted by Huang (1982), who developed the Conditions on Extraction Domains (CED). Amongst other noteworthy discoveries, he claimed that non-complements do not allow extraction. Localized in the specifier position of TP, subjects are not complements, which explains the ungrammaticality of extracting elements out of the subject position. Thus, even though the subject islands cannot be analyzed under the Subjacency Condition, the CED accounts for the unacceptability of sentences where a part of the subject is moved. The subject island seems to be one of the more resilient islands, where there is little cross-linguistic variation, and mostly, research points in the direction of strong island effects (e.g., Kush et al., 2018).[7]

[7] As previously mentioned, islands vary in their opacity, and are typically classified as opaque/strong islands or transparent/weak islands. The subject islands have typically been referred to as strong islands. However, recent research has questioned this claim (Bianchi & Chesi, 2014; Lindahl, 2014; Polinsky et al., 2011). Not all extraction out of the subject position seems to generate strong island effects, and furthermore, people's judgments of the extractions vary greatly. It has been suggested that the differences in opacity is based in that "only a subject occupying a thematic position at the interface is transparent for extraction" (Bianchi & Chesi, 2014, p. 558). Another suggestion claimed that the opacity is established from the subject's base position, but this idea has been dismissed (Polinsky et al., 2011). Finally, Engdahl (1982) suggests that: "good examples of extractions out of subject NPs, whether these are complex or not, seem to require that the head noun can be interpreted as a function which varies with the value of the extracted constituent" (p. 167).

Thus, subjects are islands, following that it is not possible to move part of the subject out of its position without yielding ungrammaticality. The subject island seems to have little variation cross-linguistically and research suggests that extraction results in similar island effects in both English and Norwegian.

2.1.6 Explaining the cross-linguistic variation

The cross-linguistic differences with respect to the rejection and acceptance of embedded question and relative clause islands have some theoretical implications for the understanding of island constraints. Originally, the island constraints were proposed to be universal; they should hold across all languages. Furthermore, they were supposedly innate; a language learner would not have to learn or acquire them, as they were part of Chomsky's UG (Chomsky, 1973; White, 2003; White & Juffs, 1998). Thus, the suggested differences could potentially question the validity of the Subjacency Condition. For this reason, several theoretical claims have been put forth in order explain the apparent cross-linguistic differences and deviant structures, without challenging UG. This section highlights some of the more prevalent proposals.[8]

The first suggestion relates to movement out of embedded questions, which Norwegian speakers seem to accept despite violation of the Subjacency condition. This proposal, put forth by Åfarli and Eide (2003, pp. 264-267), suggests a reanalysis of the Norwegian island constraint violations. Essentially, the analysis entails that the embedded questions that do not block association between filler and gap have a different structure than the sentences that follow the cross-linguistic norm. They base this difference in the complexity of the wh-phrase in the embedded clause's SpecCP. Åfårli and Eide claim that the sentences which violate island constraints and are rejected by Norwegian speakers contain complex wh-phrases like *hva slags fisk* (‘*what kind of fish*’), in contrast to the sentences which violate island constraints but nevertheless are accepted, which contain simple wh-phrases e.g., *hva* (*what*). They take the sentence pairs in (13) (my translation) to indicate the acceptability of Subjacency violations with simple wh-phrases (13a) and (13c) and the unacceptability of Subjacency violations with complex wh-phrases (13b) and (13d).

(13) a. Han vil du vite hva fikk.
He wants you know what got
You want to know what he got.

b. *Han vil du vite hva slags fisk fikk.
He wants you know what kind-of fish got
You want to know what kind of fish he got.

c. Hvem vil du vite hva fikk?
Who wants you know what got
Who do you want to know what got?

d. *Hvem vil du vite hva slags fisk fikk?
Who wants you know what kind-of fish got
Who do you want to know what kind of fish got?

[8] While this thesis argues for island-insensitivity in Norwegian, it should be noted that e.g., Featherston (2005) has claimed that all languages display island effects, but that the size of this effect can vary cross-linguistically.

The examples themselves do not compose a very convincing argument. However, Åfarli and Eide (2003) provide an analysis that could explain the apparent violations in Norwegian. They suggest that a simple wh-phrase (e.g., *what, who*) can be analyzed as a subordinating conjunction. This would entail that the wh-phrase would be situated in the Cº-position, making the SpecCP available for movement of other constituents. Sentence (14a) presents the resulting reanalysis of sentence (13c):

(14) a. [$_{CP}$ [$_{C^o}$ [du vil vite [$_{CP}$ [$_{C^o}$ hva$_i$ [hvem fikk t$_i$]]]]]]

Thus, the analysis entails that in the clauses containing simple wh-phrases, like (13c), the SpecCP position is available, which in turn enables the successive cyclic movement needed for long-distance movement.

Åfarli and Eide (2003) make a similar claim for the relative clause island violations. However, due to the relative pronoun, the Cº-position is already occupied. This requires a double reanalysis. Firstly, they claim that in the relative clauses that allow extraction, the relative pronoun *som* is not situated in Cº at all. They take that the subject position is always placed after Cº to signify that *som* should not be analyzed as the head of the CP, but rather as a resumptive pronoun belonging to the subject position, TP (Åfarli & Eide, 2003, pp. 280-282). Now that the Cº-position is available, the analysis described for embedded question violations is executed.

An interesting proposal related to island constraints in Norwegian in general, is Nyvad et al.'s (2015) proposal of multiple CPs. They claim that the Mainland Scandinavian languages, including Norwegian, have the option to stack multiple CPs on top of each other as needed. Thus, for sentences such as the one in (15a), they suggest an analysis, in (15b), which includes several CPs, each with a SpecCP available for successive movement. Only the topmost CP is a proper CP (big C) and the embedded CPs, which are referred to as cPs (little c), are not:

(15) a. Peter påsto at det her kunne han gjøre mye bedre.
Peter claimed that this here could he do much better
Peter claimed that he could do this much better.

b. Peter påsto [$_{cP}$ [$_{c^o}$ at] [$_{CP}$ det her$_i$ [$_{C^o}$ kunne] han gjøre t$_i$ mye bedre]].
(Nyvad et al., 2015, p. 14: my translation)

Even though the example sentence they provide is not an island, they suggest that this complementizer stacking is available for all syntactic constructions. Thus, the same logic and analysis can be applied to island constructions, meaning that the multiple CPs would offer an 'escape hatch' for the entities extracted from islands in Norwegian.

This concludes the theoretical background of islands. Due to length and complexity, an intermediate summary is needed: Wh-movement is in theory unbounded. However, there are some syntactic constructions which do not display this unboundedness, and furthermore block association from antecedent to gap; the island constructions. The three islands discussed here are the embedded question, relative clause and subject islands. For English, extraction out of all three islands results in ungrammaticality. However, for Norwegian, only extraction out of the subject island results in unacceptable sentences (in some cases, extraction out of relative clauses result in unacceptability as

well). There have been several suggestions as to why Norwegian accept violations of what should be innate and universal constraints, where one of the more interesting is the suggestion of CP-stacking.

2.2 SECOND LANGUAGE ACQUISITION

Fundamentally, SLA investigates how, when, and to what extent L2s are acquired or learned. An L2 is commonly defined as any language learned/acquired after the L1/native language (NL). Thus, SLA research can include a range of perspectives and different languages. Most areas of the development of L2 grammars have been studied: how comprehensive language systems are created despite a limited amount of input; which aspects of an L2 are and are not acquired and why; which hypotheses L2 learners develop during acquisition etc. (Gass, 2013).

Throughout this thesis, I use two labels which correspond to similar, but not identical, processes in SLA: acquisition and learning. This distinction was established by Krashen (1982), as a part of his five hypotheses about second language acquisition, and it is, as he specified himself: "perhaps the most fundamental of all the hypotheses to be presented" (p. 10). Krashen suggested that the main difference between acquisition and learning lies in the consciousness of the learner; where acquisition is an unconscious and implicit process similar to first language acquisition, learning is the conscious and explicit memorization of rules (ibid.). Furthermore, acquisition and learning result in different language competence; where acquisition leads to intuitions and a general 'feel for' the grammaticality or ungrammaticality of a language, conscious learning leads to knowledge of the rules and the grammar. However, there is no consensus on, and no uniform acceptance of, Krashen's absolute separation of acquisition and learning. Because of this, and that the participants of the present study have probably developed their L2 through a combination of these processes, I use both terms interchangeably in order to reduce repetition and to avoid drawing conclusions upon their language without significant knowledge of their linguistic competence, history and development.

One of the earliest and more notable theories of human language was the behavioristic view of language learning. The behaviorists understood language learning as series of imitation, repetition, analogizing and habit formation through stimulus-response sets (Gass, 2013). For L2-learning, they hypothesized that the learners use their L1 as a starting point and that the features of the learners' L1 are transferred to their L2. Transfer of features that correspond in the L1 and L2 results in positive transfer or facilitation, i.e., correct language. Conversely, transfer of features that are different results in negative transfer or interference (ibid.), i.e., language which does not conform to the grammatical rules of the L2. In this view, it follows that L2 errors can be attributed to the L1, and that an L2 learner only has to learn the elements that differ from his or her L1.

Building upon these assumptions, Lado (1957) developed the Contrastive Analysis Hypothesis (CAH). This framework proposed that for learning an L2, one simply needed to identify and learn the elements which differed between the L1 and the TL. The framework was also used in order to explain why some languages were more difficult to learn than others, based on the number of differences between the NL and the TL (ibid.). Two positions developed from the CAH; the a priori view, which predicted difficulties based on differences between the two languages, and the a posteriori view, which analyzed L2 errors based on the L1 (Foley & Flynn, 2013; Gass, 2013). However, both

positions received criticism related to their specific predictions, and finally, the theoretical foundation of the behaviorist theories and views was questioned and mostly rejected when linguists proposed that language learning could not be based purely on imitation and repetition, and that it required the learner to actively engage in the learning in order to develop their grammar (Gass, 2013).

One of the language theories which criticized the behavioristic view was the nativist view on language learning. In contrast to the earlier claims on language learning, the nativists proposed that at least some parts of language learning involve innateness; i.e., that humans possess some abilities which enable language acquisition in a fast and successful manner. There are several sub-theories and approaches that fall within the nativist perspective, where one of the more well-known is Chomsky's UG (e.g., Chomsky, 1965, 1986). UG presupposes specific mechanisms used solely for language learning and involve an extensive set of universals, such as the aforementioned Subjacency condition (Chomsky, 1973; Gass, 2013; White, 2003).

UG is what Chomsky (1986) refers to as "a theory of the 'initial' state" (p. 3) and is suggested to constrain all of human language. His theory proposes that human beings are born with a language faculty which establishes both the possibilities and boundaries for any given language. Thus, languages can only vary according to these pre-set conditions, and these conditions make up the initial state of the grammar (e.g., Chomsky, 1986, 2000). This assumption is motivated by the learnability problem briefly presented in chapter 1: the input learners are exposed to is not equal to the extensive competence language learners achieve. This conundrum is also known as The Logical Problem of Language Acquisition (White, 2003), which is further discussed in section 2.2.1. In his early outlines of UG, Chomsky termed the innate possibilities and boundaries which constrain language development principles and parameters. The principles represent elements that are invariable and present in all languages, e.g., distinctions between overt and null pronouns. On the other hand, the parameters are elements of a language that can vary across languages, and thus, what makes languages different from one another, e.g., whether question formation trigger movement. The parameters were assumed to be binary (Chomsky, 2000; White, 2003). Prior to exposure to a language, the parameters, in contrast to the principles, are not set, and the language learner needs TL input in order to identify the settings of a specific language. As soon as the learner is presented with utterances that provide evidence for setting of a parameter, that specific parameter is set/acquired. This logic entails that language acquisition is fast and based on minimal input (White, 2003). Most linguists no longer assume the existence of such large, binary parameters. However, the cross-linguistic or parametric variation is still considered to be systematic (Slabakova, 2016).

The theory of UG was originally developed from the perspective of L1 acquisition. For L2 acquisition, on the other hand, there are several unanswered questions regarding the state of UG. Seeing as UG is, as Chomsky (1986) labels it, a theory of the initial state, one of the most important and prevalent questions becomes to what extent UG is accessible after the acquisition of the L1. In other words, researchers are interested in determining what the initial state of L2 grammar looks like. I return to this question in section 2.2.2.

2.2.1 The Logical Problem of Language Acquisition

During language acquisition, both for L1s and L2s, learners acquire a grammatical system used in both language comprehension and production. Much of language research tries to uncover just how language learners end up with such an extensive system despite the "mismatch between the kind of input available to L1 acquirers and their ultimate attainment" (White, 2003, p. 37). As described in the previous subchapter, the nativist view suggests that through exposure to the language, language learners create hypotheses about the TL, which in turn are either validated or rejected through further exposure to the language. These judgments can in theory be based on either positive or negative, direct or indirect evidence. Direct positive evidence is, in short, the language that language learners are exposed to, and consists of a limited set of accepted utterances and grammatical sentences (Pearl & Mis, 2016). The learner makes use of this finite set of utterances to form generalizations and create hypotheses about the general grammar of the TL. Seeing as language is a non-finite system, a learner can, in theory, create a sentence that has never been uttered before, based on grammatical rules represented through input. If a language learner is not exposed to a certain grammar element, the language learner is not able to determine whether this is due to coincidence or whether the form is ungrammatical. On the other hand, indirect positive evidence is instances of language which do not directly correspond to the target structure, but where the rules of that structure can be used to inform the language learner about the target structure (ibid.). Indirect evidence is given great significance in theories on parameter clustering, i.e., that some parameters are related, and that multiple parameters can be set following evidence on one of the them. Disregarding views on clustering entails a higher significance for direct positive evidence, considering that the input has to provide evidence for each individual parameter (Slabakova, 2016, p. 209). In contrast to language displayed through positive evidence, direct negative evidence are utterances from other language users that enable the learner to understand that his or her hypotheses about the TL are incorrect. The negative evidence can take several forms, such as questions for clarification, correction etc. Finally, indirect negative evidence is the consistent absence of certain structures. This absence can be interpreted by the language learner as a demonstration of ungrammaticality (Pearl & Mis, 2016).

However, L1-research has shown that negative evidence is not frequent, nor is it taken into account (Mazurkewich & White, 1984; Pinker, 1989). Children are very resistant to corrections, and even repeated feedback usually does not seem to have an impact on the developing grammar. Following this logic, children would not have the means to reject the inaccurate hypotheses derived from positive evidence and would end up with a grammar that supersedes the TL grammar. However, as Lightfoot (2005) specify: "Children do not test random hypotheses, gradually discarding those leading to "incorrect" results" (p. 50). Furthermore, as already discussed, positive evidence cannot display the full range of potential sentences. Seeing as language users can create unique sentences without difficulty, there must be some sort of mechanism which limits the grammar of any given language.

This learnability issue is not new and is not specific to either syntax or language learning. It was firstly proposed as Plato's problem, and questions how and why human beings are left with a vast amount of knowledge despite their limited contact and experience with the world (Lightfoot, 2005). For language learning, the significant gap between the input from the TL and the resulting knowledge the language learner is left with, is often referred to as The Logical Problem of Language Acquisition. Chomsky (1975, as cited in

Legate & Yang, 2002) developed the logical problem of language acquisition on basis of the poverty of the stimulus argument, which builds on the following logic:

(16) Given language data D, and a simple but incorrect hypothesis of D, H,
   a. the child behaves as though he/she does not entertain H
   b. the evidence necessary to rule out H is not available to the child
   c. the child possesses innate knowledge excluding H from the hypothesis space
   (Chomsky, 1975, as cited in Legate & Yang, 2002, p. 152).

Thus, if the information to reject non-target forms, i.e., hypothesis *H*, is not available through TL input, assuming hypothesis *D*, and not *H,* must be innate knowledge. For this, as briefly mentioned earlier, UG has been suggested as a possible solution. As Chomsky (1965) specifies: the limited extent of data compared to the quality and striking uniformity of language "leave little hope that much of the structure of language can be learned by an organism initially uninformed as to its general character" (p. 58). Thus, for L1 acquisition, positive evidence plays a major role in the acquisition of the language and it is hypothesized that UG is the mechanism that prevents learners from entertaining hypotheses that cannot be confirmed or rejected through input. This also relates to the previously mentioned difference between acquisition and learning; an L1 is acquired through positive evidence which results in implicit knowledge.

However, there is no consensus on what, if any, role UG plays in SLA. First of all, the linguistic competence acquired in an L2 differs from that of L1 acquisition; the learners often obtain explicit knowledge of the rules and grammar. In an article discussing the logical problem of foreign language learning, Bley-Vroman (1990) suggests that SLA is more similar to adult learning in general than L1 acquisition. Furthermore, negative evidence is arguably more present in L2 learning due to instruction, which could eliminate the need for UG. However, as White (2003, p. 41) argues, L2 learners tend not to make any errors that violate UG, which suggests that UG does play a role. In addition, White (1985) also states that "it would appear that he or she [note: the language learner] will also achieve complex knowledge of the L2 which goes well beyond the input" (p. 29).

Thus, one of the more curious features of human language acquisition is the mismatch between the available input and the system that is acquired. Chomsky's UG has been suggested as a solution to this. Assuming UG as the solution to The Logical Problem of Language Acquisition then questions the role UG plays in SLA, since L1 and L2 acquisition may be distinct both in terms of their initial state and their outcome.

2.2.2 L2 grammar and Transfer

During SLA, learners develop L2 grammars, which Selinker (1972) referred to as interlanguages (IL). The L2 grammar is not identical to neither the NL nor the TL, but "a separate linguistic system based on the observable output which results from a learner's attempted production of the target language norm" (Selinker, 1972, p. 214). L2 grammars represent a stage in L2 acquisition where the language learner is developing, testing and evaluating TL grammar hypotheses, and evolve as the learner is exposed to TL input. Thus, L2 systems are similar to L1 systems and gradually build based on input,

and have initial, intermediate and final states (Gass, 2013; Montrul, 2014). It should be stressed that L2 grammars are not faulty or ungrammatical versions of either languages, and Klein and Perdue (1993) describe them as "productive systems in their own right, characterized by a specific repertoire and by specific interplay of organizing principles" (p. 37). Based on the assumption that L2 grammars are productive systems restrained by the same principles as natural languages, some linguists have argued that L2 grammars are constrained by an innate faculty, entailing a major role for UG in L2 acquisition. Nevertheless, there seem to be some non-target features in the learners L2 grammar that reflects L1 features. This was also noted by Corder (1967), who studied the errors of language learners to gain insight into the developing L2 grammar, using the L1 as a basis.

As previously discussed, the concept of transfer was introduced by the behaviorists, who viewed L1 acquisition as habit formation. This habit formation was believed to be different for L2 acquisition, due to the already established L1 habits. Furthermore, it was assumed that the initial state of the L2 grammar was the end state of the L1. The early research on transfer differentiated between two forms of transfer; positive and negative transfer (Foley & Flynn, 2013). Currently, the term cross-linguistic influence is used to illustrate the fact that transfer is not one-sided (Gass, 2013; Lightbrown & Spada, 2013). This thesis uses the terms transfer, L1 influence and cross-linguistic influence for both types of transfer to avoid any negative connotations that may be attached to negative transfer/inference.

Since the behaviorist perspective on L2 acquisition and the idea that transfer was the only influence on the L2 grammar were the dominant views for an extended period of time, the role of transfer and L1 influence constituted much of the early research in SLA (Foley & Flynn, 2013). However, as more recent work and theories belonging to the generative perspective have gained in popularity, the view on transfer and the significance of the L1 in the L2 grammar has changed. The more recent theories do, as explained above, focus on an innate language faculty, which ultimately reduces the importance of cross-linguistic influence (ibid.). Thus, the discussion of the L1's versus UG's influence on L2 acquisition continues to play a major role in SLA research. Research indicates both that the L1 influences the acquisition process of an L2 (Westergaard, 2002, 2003; White, 2003) and that UG plays a major role in L2 acquisition (e.g., Dekydtspotter, Sprouse, & Anderson, 1998; Kanno, 1997; White & Schachter, 1989). Such research has resulted in the development of several models, each valuing the significance of transfer and UG differently. In the following sections, five of these models are presented: The Initial Hypothesis of the Syntax, the Full Access/No Transfer model, the Bley-Vroman-view, the Minimal Trees Hypothesis and the Full Transfer/Full Access model.

2.2.3 UG as the only influence

The Initial Hypothesis of Syntax (IHS) as presented by Platzack (1996) suggests that the initial state of the L2 grammar is not constituted by the L1 settings and that UG is the only influence on L2 acquisition. This further entails that the processes that apply to L1 acquisition also apply to L2 acquisition. Thus, the target settings for parametric variation are acquired through exposure to TL input. Naturally, this involves that L2 acquisition proceeds in the same manner as L1 acquisition.

Similar to the IHS, the Full Access/No Transfer model (FA/NT) (Flynn & Martohardjono (1994) as cited in White, 2003) assumes that the starting point for L2 acquisition is UG.

The development of the L1 and L2 are predicted to proceed similarly, and there should be no differences in the L2 acquisition process between people with different L1s (White, 2003, p. 90). Epstein, Flynn, and Martohardjono (1996) argue that during L2 acquisition, UG is available at all times, and that there is no transfer from the L1. Despite the L1 not constituting the initial state of the L2 grammar, they do not reject that the L1 influences the L2 grammar during the acquisition. However, as White (2003) points out, they struggle to specify in which ways and to what extent (p. 89).

Following the premises of the IHS and FA/NT, there are no unlearnable TL features. Thus, L2 learners should, in principle, be able to master the L2 grammar on a similar level to a native speaker, in the same way that L1 acquisition is (nearly) always successful. However, L2 learners are not expected to demonstrate native-like proficiency in all cases due to production errors, in e.g., stressful situations (Epstein et al., 1996; Platzack, 1996).

However, since children apparently do not make use of movement even when the L1 requires it, but very rarely move something that doesn't move in the TL grammar, it has been suggested that they start out with weak features, i.e., features that do not require movement (White, 2003, p. 88). This is further related to the Subset Principle and theories of conservative learning, which stipulate that learners develop a TL grammar which corresponds to the positive evidence a learner has been exposed to (White, 1989). Seeing that UG is the L2 grammar's initial state, the same should be expected from the L2 learners. Thus, even if the L1 has strong features, the initial state of the L2 grammar would include weak features, since the learners are assumed to be conservative in developing hypotheses. Furthermore, positive evidence can disprove a hypothesis of weak features, while it cannot disprove a hypothesis of strong features. However, as White (2003) points out, research has indicated that not all L2 learners assume weak features at the onset of L2 acquisition, which could indicate that some features are subject to transfer from the L1 .

2.2.4 SLA-models hypothesizing L1 influence

In contrast to the models which hypothesize full access to UG during L2 acquisition, Bley-Vroman (1990) hypothesizes that L2-learners have no access to this "domain-specific acquisition system" (p. 44). Compared to L1 acquisition, SLA differs in several respects. At the onset of the L2 acquisition, the learner already possesses competence in his or her L1 and "a powerful system of general abstract problem-solving skills" (ibid., p. 4). However, the increased competence, general knowledge of the world and the experience of acquiring a language, which could be assumed to be advantages not present in L1 acquisition, stands in great contrast to the resulting L2 grammar, which Bley-Vroman (1990) describes as a language with considerable variability in terms of the resulting linguistic competence for each language learner. Furthermore, in contrast to L1 acquisition, there seems to be no uniform endpoint of L2 acquisition. Considering the differences in outcome for L1 and L2 acquisition, Bley-Vroman (1990) argues that L2 acquisition is not influenced by the same processes as L1 acquisition, and that L2 acquisition is the result of adult problem-solving skills not specific to language development. Thus, the L1 constitutes the initial state of the L2 grammar, and the L2 grammar is developed through adult problem-solving skills, not UG.

In contrast to the views of Bley-Vroman (1990), the Minimal Trees Hypothesis (MTH) (Vainikka & Young-Scholten, 1994, 1996) suggests that both the L1 and UG are available to the learner during SLA. However, the hypothesis does not claim that the final state of

the L1 grammar is the initial state of the L2 grammar. Instead, this model suggests that only parts of the L1 are transferred. Based on their data of L2 users' gradual use of functional categories, Vainikka and Young-Scholten (1996) suggest that only the lexical categories are transferred, and that the functional categories are not. Thus, the learner will have to acquire these based on input from the L2, which is further constrained by UG. A logical consequence of the partial transfer of the L1 is that L2 learners who differ in linguistic background are able to acquire the functional categories of a TL in a similar manner, regardless of grammatical complexity and L1 background. Thus, even though the magnitude of the gap between the L1 and the L2 differs greatly from language to language, there should be no difference in either learning process or outcome in regard to functional categories (Vainikka & Young-Scholten, 1994). Since there may be non-target forms in the L2 grammar from non-functional differences between the L1 and the L2, the success of the TL grammar in all areas is not guaranteed, but all L2 learners should in principle be able to master the TL's functional categories like a native speaker. Even though Vainikka and Young-Scholten (1994) suggest that L1 and L2 acquisition are similar processes, they further propose that the triggers for the parameter settings are not the same in L2 acquisition as in L1 acquisition, which could further explain why not all learners reach native-like proficiency.

Thus, "only lexical projections constitute the L2 learner's initial state; the development of functional projections is driven solely by the interaction of X'-theory with the target-language input" (Vainikka & Young-Scholten, 1996, p. 7). However, amongst others (e.g., Grondin & White, 1996; Haznedar, 2003; Lakshmanan, 1993/1994; Lardiere, 1998), Dube (2000) argues that there is evidence of functional categories in the early stages of L2 grammars. Accordingly, he suggests that at least some parts of the L1's functional categories are transferred. This would be evidence against the MTH, as the hypothesis is that functional categories are not subject to transfer, at all. In addition, Schwartz and Sprouse (1994, 1996) provide evidence which suggests more substantial transfer, which developed into the Full Transfer/Full Access (FT/FA) model.

The FT/FA model suggests that the "initial state of L2 acquisition is the final state of L1 acquisition" (Schwartz & Sprouse, 1996, pp. 40-41). This entails that the values and settings of the L1 grammar are automatically transferred into the L2, forming the basis of the L2 grammar. When exposed to L2 input that does not coincide with the initial state of the L2 grammar, i.e., the L1 grammar, the learner has to alter the settings of the parameters. This process is restrained and facilitated by UG. Each such altering of the L2 grammar is an intermediate state of the L2 grammar (Schwartz & Sprouse, 1996). Thus, the L1 grammar is the foundation of the L2 grammar, but its development, especially in the cases where the L2 grammar differs from the L1 grammar, relies on UG.

Since the initial state of the L2 grammar does not consist of an open set of principles and parameters, and that the input, whether positive or negative evidence, necessary for a sufficient alteration of the grammar does not exist or is too rare in natural language, Schwartz and Sprouse (1996) do not hypothesize native-like competence in the (possible) end state of the L2 under the FT/FA, at least not for all learners. Once again, this relates to The Logical Problem of Language Acquisition. Due to the already determined parametric variation of the transferred L1 grammar, the simple process described for L1 acquisition, where only the smallest amount of positive evidence would compel the language learner to set a parameter, does not happen. This can further be related to the Subset Principle (Berwick, 1985), which, as described, posits that L1 learners presume a grammar sufficient to create utterances like the ones they are

exposed to. This means that the learners are conservative in developing their grammar, and that they only entertain hypotheses which can be confirmed or rejected purely through positive evidence. However, as research has suggested that L2 learners are not conservative in the same way as L1 learners are (White & Schachter, 1989), transfer from the L1 could entail that they do consider hypotheses which require negative evidence in order to reset the parameters. Since it is unclear whether such evidence can contribute to restructuring the grammar (see e.g., Schwartz & Gubala-Ryzak, 1992), this posits the question of how the superset grammar is unlearned.

Thus, the FT/FA model claims that learners have access both to the L1 and to UG during L2 acquisition. This is supported in other research as well: Slabakova (2000) presents data which imply that differences in two language groups can be connected to their respective L1s, while Haznedar (1997, as cited in White, 2003, pp. 61-62), found evidence which suggests that the L1 is the initial state of the L2 grammar, but that the L2 grammar is susceptible to change. Schwartz and Sprouse (1996) argue that "there is no attendant conclusion that the cognitive processes underlying L1 and L2 acquisition differ" (p. 42). Interestingly, however, the claims the model set forth entail that L2 acquisition is quite distinct from L1 acquisition, due to the difference of the initial state of the grammar.

As a final conclusion, many of the current views on language acquisition hypothesize that both the L1 and UG play a role in L2 acquisition. Thus, instead of focusing on whether L1 and UG have roles in SLA, much of present-day research investigates how and when both the L1 and UG are employed in L2 development.

2.3 PREVIOUS RESEARCH ON ISLAND CONSTRAINTS IN L2

The earlier studies on transfer of island constraints investigated island-sensitivity in L2 grammars where the L1 did not have wh-movement at all, whereas the L2 did. As there is no wh-movement, there is no island-violating movement either, meaning that the studies investigated whether UG was accessible in L2 acquisition. As islands were considered a part of UG, any island sensitivity in the participants' L2 would suggest access to UG beyond L1 acquisition. However, there seems to be no consensus: Johnson and Newport (1991) suggested that L1 Chinese L2 English speakers had no access to UG during SLA; Quintero (1992) found that L2 learners are conservative in terms of developing hypotheses, which was taken to signify that the L2 is not affected by the L1; Li (1998) proposed that L2 learners have access to UG when they reach a certain level of proficiency in the TL; and White and Juffs (1998) suggested that UG is accessible in L2 acquisition.

In a large-scale study comparing languages that either differed or aligned in terms of their treatment of filler-gap dependencies within islands, Martohardjono (1993) investigated the judgments of 19 L1 Chinese, 24 L1 Indonesian and 11 L1 Italian (all L2 English) speakers for five English islands: embedded questions, relative clauses, complex NPs, adjunct clauses and sentential subjects (in addition to that-trace clauses). All participants had lived in the US for approximately 2,5-3 years. The participants of the experimental groups rated the island violating items better than the control group. However, "none of the experimental groups treated ungrammatical wh-extractions as acceptable sentences in English" (ibid., p. 109). The Chinese and Indonesian speakers, whose L1s do not display wh-movement, rejected the English island constraint violations above chance. Martohardjono (1993) took this to signify that the participants must have

had access to UG during SLA. The Italian participants, whose L1 follows the cross-linguistic norm, rejected all five islands. Furthermore, their ratings displayed bigger island effects than the Chinese and Indonesian speakers' ratings did. Martohardjono (1993) interpreted the similarities in ratings between the groups to suggest that the different L2 groups do not test out multiple hypotheses during SLA and that the acquisition process is influenced by UG. Even though the Chinese and Indonesian speakers' relative rejection indicate that UG is present in SLA, Kush and Dahl (2020) make an interesting point: "the fact that Italians more consistently rejected English island violations than the Chinese and Indonesian participants suggests indirect evidence of L1-L2 transfer of L1 intuitions" (p. 5). Thus, the research of Martohardjono (1993) suggests that both the L1 and UG influence the acquisition of an L2.

In a study focusing on relative clause islands, Kim, Baek, and Tremblay (2015) examined the role of the native language in island processing. The participants consisted of 24 L1 English speakers, 21 L1 Spanish L2 English speakers, and 31 L1 Korean L2 English speakers. The results showed that the L1 Spanish speakers, whose L1 has wh-movement and follows the cross-linguistic norm related to island constraints, instantly applied the island constraints in order to ensure grammatical wh-dependencies. The L1 Korean speakers, whose L1 grammar does not make use of wh-movement, diverged from this pattern, and "posited gaps in both non-island and island context" (ibid., p. 409). These findings were taken to suggest that the L1 plays a role in the processing of island constraints. Kim et al. (2015) do, however, emphasize that this needs further support, as they are the first to come to this conclusion.

In a study yet to be published, Kush and Dahl (2020) investigated transfer of embedded questions and subject phrases from Norwegian to English. Two different acceptability judgment tests were developed, each containing both English and Norwegian items. The items consisted of relativized filler-gap dependencies inside embedded questions and subject phrases, and their non-island counterparts. In the first experiment, 27 L1 Norwegian L2 English speakers rated 2 tokens pr. condition pr. language, a total of 32 target items. 49 L1 Norwegian L2 English speakers participated in the second experiment, rating 4 tokens pr. condition pr. language, a total of 64 target items. The control group, consisting of 31 native English speakers, only rated the English items. The control group rated both islands considerably lower than their non-island counterparts, displaying island effects, i.e., rejection of island constraint violations. The Norwegian participants rejected both the Norwegian and English subject island violations. However, the Norwegian participants' island effect for embedded questions was bigger for English than Norwegian, even though the participants did not rate the English filler-gap dependencies inside the embedded questions as badly as the control group. Thus, the results show that Norwegian speakers are more likely to accept the English constructions that are acceptable in Norwegian, suggesting some form of transfer, and indicating that they were not conservative the way children are in L1 acquisition. However, they are less likely to accept filler-gap dependencies into embedded questions in English than Norwegian, which could indicate that learners of are able to restructure their superset grammar in favor of the target grammar over time.

Thus, evidence suggests that both the L1 and UG play a role in SLA in the case of island constraints. However, apart from the forthcoming study of Kush and Dahl (2020), the previous research does not give any further understanding of the currently most pressing issue; how and when the L1 and UG are employed in the acquisition of filler-gap

dependencies inside island constructions, when the L1 has wh-movement and island constraints, but not the same constraints as the L2.

3 METHODS

3.1 HYPOTHESIS

The current study targets the structures discussed in the previous section in a group of young L1 Norwegian L2 English speakers and a control group of adult L1 English speakers. Following the theoretical background and research presented in chapter 2, several outcomes are possible for the thesis experiment. Firstly, for the experimental group's judgments of the Norwegian items, the previous chapter implies that extraction from the individual islands may be treated differently. Previous research on embedded question islands, including suggestions of classifying them as weak islands, suggests that the ratings will demonstrate acceptance of the island-violating sentences. For the relative clause islands, the research presented in chapter 2.1.4 entails that acceptance and rejection is equally probable. However, since the items in the current experiment consist of a relative clause type which should be acceptable (see section 3.3.2.2), acceptance is more likely. Finally, it is expected that violations of the subject island constraints are rejected.

There are three potential outcomes of the experimental group's treatment of the English items:

A. Transfer of a superset grammar, leading to acceptance of the embedded question and the relative clause island violations, and rejection of violations of the subject island constraints.
B. Transfer of a partial superset, leading to a lower acceptance, but not rejection, of the embedded question and the relative clause island violations in English than in Norwegian. As with outcome A, violation of the subject island should be rejected.
C. No transfer at all, leading to rejection of extraction out of all three islands.

Since transfer as an L2 phenomenon has been confirmed both for island constraint violations and language in general, outcome C is not plausible. Kush and Dahl (2020) suggest that language users are able to unlearn and retract from the superset grammar, moving toward the TL, which suggests outcome B. However, since the participants of this study are expected to be at an earlier stage of language acquisition than those in Kush and Dahl (2020), it is less likely that there will be evidence of an unlearned superset grammar. This leaves outcome A; that there will be evidence of a superset grammar in the participants' L2 English. Thus, the working hypothesis of this thesis is:

(17) Hypothesis: There will be evidence of transfer of a superset grammar in the experimental group participants' L2 English.

3.2 PARTICIPANTS

74 L1 speakers of Norwegian (41 female, 32 male, 1 unclassified), mean age 15.1, participated in the study. They all attended year 10 of the same school through which they were recruited. Additionally, a control group of 31 native English speakers (20 female, 11 male), mean age 44, completed the English version of the survey. They were recruited through personal networks.

Experimental group participants reporting a different/additional native language than Norwegian, a diagnosis that could influence normal language development/comprehension and/or having lived in a foreign country for an extended period of time were excluded from further analysis. In addition, one participant was excluded due to not reporting any background data at all. In total, 12 of the 74 experimental group participants were excluded following these criteria, leaving 62 participants (37 female, 25 male)[9]. The same criteria were applied to the control group, only differing in the required native language, English. Additionally, any participants stating knowledge and/or use of Norwegian at any level or frequency were excluded. Two of the 31 participants were excluded from further analysis following this process, leaving 29 (19 female, 10 male), mean age 44.

For the experimental group, recruiting an entire grade at one school was beneficial mainly for two reasons. Firstly, it was practical in terms of access to possible participants. Secondly, it ensured that all participants were at least 15 years old; 15-year-olds are, by Norwegian law, allowed to consent for themselves, making parental consent unnecessary. However, recruiting an entire grade is a selective process; only the students in the exact grade at the exact school were asked to participate. On its own, this should not create much trouble, but due to dialect differences in Norway, the presence/absence of island effects in the data applies to one specific area of the country, namely Central Norway. Nevertheless, as the focus of the thesis is on transfer, not on the Norwegian language itself, this is not a crucial factor.

3.3 MATERIAL

The data collection, an electronic survey, consisted of three parts; a consent form containing the important information about the study (appendix A), a background questionnaire (appendix B), and an acceptability judgement test with the necessary instructions (appendix C, E-G).

3.3.1 Factorial design

As many recent studies investigating island effects (e.g., Kush & Dahl, 2020; Kush et al., 2018, 2019; Sprouse et al., 2016; Sprouse et al., 2011), the current experiment made use of the factorial design, as established by Sprouse (2007). The design was originally developed to help quantify different sources of unacceptability. For research on island constraints, the design usually manipulates two factors: STRUCTURE and DISTANCE. In the current experiment, each item was composed of a matrix and an embedded complement clause (except for the subject island, see section 3.3.2 for a review of each island type).

[9] Some experimental group participants took part in only one of the acceptability judgment tests, which means that the number of participants differ in the English and Norwegian version of the survey. See section 4.1 for the exact number.

STRUCTURE determined whether the embedded clause was an island or not (ISLAND vs. NO-ISLAND), and DISTANCE determined whether the movement originated within the matrix (SHORT) or the embedded clause (LONG). Thus, the design of the items in the acceptability judgment test is a 2x2 factorial design, illustrated with an embedded question in (18):

(18)	a.	Which girl forgot that Lily borrowed her pen?	NO-ISLAND	SHORT
	b.	Which pen did Anne forget that Lily borrowed?	NO-ISLAND	LONG
	c.	Which girl forgot who borrowed her pen?	ISLAND	SHORT
	d.	Which pen did Anne forget who borrowed?	ISLAND	LONG

Based on this set of sentences, it is possible to account for three sources of unacceptability on filler-gap dependencies. Firstly, the non-island items in (18a-b) make it possible to account for the difference in acceptability of short (the immediate clause) and long (the embedded clause) extraction. Secondly, the non-island and island items in (18a-b) and (18c-d) enable accounting for whether having an island construction in the sentence has an effect on overall acceptability. Finally, after accounting for both of these, it is possible to account for the island effect itself. There are two approaches to this, both executed through simple subtraction:

island effect = (18a – 18d) − (18a – 18b) − (18a – 18c) -or-

island effect = (18b – 18d) − (18a – 18c)

(Kush et al., 2018, p. 748)

The results of these calculations can be represented both statistically and visually. Visually, if the lines representing the two levels of STRUCTURE, i.e., NO-ISLAND and ISLAND, form two parallel lines when arranged according to DISTANCE, there is no island effect. However, if they do not form parallel lines, there is an island effect over and above the acceptability costs associated with DISTANCE and STRUCTURE alone. See Figure 4, where item 9 displays a small to no island effect and item 4 displays a large island effect. Statistically, there is no island effect present if the reduction from NO-ISLAND to ISLAND and the reduction from SHORT to LONG can predict the rating of the condition ISLAND | LONG. However, if the rating of the ISLAND | LONG condition is lower than expected, i.e., that there is a statistically significant interaction between STRUCTURE and DISTANCE, there is an super-additive island effect present (Sprouse et al., 2016). [10]

[10] As Kush et al. (2018) specify, one of the advantages of the design is that it allows for controlling "for an unlimited number of confounds, as long as the confounds are distributed across the subtractions such that they subtract to zero in the equations above" (p. 748). This means that the differences of length and complexity, verbs such as *forget*, *tell*, *know,* etc., should not influence the results too much, since they are distributed evenly across the different items.

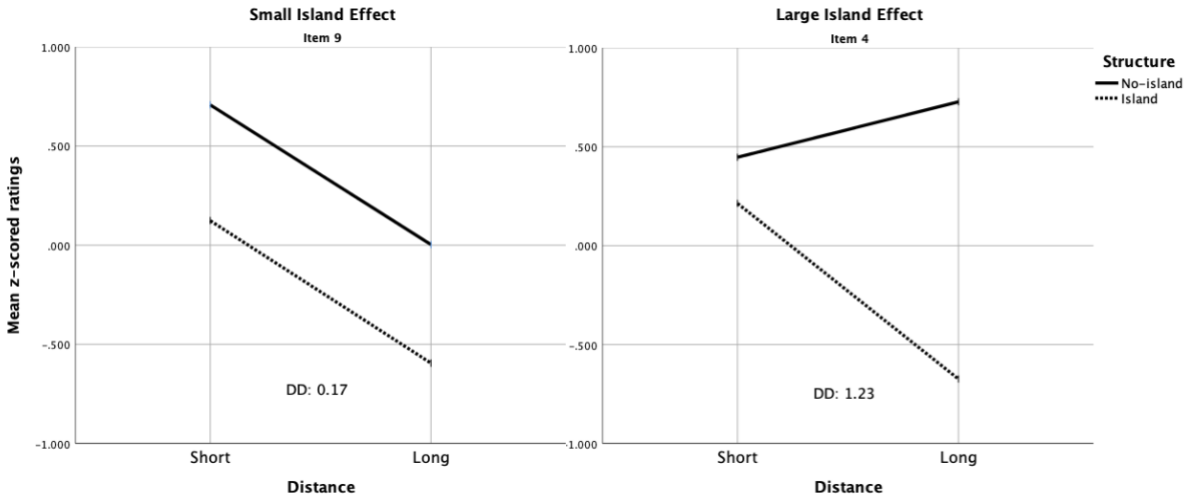

Figure 4: Visual illustration of a small/no island effect and a large island effect.
Note: these reflect the real z-scored ratings of item 9 and item 4 (experimental group/English).

The interaction plot of item 9 illustrates that the rating of the ISLAND | LONG condition follows the expected pattern and that there is no interaction effect. In contrast, the ISLAND | LONG condition is rated lower than expected in item 4; there is an island effect.

Finally, the calculations in (18) result in the DD-score, which represents the size of the island effect. Conforming to the parallel lines in the interaction plot in Figure 4, item 9 displays a relatively small DD-score of 0.17, whereas item 4 displays a relatively large DD-score of 1.23, apparent from the diverging lines in the interaction plot in Figure 4.

3.3.2 Items for acceptability judgment tests

The items for the acceptability judgment tests were carefully constructed in order to ensure reliable data. Some of the sentences were adapted versions of items used in previous research, although most of them were constructed for this test (see appendix E). There were 36 items in total; 12 embedded question islands, 12 relative clause islands and 12 subject islands. In accordance with the factorial design, the sentences were distributed across four lists (see appendix F), entailing that each participant assessed three items of each condition, but never two sentences from the same item set. In addition, 36 fillers (appendix G) were included. The 72 sentences were pseudo-randomized, ensuring that the two first items were fillers, which gave the participants a chance to familiarize themselves with the test situation, the procedure and the rating scale.

3.3.2.1 Embedded Question Islands

The embedded questions were included since previous research has found that they are accepted in Norwegian and rejected in English, cf. chapter 2.1.3. An example of the embedded question island items is presented below, for English (19) and Norwegian (20):

(19) a. Which friend remembers that John bought the movie-tickets?
b. Which tickets do you remember that John bought?
c. Which friend remembers who bought the movie-tickets?
d. Which tickets do you remember who bought?

(20) a. Hvilken venninne fortalte meg at Knut hadde solgt bøkene?
Which friend told me that Knut had sold books.DEF?
'Which friend told me that Knut had sold the books?'

b. Hvilke bøker fortalte Sara meg at Knut hadde solgt?
Which books told Sara me that Knut had sold?
'Which books did Sara tell me that Knut had sold?'

c. Hvilken venninne fortalte meg hvem som hadde solgt bøkene?
Which friend told me who that had sold books.DEF?
'Which friend told me who had sold the books?'

d. Hvilke bøker fortalte Sara meg hvem som hadde solgt?
Which books told Sara me who that had sold?
'Which books did Sara tell me who had sold?'

As can be seen in the above sentences, the items make use of wh-movement, as is traditional in research on islands. In order to improve the acceptability of the items and maximize the chances of acceptance, complex wh-phrases, such as *Which friend/Hvilken venninne* in (19a) and (20a), were used (Goodall, 2015).

3.3.2.2 Relative Clause Islands

As outlined in chapter 2.1.4, previous research has found that L1 Norwegian speakers both accept and reject island constraint violations inside relative clauses, whereas English speakers reject the island-violations consistently. Since violating the island constraint by using cleft-sentences have resulted in variable judgments in previous research (Kush et al., 2019), the current experiment uses existential sentences. Examples of the relative clause island items for English (21) and Norwegian (22) follow below:

(21) a. I remember that several men sold that kind of balloon on constitution day.
b. That's the kind of balloon that I remember that several men sold on constitution day.
c. There were several men who sold that kind of balloon on constitution day.
d. That's the kind of balloon that there were several men who sold on constitution day.

(22) a. Hun mener at få lærere snakker tegnspråk.
She thinks that few teachers speak sign.language.
'She thinks that few teachers speak sign language.'

b. Det er språket som hun mener at få lærere snakker.
That is language.DEF that she thinks that few teachers speak.
'That is the language she thinks that few teachers speak.'

c. Det er få lærere som snakker tegnspråk.
There are few teachers that speak sign.language.
'There are few teachers who speak sign language.'

d. Det er språket som det er få lærere som snakker.
That is language.DEF that there are few teachers that speak.
'That is the language that there are few teachers who speak.'

There are two noteworthy differences in the relative clause items compared to the embedded question items. Firstly, the SHORT condition is not made up by movement from

the immediate clause. In fact, there is no movement at all. This should not influence the results, given that in the factorial design a SHORT or NO-MOVEMENT condition (for consistency, I refer to both as SHORT) works as a baseline regardless of movement. There may be a small cost of movement which these items do not capture, but the calculations of DD-scores and other analyses should proceed similarly for these items as for the other islands. Secondly, the movement operation for the relative clauses is relative clause formation, i.e., making the moved element the relativized nominal, which further entails turning the full original clause into a dependent and modifying clause. Wh-movement was not used considering that it would result in awkward constructions when combined with the existential construction. Another option was topicalization, which is the most widely used movement operation in Norwegian relative constructions. However, English may be more restrictive with regard to topicalizations (cf. Speyer, 2005), which means that using topicalization as the test dependency could have resulted in differences in the ratings of the experimental and control group related to the movement operation, not the island construction.

3.3.2.3 Subject Island

The final island, the subject island, was included due to claims of equal cross-linguistic treatment: both English and Norwegian speakers reject A'-movement out of subject phrases. Accordingly, this island works as a point of reference for both languages. This entails that in the examples of subject island items for both English (23) and Norwegian (24), the final sentence in (d) should sound odd:

(23) a. Which judge heard that the suspect bribed the jury?
b. Which suspect did the judge hear bribed the jury?
c. Which judge heard that the suspect of the robbery bribed the jury?
d. Which robbery did the judge hear that the suspect of bribed the jury?

(24) a. Hvilken servitør hørte at kaken smakte godt?
Which waiter heard that cake.DEF tasted nice?
'Which waiter heard that the cake tasted nice?'
b. Hvilken kake hørte servitøren at smakte godt?
Which cake heard waitor.DEF that tasted nice?
'Which cake did the waitor hear that tasted nice?'
c. Hvilken servitør hørte at kaken med valnøtter smakte godt?
Which waiter heard that cake.DEF with walnuts tasted nice?
'Which waiter heard that the cake with walnuts tasted nice?'
d. Hvilke nøtter hørte servitøren at kaken med smakte godt?
Which nuts heard waiter.DEF that cake.DEF with tasted nice?
'Which nuts did the waiter hear that the cake with tasted nice?'

The items follow the same principles as the embedded questions; the SHORT condition displays movement from the matrix clause and extraction is executed through wh-movement.

As discussed in chapter 2.1.5, I chose to include complex NP subjects in order to avoid the more intricate sentential subjects, which could be too complex for the L2 learners. Yet, by using complex NPs there are actually two constraints at work. First, as discussed previously, extraction from SpecTP leads to reduced acceptability. Secondly, the items

are subject to the Complex NP Constraint. This could potentially lead to exaggerated island effects for this island type.

3.3.2.4 Fillers

Finally, 36 fillers were included in the test (see appendix G). The fillers, which varied both in length, complexity and vocabulary, were designed to balance the interrogative vs. the declarative and the relatively good vs. the relatively bad. Furthermore, the fillers included some relativized sentences, since the relative clause islands were the only items which made use of relativization. In addition, eight fillers were designed to be rated using the endpoints of the scale, four of them in the bottom-most range (FILLBAD-CATCH) and four of them in the top-most range (FILLGOOD-CATCH). These were included as control items, to ensure that the participants were paying attention and that their language comprehension was good enough to be able to evaluate the rest of the items.

One set of fillers is worth highlighting; the items containing stacked CPs. As discussed in section 2.1.6, research has suggested that the apparent acceptance of island violations in Norwegian and other Mainland Scandinavian languages is due to the possibility to stack multiple CPs in one clause. Accordingly, six item sets consisting of one sentence with stacked CPs (a) and one without stacked CPs (b) were created, in English (25) and Norwegian (26):

(25) a. Claire knows that Andrea eats never cheese.
b. Claire knows that Andrea never eats cheese.

(26) a. Vi vet at Peter ofte drikker kaffe om morgenen.
We know that Peter often drinks coffee in morning.DEF.
'We know that Peter often drinks coffee in the morning.'
b. Vi vet at om morgenen drikker Peter ofte kaffe.
We know that in morning.DEF drinks Peter often coffee.
'We know that in the mornings Peter often drinks coffee.'
(Adapted version, Nyvad et al., 2015, p. 14: my translation)

The sentence pairs were distributed across the surveys. Thus, two of the acceptability judgment test sets included sentence (a) and two of them included sentence (b), meaning that no participant rated both versions of a sentence pair. In total, six sentence pairs were created for both English and Norwegian. Hence, each participant rated three items with CP-stacking and three items without CP-stacking.

Finally, it is important to note two major concerns with the items in this experiment. Firstly, the items are rather complex, and even for one's L1 they could cause confusion. Secondly, the items were presented without context (see chapter 3.4), which could lead to low ratings, even though the sentences could be accepted in a relevant context in real life.

3.3.3 Background information

The background questionnaire (appendix B) consisted of 10 questions. The questions were mostly related to language background and language development, and their main purpose was to establish the participants' native language(s), possible diagnoses influencing language development/comprehension, proficiency level and experience with English. For the control group, the background information questionnaire was adapted

into four questions on basic information such as gender, native language(s), possible diagnoses and knowledge/use of other languages than English.

3.4 PROCEDURE

The data was collected through SelectSurvey, a digital platform for creating online surveys. The survey was executed on personal or school distributed computers; the experimental group took part in the experiment at school during school hours, while the control group had no set time or place. The survey did not allow forward or backwards navigation, meaning that the different elements of the survey had to be carried out in a preset order; consent form (paper format for the experimental group), background questionnaire, instructions for the acceptability judgment test and the acceptability judgment test itself. Furthermore, the survey could not be resumed if closed and had to be finished in one sitting. Prior to the accessing the survey, the experimental group participants received spoken information about the project and the survey; essentially, a summary of the information provided in the consent form, which they read on hardcopies before accessing the experiment. The control group received the same information and their consent form in written format on the very first page of the survey. Thus, prior to taking part in the survey, all participants had to consent to participate; the Norwegian participants did so through a written consent form which they signed, whereas the control group had to tick a box on the very first page of the survey (see appendix A). It was stressed that participation was voluntary. The next part of the survey, i.e., the background questionnaire had no obligatory questions, meaning that the participants decided for themselves what information to provide. Finally, the acceptability judgment test displayed one sentence at a time. The items were rated on a 6-point scale. The scale was labelled at the endpoints; 1 was labelled *Bad/Dårlig* and 6 was labelled *Good/Bra*. This technical information and three examples were presented in a set of instructions which the participants read prior to accessing the items (see appendix C). All the ratings in the acceptability judgment test were obligatory, meaning that participants could not access the next item without rating the current item.

For the experimental group, the data collection transpired over two rounds; one for English and one for Norwegian. The first and second round of testing were separated by one week. This time interval minimized the chances of participants recognizing certain structures, without the possibility of a significant increase in language skills between the first and second acceptability judgment test. The English items were rated first, in order to prevent priming from the Norwegian structures. The background data were collected in the same survey as the English items, but the participants who took part in the Norwegian survey only could provide their background information at that time. Due to the number of participants the testing proceeded in three groups, each sub-group having a timeslot of approximately 40 minutes. Even though this entails a theoretical time-limit, all participants finished well within the allotted time (mean time ≈ 18 minutes) and there is no reason to think that they had too little time. All three groups participated on the same day. I was present during the experiments. In addition to the survey materials described, the Norwegian participants had to enter a personal code to enable comparison of their judgments in English and Norwegian. To guarantee their anonymity, they created the code themselves, following a pre-set format. I used the same coding-schema as Dahl, Busterud, and Listhaug (2019) (see appendix D for the full version the participants received).

The control group accessed the survey remotely and through a link. This entailed some noteworthy differences in terms of execution; the control group did not receive spoken instructions prior to accessing the survey and did not have the ability to ask questions or ask for clarification on any technical issues during the testing. However, the experimental group had few questions, which ultimately minimizes this difference in execution. Finally, and perhaps most importantly, the procedures differed in regard to time limits. The control group did not have any time limit, meaning that they could use as much time on each item and the full survey as needed. However, the control group participants did not use more time on the survey than the experimental group participants (mean time ≈ 16,5 minutes), suggesting that this difference did not have an effect on the data.

3.5 ANALYSIS

In order to test the working hypothesis of this thesis, two sub-hypotheses were developed. Since the main hypothesis, that there will be transfer of a superset grammar, entails that there is an interaction effect of STRUCTURE and DISTANCE in the experimental group's ratings and, crucially, not in the control group's ratings, a null and an alternative hypothesis were developed:

H0: There is no interaction effect between STRUCTURE and DISTANCE.
H1: There is an interaction effect between STRUCTURE and DISTANCE.

The data were analyzed using SPSS 26.0 (Statistical Package for the Social Sciences). Prior to any analysis, the raw ratings for each participant were z-scored, which removes any effect of scale-biases between the participants and the different tests. A separate analysis was executed for each group, language and island. The mean z-scored rating of each condition was analyzed in a two-way repeated-measures ANOVA analysis. This analysis answers which of the two hypotheses is true; a p-value below 0.05 gives reason to reject the null hypothesis, signifying an island effect.

3.6 ETHICAL CONCERNS

The project was registered with and approved by the NSD, *the Norwegian Centre for Research Data AS*. To recieve this approval, several considerations had to be taken, amongst others an appropriate and safe software for collecting data, anonymity, safe storage etc.

All participants had to consent to participate, mainly since the data they provided was stored for a period of time and used in research. Moreover, there was a need to collect information such as native language(s) and possible diagnose(s), which is classified as personal data and could in theory be used to identify the participants. In addition, IP-addresses are automatically collected through online surveys, which could further identify the participants. SelectSurvey was chosen as the software for the survey, as it is approved for research in Norway and has a data processing agreement with NTNU. All the data were stored on my personal account at NTNU's OneDrive Server, which is considered a safe place for storage. All analysis was executed via software distributed by NTNU.

4 RESULTS

This chapter presents the results of the three experiments; the control group's ratings of the English items, the experimental group's ratings of the English items and the experimental group's rating of the Norwegian items. Section 4.1 reviews the ratings of the filler items and explains why some participants were excluded from further analysis. In addition, the ratings of the fillers testing acceptance of CP-stacking in both Norwegian and English are presented. The two following subchapters, 4.2 and 4.3, present the specifics of the ratings of the three experiments both statistically and visually. Following the analyses at group level, the subsequent subchapters investigate individual variation and correlation, where possible, between participant DD-scores and proficiency. The final subsection summarizes the main findings.

4.1 FILLERS

Prior to analysis, the participants' mean ratings of the four categories of fillers were calculated. Large anomalies in their ratings compared to the expected ratings led to exclusion from further analysis. This step was based on two considerations. Firstly, the items contain relatively complicated syntactic structures, which questions whether all participants are able to understand, and therefore, rate them in a meaningful way. Secondly, unexpected ratings could signify that the participants did not pay attention or that they selected a random number on the rating scale. Participant ratings which did not align with expected ratings but instead showed identical or higher mean raw score in FILL-BAD or FILL-BADCATCH than in FILL-GOOD and/or FILL-GOODCATCH led to exclusion from further analysis (see Appendix H for the excluded participants' mean ratings of each filler condition). In the experimental group, 16 participants rating the English items and 18 participants rating the Norwegian items were excluded. Additionally, two participants from the control group were excluded.

After exclusion, the experimental group data set consisted of ratings by 39 participants for the English items and 44 for the Norwegian items, and the control group data set consisted of 27 participants. Table 1 summarizes the mean z-scored ratings of the filler conditions after exclusion. These ratings provide operational baselines for acceptability and unacceptability to which I can compare the ratings of the target items.

Table 1: Mean z-scored ratings of filler items.

Group and language	FILL-BAD	FILL-BAD CATCH	FILL-GOOD	FILL-GOOD CATCH
Control: English	-0.654	-0.907	0.882	1.173
Experimental: English	-0.528	-1.009	0.720	0.779
Experimental: Norwegian	-0.520	-0.762	0.393	1.172

4.1.1 CP-stack

The mean z-scored ratings and standard deviation (sd.) between participants of the CP-STACK and NO CP-STACK fillers are summarized in Table 2, sorted by group and language.

Table 2: Mean and standard deviation of CP-stack fillers.

Group	Language	Condition	Mean	sd.
Control	English	CP-STACK	-0.239	1.012
		NO CP-STACK	1.036	0.410
Experimental	English	CP-STACK	-0.419	0.994
		NO CP-STACK	1.015	0.732
	Norwegian	CP-STACK	0.299	0.921
		NO CP-STACK	0.798	0.852

The data in the above table illustrate that the CP-STACK condition has a degraded rating compared to NO CP-STACK across all groups and languages. The experimental group has a higher acceptance of the items with CP-STACK in Norwegian than of the corresponding English items. Finally, it interesting to note that the experimental group rates the English CP-STACK items lower than the control group does. The standard deviation is higher for the CP-STACK than the NO CP-STACK across all groups and languages, which signifies that the participants rated the CP-STACK less consistent than the NO CP-STACK.

Investigating each participant's relative acceptance or rejection of CP-stacking provides similar results. In the experimental group, 14 participants either rated the Norwegian CP-STACK items higher than, identical or close to the NO CP-STACK items. Contrastively, only one experimental group participant's ratings displayed acceptance of CP-stacking in English, which aligns with the control groups' ratings.

4.2 ENGLISH ITEMS

4.2.1 Control group: Native English speakers

An overview of the control group's mean z-scored rating of each target sentence is included in Appendix J1. Table 3 summarizes the control group's mean z-scored rating and standard deviation for each condition by island type.

Table 3: Control group's mean z-scored rating and standard deviation between participants pr. condition of English items.

Island	Condition	Mean	sd.
SUB	NO-ISLAND | SHORT	0.58	0.70
	NO-ISLAND | LONG	-0.06	0.90
	ISLAND | SHORT	0.37	0.77
	ISLAND | LONG	-1.10	0.60
WH	NO-ISLAND | SHORT	0.56	0.70
	NO-ISLAND | LONG	-0.01	0.72
	ISLAND | SHORT	0.40	0.82
	ISLAND | LONG	-0.94	0.58
RC	NO-ISLAND | SHORT	1.03	0.40
	NO-ISLAND | LONG	0.27	0.60
	ISLAND | SHORT	0.84	0.58
	ISLAND | LONG	-0.82	0.56

Even though the mean scores provide an initial overview of the results, they only contribute a limited understanding of the participants' relative acceptance or rejection of the islands. In order to determine (i) whether the difference between two variables are systematically bigger than the differences within in the variable and (ii) whether the null-hypothesis that there is no interaction effect between the variable STRUCTURE and DISTANCE should be rejected, a two-way repeated-measures ANOVA analysis was executed. The results of the analysis, isolating the variables STRUCTURE, DISTANCE and the interaction of STRUCTURE and DISTANCE are summarized in Table 4.

Table 4: ANOVA-analysis of the control group's ratings of the English items.

Island	Variable	MS	F	*p*	Effect size
SUB	STRUCTURE	4.446	35.572	0.000	0.764
	DISTANCE	12.846	111.367	0.000	0.910
	INTERACTION	2.049	16.189	0.002	0.595
WH	STRUCTURE	3.3096	30.162	0.000	0.733
	DISTANCE	10.766	55.832	0.000	0.835
	INTERACTION	1.628	9.948	0.009	0.475
RC	STRUCTURE	5.006	76.007	0.000	0.874
	DISTANCE	18.798	447.705	0.000	0.976
	INTERACTION	2.699	28.678	0.000	0.723

All the comparisons of the ANOVA-analyses, both the isolated variables and their interaction effect, come out statistically significant. [11] Most importantly, the interaction effect, i.e., the island effect, comes out statistically significant for all three islands. This super-additive interaction effect which signifies a lower rating for the ISLAND | LONG condition than calculated by the reduction from SHORT to LONG and from NO-ISLAND to ISLAND, is apparent from the interaction plots in Figure 5. As described in chapter 3, more or less parallel lines indicate no island effect, while diverging lines indicate a large island effect.

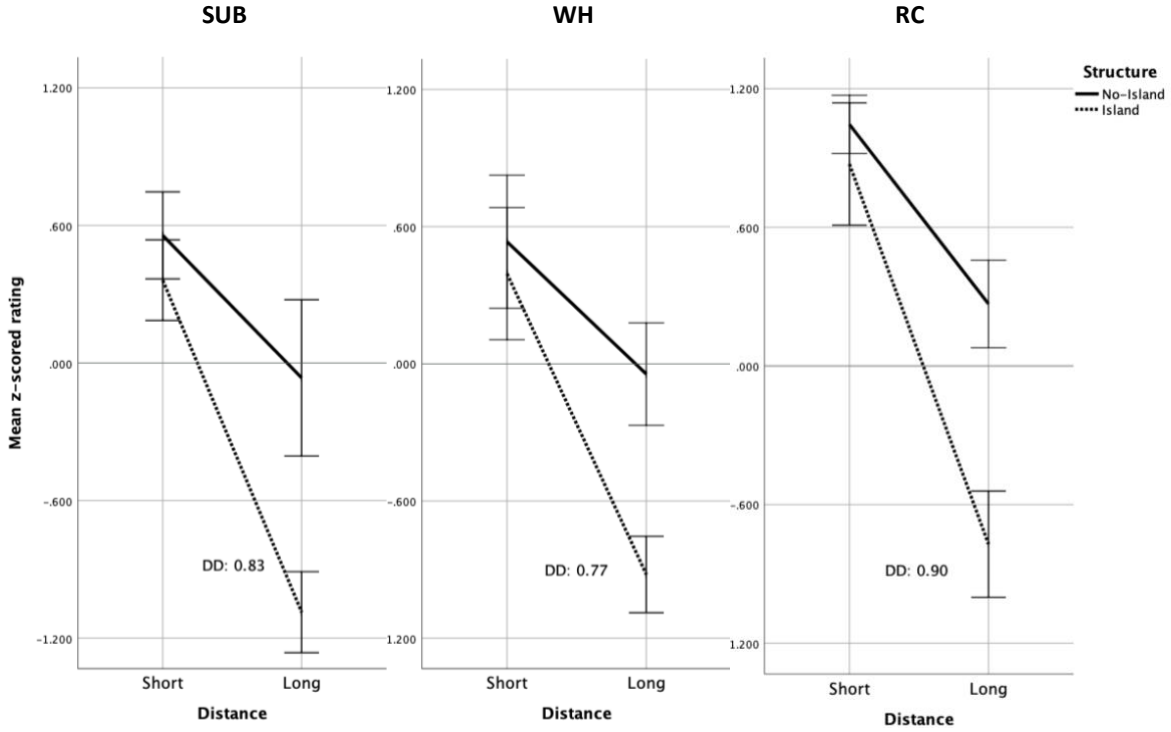

Figure 5: Interaction plots of the control group's ratings of the English items.

First, for the subject island, there are statistically significant differences in the ratings for the variables STRUCTURE and DISTANCE, where both the ISLAND and the LONG condition were rated lower than the NO-ISLAND and the SHORT condition. Crucially, there is a statistically significant interaction effect of these variables, $p = 0.002$, entailing an island effect. This is further supported by the DD-score (i.e., the size of the island effect, cf. sub-chapter 3.3.1); 0.83. Since the subject island was included as a point of reference, it is expected that any island viewed as unacceptable/a strong island will display a DD-score around 0.80.

Second, for the embedded question island, there are statistically significant interaction effects for both independent variables. Moreover, there is a statistically significant

[11] An interaction effect entails that the main effects cannot be interpreted without POST HOC testing/paired t-tests. These have been executed for all islands that display an interaction effect, but the results are not reported here, as it is not customary to include these details in research on island effects.

interaction effect of STRUCTURE and DISTANCE, $p = 0.009$. The embedded question island's DD-score, 0.77, despite being smaller than the subject island's DD-score, signifies a considerable island effect.

Finally, the relative clause island follows the pattern established by the two previous islands by having statistically significant effects for both the independent variables and their interaction, the latter $p = 0.000$. Interestingly, the DD-score for this island, at 0.90, is actually higher the baseline provided by the subject island's DD-score.

Thus, the control group's ratings of the English items provided evidence that supports rejecting the null hypothesis, i.e., there is an island effect present in all three islands. The DD-scores, which all are closer to 1 than 0, support these findings. Furthermore, both the ANOVA-analysis and the DD-scores of the control group provide a baseline for the experimental group's ratings of the English items.

4.2.2 Experimental group: Norwegian Teenagers

An overview of the experimental group's mean z-scored rating of each English target sentence is included in Appendix J2. Table 5 summarizes the mean z-scored rating and the standard deviation for each condition for the experimental group's ratings of the English items.

Table 5: Experimental group's mean z-scored rating and standard deviation between participants pr. condition of English items.

Island	Condition	Mean	sd.
SUB	NO-ISLAND | SHORT	0.29	0.79
	NO-ISLAND | LONG	0.01	0.85
	ISLAND | SHORT	0.23	0.92
	ISLAND | LONG	-0.41	0.89
WH	NO-ISLAND | SHORT	0.32	0.82
	NO-ISLAND | LONG	0.04	0.74
	ISLAND | SHORT	0.08	0.78
	ISLAND | LONG	-0.44	0.71
RC	NO-ISLAND | SHORT	0.79	0.83
	NO-ISLAND | LONG	0.02	0.90
	ISLAND | SHORT	0.66	0.84
	ISLAND | LONG	-0.36	0.70

As for the control group, the mean scores only provide an initial understanding of any possible super-additive interaction effect in the ratings. Therefore, a two-way repeated-measures ANOVA-analysis was performed. The results of the analysis of STRUCTURE, DISTANCE and their interaction are provided in Table 6.

Table 6: ANOVA-analysis of the experimental group's ratings of the English items.

Island	Variable	MS	F	p	Effect size
SUB	STRUCTURE	0.672	6.037	0.032	0.354
	DISTANCE	2.540	18.351	0.001	0.625
	INTERACTION	0.365	6.076	0.031	0.356
WH	STRUCTURE	1.555	15.123	0.003	0.579
	DISTANCE	1.925	16.908	0.002	0.606
	INTERACTION	0.193	2.810	0.122	0.203
RC	STRUCTURE	0.755	8.111	0.016	0.424
	DISTANCE	9.736	98.775	0.000	0.900
	INTERACTION	0.200	4.248	0.064	0.279

As is clear from the above table, only the subject island displays a statistically significant interaction, p = 0.031. Figure 6 shows interaction plots of the mean scores, where parallel lines indicate no island effect and gaping lines illustrate a super-additive island effect.

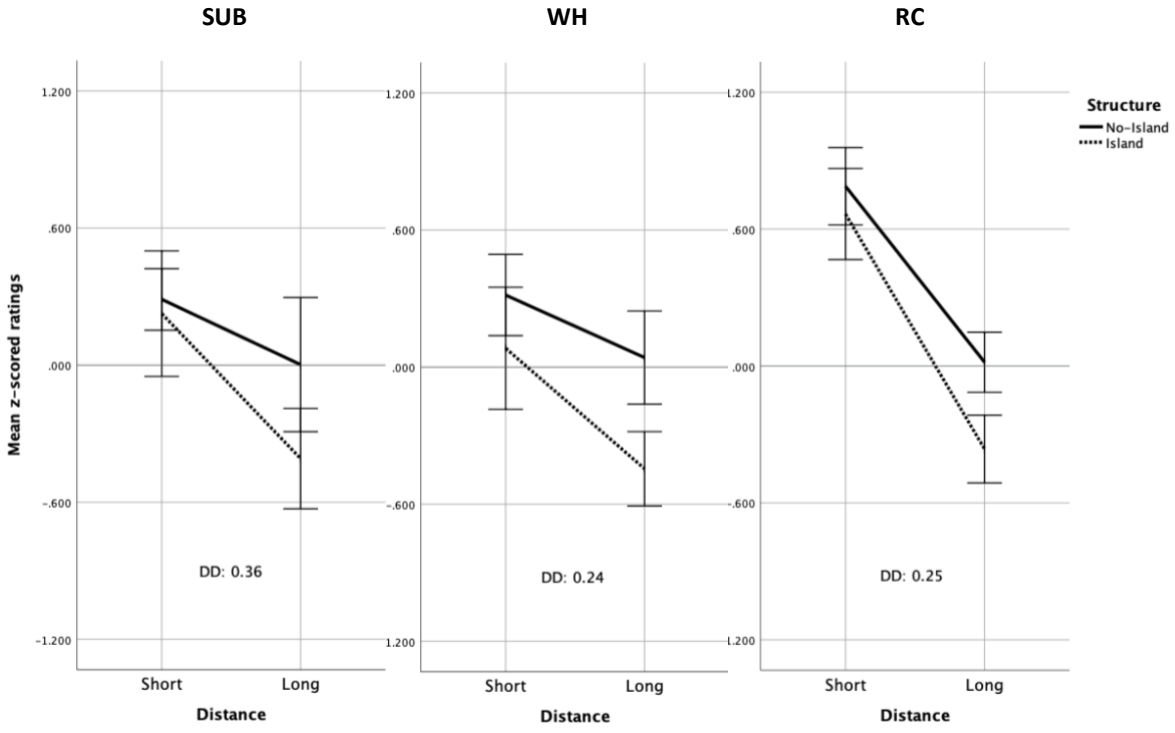

Figure 6: Interaction plots of the experimental group's ratings of the English items.

First, both STRUCTURE and DISTANCE were shown to influence the results of the subject island, where the conditions ISLAND and LONG resulted in lower ratings. For the interaction effect, the null hypothesis that there is no interaction between STRUCTURE and DISTANCE is rejected at $p = 0.046$. This means that for the subject island, the participants' ratings displayed an island effect. This is also apparent from the visual presentation of the results in Figure 3, where the lines of the subject island are less parallel than for the embedded question and relative clause islands. However, the relatively high *p*-value indicates that this island effect may be smaller than for the control group. The DD-score at 0.36, which is considerably lower than the control group's DD-score for the same island, further supports this argument.

Second, both STRUCTURE and DISTANCE display an effect on the ratings for the embedded question island; the NO-ISLAND condition received systematically higher ratings than the ISLAND condition and the SHORT condition received higher ratings than the LONG condition. In the final consideration of the ANOVA-analysis, the interaction effect, the results diverge from the isolated main effects; there is no statistically significant interaction, $p = 0.124$. This entails that the data failed to reject the null hypothesis. In other words, the participants' ratings do not display an island effect. The relatively low DD-score of 0.24 further supports this. Despite being lower than, the DD-score is relatively close to the subject island's DD-score.

Finally, the analysis of the relative clause island provides similar results as the embedded question island. The results of the variable STRUCURE show that for these items the presence of an island construction in the sentence leads to lower ratings than if the sentence does not contain an island construction. There is an even stronger correlation between the variable DISTANCE and the ratings, where the SHORT condition is rated systematically higher than the LONG condition. The final consideration, the interaction effect of the independent variables, does not lead to rejection of the null hypothesis, $p = 0.062$. Thus, similarly to the embedded question island, the data did not show a statistically significant island effect for the relative clause island. As with the other islands, the DD-score aligns with the interaction effect; 0.25. The relative clause islands' DD-score is very similar to that of the embedded question island, suggesting that these items were rated fairly similarly.

Thus, the experimental group's ratings of the English items displayed a statistically significant interaction effect only for the subject island. The data failed to reject the null hypothesis for the embedded question and relative clause island items, suggesting that there are no island effects for these islands in English for the experimental group.

4.3 NORWEGIAN ITEMS

An overview of the experimental group's mean z-scored rating of each Norwegian target item is included in Appendix J3. Table 7 summarizes the mean z-scored ratings and standard deviations for each condition for the experimental group's ratings of the Norwegian items, separated by island type.

Table 7: Experimental group's mean z-scored rating and standard deviation between participants pr. condition of Norwegian items.

Island	Condition	Mean	SD
SUB	NO-ISLAND | SHORT	0.38	0.83
	NO-ISLAND | LONG	-0.11	0.83
	ISLAND | SHORT	0.51	0.76
	ISLAND | LONG	-0.68	0.81
WH	NO-ISLAND | SHORT	0.23	0.83
	NO-ISLAND | LONG	0.16	0.77
	ISLAND | SHORT	0.22	0.82
	ISLAND | LONG	-0.43	0.76
RC	NO-ISLAND | SHORT	0.90	0.77
	NO-ISLAND | LONG	0.10	0.76
	ISLAND | SHORT	0.87	0.87
	ISLAND | LONG	-0.32	0.78

As for the two other experiments, the data were further analyzed by a two-way repeated-measures ANOVA analysis. The results of this analysis, considering the factors STRUCTURE, DISTANCE and their interaction effect, are summarized in Table 8.

Table 8: ANOVA-analysis of the experimental group's ratings of the Norwegian items.

	Variable	MS	F	p	Effect size
SUB	STRUCTURE	0.618	6.328	0.029	0.365
	DISTANCE	7.973	58.275	0.000	0.841
	INTERACTION	1.438	9.033	0.012	0.451
WH	STRUCTURE	0.864	23.297	0.001	0.679
	DISTANCE	1.624	18.517	0.001	0.627
	INTERACTION	0.813	22.108	0.001	0.668
RC	STRUCTURE	0.442	2.616	0.134	0.192
	DISTANCE	11.814	101.470	0.000	0.902
	INTERACTION	0.448	6.861	0.024	0.384

Surprisingly, in light of the experimental group's ratings of the same islands in English, there are significant interaction effects for all three islands. The super-additive island effects are apparent from the diverging lines for all islands in Figure 7.

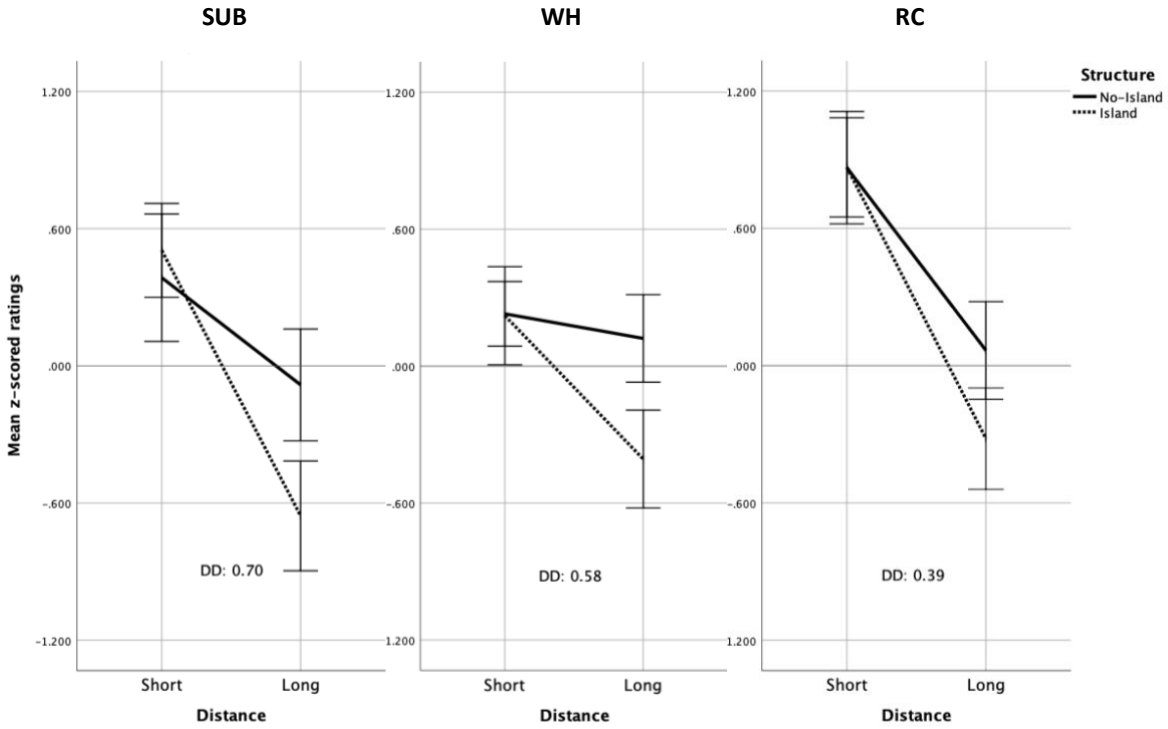

Figure 7: Interaction plots of the experimental group's ratings of the Norwegian items.

First, the isolated variables STRUCTURE and DISTANCE have statistically significant effects on the participants' ratings of the subject island items. Moreover, there is a statistically significant interaction effect, $p = 0.012$. The Norwegian subject island's DD-score, 0.70, is similar to the control group's DD-score and far above the experimental group's DD-score for the corresponding items in English.

Second, both STRUCTURE and DISTANCE display an effect on the ratings of the embedded question island items. However, in contrast to the experimental group's ratings of the English items, which showed no interaction effect for the embedded question island, the same group's ratings do so for the Norwegian embedded question island, $p = 0.001$. Thus, there is a super-additive island effect for the embedded question island in Norwegian. The DD-score of 0.58 also signifies an island effect. It is interesting to note that, like for the subject phrase, the embedded question island's DD-score is more similar to the control group's DD-score than to the experimental group's DD-score of the corresponding English island structure.

Finally, for the relative clause island, the main effect of the variable STRUCTURE does not come out statistically significant, while DISTANCE had a statistically significant effect on the ratings. The latter is apparent from Table 7 and Figure 7, where both versions of the NO-ISLAND condition received similar mean z-scored ratings. Additionally, there is a statistically significant interaction effect for the Norwegian relative clause island, $p = 0.024$. This entails that the experimental group's ratings displayed a super-additive

island effect. The DD-score for this island, at 0.39, also reflects this island effect. Interestingly, the relative clause island DD-score is considerably lower than the other Norwegian islands' DD-scores, and just above the experimental group's English subject island DD-score, which was the only island with an interaction effect for the English items. Nevertheless, the data display an interaction effect, entailing that the experimental group does not accept extraction from relative clause islands.

In conclusion, the participant's ratings of the Norwegian items display statistically significant interaction effects for the embedded question, relative clause and subject island. Furthermore, the DD-scores show that extraction from the embedded question island is slightly less acceptable than the relative clause island, contradicting results from previous research (cf. section 2.1.3, 2.1.4 and 2.3). Overall, the statistically significant interactions for the embedded question and relative clause island may also seem to contradict previous research, which has suggested that Norwegian allows extraction from these islands. Considering that island effects were not expected for the Norwegian items, the following sub-sections investigate possible explanations for these results, firstly looking at individual variation in participants.

4.4 INDIVIDUAL VARIATION

As briefly explained, the data did not conform to the expected results, necessitating an investigation of possible reasons. An interesting approach to this is to see whether there are any differences between the participants, or even intra-speaker variation. Thus, much of the data in this section investigate the ratings of each participant in both Norwegian and English. As stated in chapter 3, a code schema was used to compare each participant's data across the two languages. To guarantee their anonymity, they created this code themselves following a preset format. The format was presented through a short instruction text, which included an example code (see appendix D). Unfortunately, due to unknown reasons, some of the participants misunderstood this code schema and used the example code instead of creating their own. Since the same example was given to all participants, this means that some of the participants used an identical code. In total, 36 surveys were answered using the example code; 18 in the experiment containing the English items, and 19 in the experiment containing the Norwegian items. The misunderstanding of the example code is unfortunate for two reasons. Firstly, since the code was supposed to provide a connection between the two experiments, the participants were asked to provide background information only in the first of these; the survey containing the English items. Thus, for the participants who used the example code, it is not possible to connect the background data to the ratings of the Norwegian items. Secondly, the fact that a substantial number of participants used the example code reduces the number of participants available for cross-linguistic comparison; i.e., comparing the judgments of the two experiments for a single participant. Thus, the data used for comparison of the experimental group's ratings in Norwegian and English in the following sections contain 34 participants.

To explore the possible variation at group level, it is useful to look at the distribution of the ratings of the island-violating items for each island. This may reveal whether all the ratings cluster around a small portion of the scale or distribute more evenly. Figure 8 displays the distribution of ratings in each ISLAND | LONG condition pr. island pr. group pr. language.

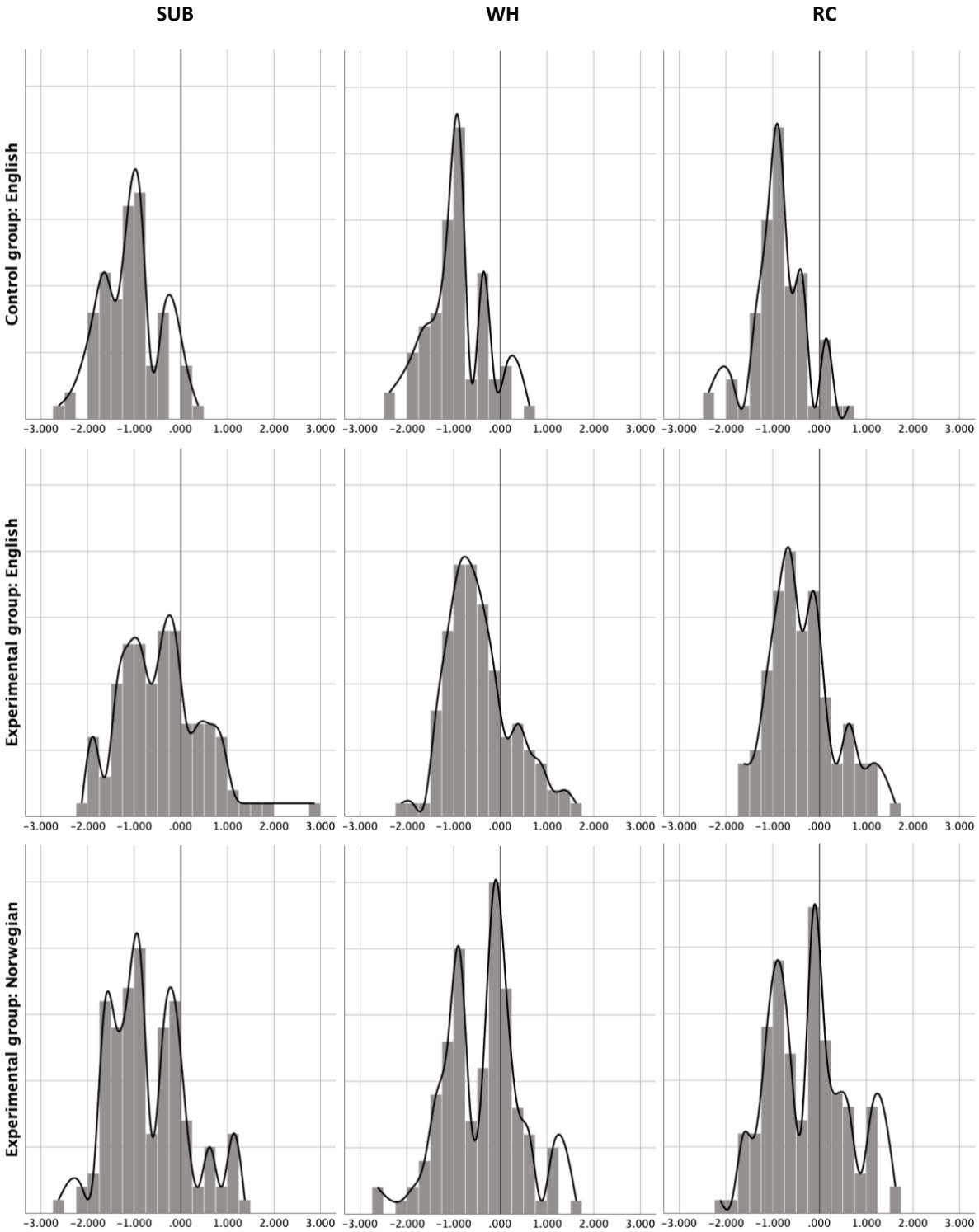

Figure 8: Distribution of z-scored ratings of ISLAND | LONG by group/experiment and island type.

Four patterns should be noted from the above figure. First, the distribution graphs illustrate that there is variation in the ratings of the ISLAND | LONG condition. Naturally, some variation is to be expected, as the items vary in vocabulary, length etc., and speakers of a language can differ in what they perceive as acceptable and unacceptable language. However, there seems to be more variation than would be expected if extraction from island constructions were either completely acceptable or unacceptable,

especially for the experimental group. This points to the second pattern relevant to this discussion; there is more variation in the experimental group's ratings than the control group's ratings. The control group has no z-scored rating in the ISLAND | LONG condition above 1.00 (in fact, there are nearly no z-scored ratings above 0.50), while the experimental group displays several z-scored ratings around or above 1.00, for both languages and all three islands. Scores above 1 indicate clear acceptance. Third, there seems to be an equal amount of variation for the subject island as the two other islands across all three experiments. Since the subject island works as a baseline for an island effect, it is strange that the experimental group's ratings of the English items vary equally in all three islands, considering that the ANOVA-analysis suggests that there are no statistically significant interaction effects present for the embedded question and relative clause islands. Finally, the distribution of the island-violating items demonstrates that the even though the ANOVA-analysis and the DD-scores of the Norwegian items suggested that extraction from an island construction is not allowed, the sentences do not seem to be completely unacceptable. Despite most of the ratings centering below zero (which should be anticipated, considering the statistically significant interaction effects of the ANOVA-analysis), there is a considerably portion of ratings above that level. Furthermore, some ratings are above the FILL-GOOD level. In addition, as already discussed, the distribution of the Norwegian ratings is more similar to the experimental group's than the control group's ratings of the English items, where the former displayed no statistically significant interaction effect for the embedded question and relative clause islands.

In conclusion, there seem to be inconsistencies in the experimental group's ratings in both languages. These can represent variation at group level, i.e., variation between participants, or at participant level, i.e., intra-speaker variation. The following sub-sections try to uncover the extent of this variation, focusing on the experimental group's ratings.

4.4.1 Variation between participants

In order to determine whether there are differences between the participants, an exploration of each participant's DD-score was executed. If the DD-scores center around one specific point on the x-axis, there are few to no relevant differences between the participants. Conversely, if the DD-scores are distributed across the x-axis, this suggests variation between participants. Figure 9 displays the distribution of the experimental group's DD-scores by language and island type.

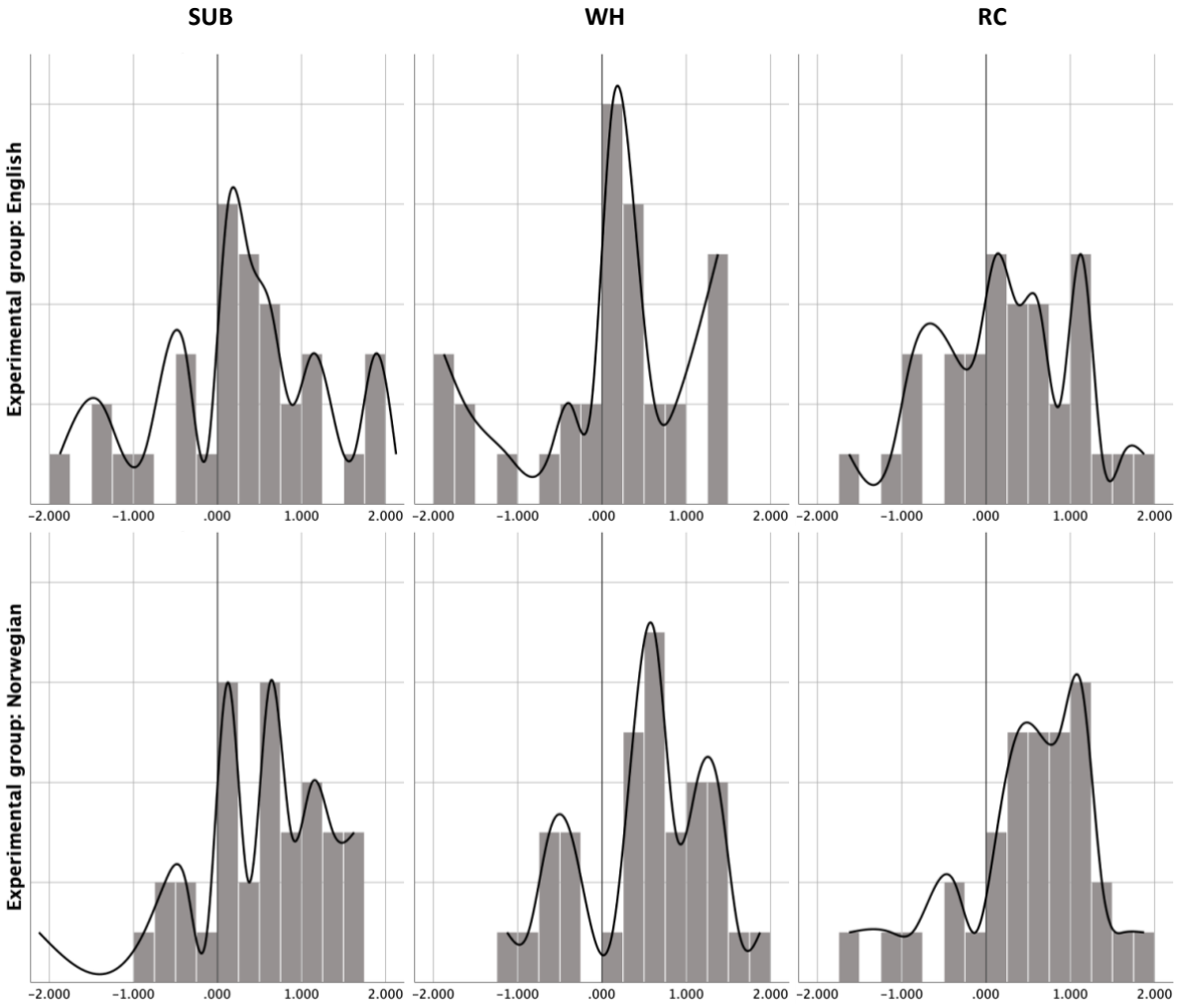

Figure 9: Distribution of the experimental group's DD-scores by language and island type. Note: a DD-score around or close to zero signifies little to no island sensitivity, while a large, positive DD-score (right end of the scale) signifies island sensitivity and that participants reject island violations.

Figure 9 offers three interesting points of discussion. First, the experimental group's DD-scores for both languages and all three islands are distributed from -2.00 to 2.00, suggesting variation between the participants.[12] Thus, despite the results of the ANOVA-analyses, not all experimental group participants accept the island-violating sentences in English and reject the corresponding items in Norwegian. Second, and perhaps most interestingly, the majority of participants seem to have DD-scores above zero for both languages, signifying rejection of island constraint violations. This is surprising considering that the ANOVA-analysis did not find interaction effects for the experimental group's ratings of the English embedded question and relative clause items. Furthermore, it is interesting that the DD-scores are similarly distributed in both languages, when Norwegian did, and English did not display super-additive island effects. Third, it is

[12] As Kush et al. (2018) specify, a DD-score considerably lower than zero "is not interpretable given current theories" (p. 762), and I do not focus on these. They are interesting though, since they indicate that some non-island sentences are more acceptable/better than the island-violating sentences.

particularly interesting to investigate the distribution of the participant's DD-scores for the subject island. As already explained, this island was included due to the suggestion of a cross-linguistic rejection of extraction out of such structures, which makes for a reference on the behavior of large island effects. Accordingly, the subject island should not display inter-speaker variation, and DD-scores should cluster on the right end of the scale. However, Figure 9 illustrates variation also within the subject island, with several DD-scores at or around 0.00, indicating little to no island-sensitivity. Furthermore, similar to the z-scored ratings of the island-violating items, the distribution of each participant's DD-score for the embedded question and relative clause islands is similar to the subject island's distribution of DD-scores in both languages, which is strange considering that (i) for English, the subject island supposedly displays a strong island effect, while the embedded question and relative clause islands display small to no island effects, suggesting different distributions of participants' DD-scores, and (ii) the ANOVA-analysis did not find interaction effects for the embedded question and relative clause island for the experimental group's ratings of the English items, while it did for Norwegian in the same group, suggesting that these distributions should differ.

Since the DD-scores revealed differences between participants, it is interesting to investigate whether the Norwegian data provide evidence of consistent accepters and rejecters, or whether it is the case that the same participants accept some islands and reject others. If there are some participants that consistently accept, but are outnumbered by participants that consistently reject, this could explain why the ANOVA-analysis found the unexpected interaction effects. In order to investigate whether there is such a pattern of acceptance and rejection, the maximum, minimum and median scores of each participant were explored. Table 9 presents these scores, per participant and island, sorted into six categories at four levels. The four levels of acceptance and rejection are based on the middle ground of the scale and the participants' ratings of filler items: acceptance as at or above FillGood (1), acceptance as or above 0.00 (2), rejection as or below -0.01 (3), rejection as or below FillBad (4). The categories are based on the maximum ratings and represent a rating which signifies acceptance of all islands (A), embedded question and relative clause islands (B), only embedded question islands (C), only relative clause islands (D), rejection of all islands (E) or no specific pattern (F).

Table 9: Norwegian maximum, minimum and median score pr. participant and island, sorted by which island(s) is rated acceptable by the maximum score.

Category	Level	Partici-pant	WH			RC			SUB		
			Max	Min	Med	Max	Min	Med	Max	Min	Med
A	1	S16	1.94	-1.43	-1.43	1.27	-1.43	-0.08	0.59	-0.08	-0.08
A	1	S28	1.62	-1.27	-0.69	1.62	-0.69	-0.69	1.04	-0.69	-0.69
A	1	S36	0.43	-0.92	-0.92	0.43	-0.92	-0.24	1.10	-1.59	-1.59
A	1	S38	0.56	-1.46	-0.11	0.56	-2.14	0.56	0.56	-0.79	-0.79
A	1	S8	0.63	-0.77	-0.07	0.63	-1.47	0.63	0.63	-2.17	-0.07
A	2	S17	0.23	0.23	0.23	0.23	-1.52	-1.52	0.23	-1.52	-1.52
A	2	S2	0.14	-1.96	0.14	0.14	-0.56	0.14	0.14	0.14	0.14
A	2	S20	0.35	-0.74	-0.74	0.89	-0.74	-0.74	0.35	-1.28	-0.74
A	2	S47	0.96	-0.82	0.07	0.07	-0.82	0.07	0.07	-1.71	-0.82
A	2	S49	1.02	-1.08	1.02	0.32	-1.79	-1.08	0.32	-1.08	-0.38
A	2	S54	0.34	-1.41	-1.41	2.09	0.34	2.09	0.34	-1.41	0.34
B	1	S3	0.58	-1.03	-1.03	0.58	-1.03	0.04	-1.03	-1.03	-1.03
B	1	S39	0.44	-1.71	-0.99	1.15	-0.99	0.44	-0.28	-0.99	-0.28
B	2	S40	0.02	0.02	0.02	0.02	-0.85	0.02	-0.85	-1.71	-1.71
B	2	S45	0.03	-1.06	0.03	0.03	-1.06	-1.06	-1.06	-1.06	-1.06
B	2	S55	0.40	-0.93	-0.27	0.40	-0.93	-0.93	-0.27	-1.59	-0.27
B	2	S61	0.12	-0.92	-0.40	1.17	-1.45	-0.40	-0.92	-1.45	-1.45
C	1	S25	0.77	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.93	-0.08
C	2	S22	0.22	-0.95	-0.95	-0.37	-0.95	-0.37	-0.37	-1.54	-1.54
C	2	S43	0.12	-1.18	0.12	-0.53	-1.18	-1.18	-1.18	-1.18	-1.18
C	2	S57	0.10	-0.44	-0.44	-0.44	-0.97	-0.97	-0.97	-0.97	-0.97
D	1	S11	1.00	0.41	0.41	-0.18	-1.36	-1.36	-0.18	-1.36	-1.36
D	1	S52	-0.63	-1.15	-1.15	1.46	-1.15	-0.63	-0.11	-1.15	-0.63
D	1	S60	-0.11	-0.11	-0.11	1.17	-0.11	-0.11	-0.11	-1.38	-1.38
E	4	S21	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63
E	4	S26	-0.70	-1.28	-0.70	-0.70	-0.70	-0.70	-0.70	-1.28	-0.70
E	4	S53	-1.01	-2.08	-1.01	-1.01	-1.01	-1.01	-1.01	-2.08	-1.01
E	3	S19	-0.23	-1.01	-1.01	-0.23	-1.01	-0.23	-0.23	-1.79	-1.01
E	3	S64	-0.48	-1.71	-0.48	-0.48	-1.71	-0.48	-0.48	-1.71	-0.48
F	N/A	S5	-0.13	-1.67	-0.13	-0.13	-0.13	-0.13	1.41	-1.67	-0.13
F	N/A	S7	-0.06	-2.50	-0.87	-0.06	-0.87	-0.87	0.76	-0.06	-0.06
F	N/A	S24	-0.57	-1.36	-1.36	-0.57	-1.36	-0.57	1.01	-1.36	0.22
F	N/A	S31	0.35	-0.55	0.35	0.35	-0.55	0.35	1.24	-1.44	-1.44
F	N/A	S37	0.87	-1.82	0.87	-0.02	-1.82	-0.02	0.87	-0.02	-0.02

A majority of the participants fall within one of the first four categories (11 in A; six in B, four in C; three in D), which all signify acceptance of at least one island-violating item. The final category, F, also includes five participants who accept some island-violating sentences. Category E, which signifies consistent rejection of extraction from all three islands, contains five participants. Thus, as claimed earlier, the majority of the maximum scores represent acceptance at one of the two levels, which entails that most participants accepted at least one Norwegian island-violating item. This further supports the claim made earlier, that the Norwegian ISLAND | LONG items are not unacceptable in all cases. Even though most of the participants rated at least one item from each island as acceptable, there seems to be great variability between the participants. The maximum scores range from -1.18 to 2.09 (median score 0.12), while the minimum scores range from -2.50 to 0.41 (median score -1.08). Thus, even though the scores reflect the findings from the ANOVA-analysis, that the island-violating sentences are rated as unacceptable collectively, there seems to be great variation within the group. This is further emphasized by the six categories of participant behavior, since most participants accepted at least one/some island violations.

The maximum, minimum and median scores further answer the question of whether there are some participants that consistently reject or accept the island constraint violations. None of the participants rated all island-violating items as acceptable, and only five participants rated all such items as unacceptable. Thus, there seems to be no consistent accepters and few consistent rejecters.

Finally, an examination of the median scores of each participant suggests that in addition to the already established variation between participants, there seems to be some intra-speaker variation. Since each participant rated three ISLAND | LONG items, the median score is expected to signify rejection, cf. the ANOVA-analysis' interaction effect. However, 16 participants had a median score above 0.00 for at least one island, entailing that some of the participants' ratings signified acceptance of at least some island constraint violations, further entailing that there is variation in each participants' ratings.

4.4.2 Intra-speaker variation

In order to determine whether there is variability in the ratings of each participant and how these potential differences distribute, each participant's maximum, minimum and median score were further explored. Looking back at the information in Table 9, it is clear that within the majority of participants, for at least one of the island types, the maximum, minimum and median scores differ. Since each participant rated three island-violating items of each island type, the maximum, minimum and median score represent the judgments of every island-violating item for each participant. Thus, scores that do not match entails that all the Norwegian ISLAND | LONG items a participant rated in the acceptability judgment test were given a different score. This suggests intra-speaker variation.[13]

[13] In addition, there seems to be some between-item differences for the Norwegian items. See Appendix K for histograms for each item. The histograms indicate that some items are consistently rejected (low z-scores) and other are consistently accepted (high z-scores), but that most items have similarly distributed ratings. The differences between items are therefore not pursued any further.

Exploring the minimum and maximum scores of English and Norwegian, further supports the claim of intra-speaker variation in the experimental group, also for English. See Figure 10 for correlations of the maximum and minimum scores of each participant, separated by language and island type.

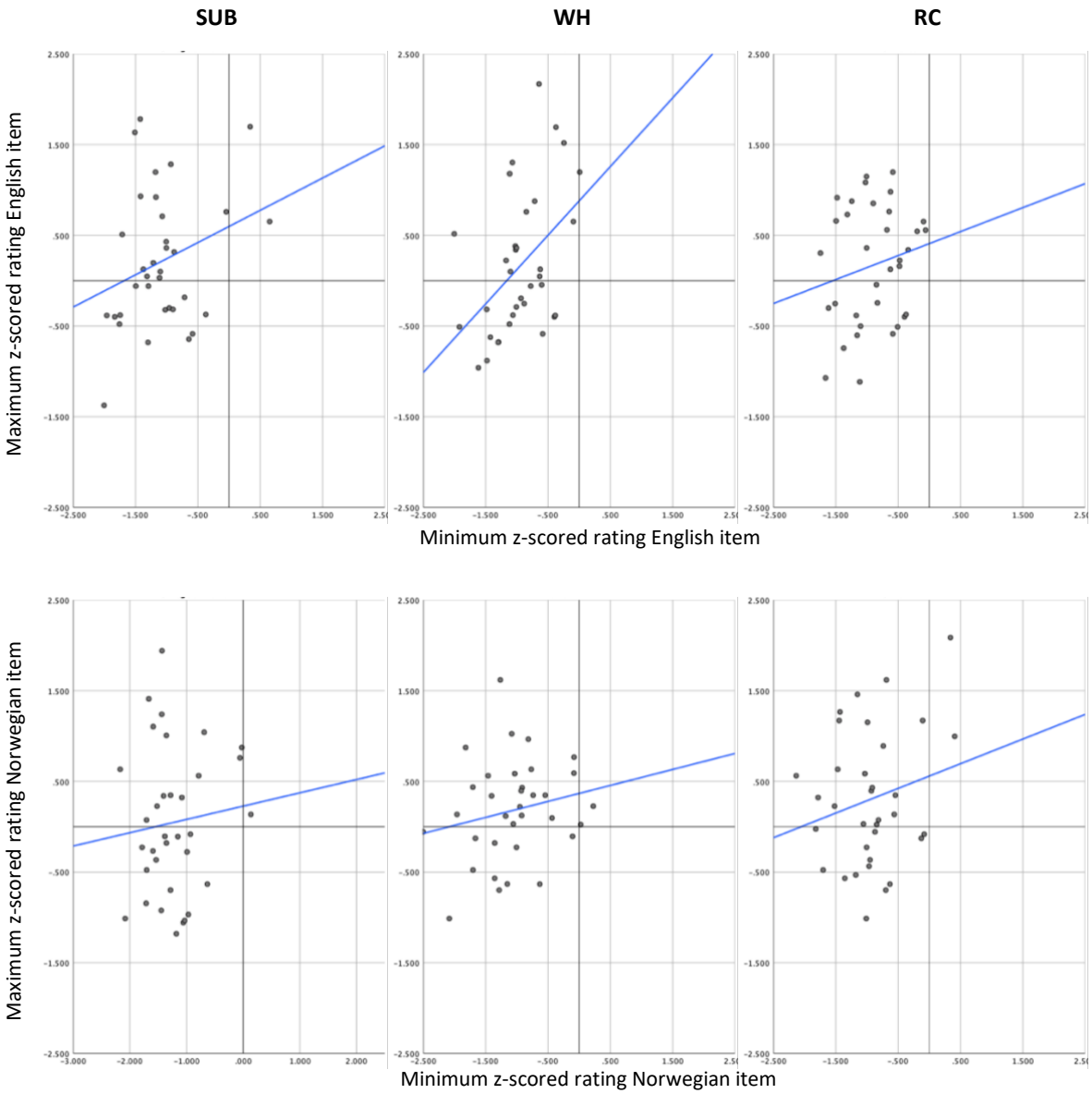

Figure 10: Correlation of high and low score by participant, separated by language and island type.

The graphs in Figure 10 further support the claim of intra-speaker variability. In this figure, each dot signifies one participant. The graphs are divided into four quadrants: quadrant 1, upper right, equals that both scores (maximum and minimum) signify acceptance (above 0); quadrant 2, lower right, equals that the maximum score signifies rejection and that the minimum score signifies acceptance (not possible); quadrant 3, lower left, equals that both scores signify rejection; while quadrant 4, upper left, indicates acceptance by maximum score and rejection by minimum score. Apart from the subject island, where the majority if participants are in the quadrant 3, the majority of

participants are in quadrant 4 for the embedded question and relative clause island, suggesting intra-speaker inconsistencies.

4.4.3 Inconsistencies between languages

As is clear from the previous sub-sections, there seems to be variation in the ratings of the ISLAND | LONG condition, both at an inter- and intra-speaker level. Since this thesis investigates transfer in SLA, it is interesting to investigate whether there is any correlation between the ratings in Norwegian and English. The scatterplot in Figure 11 displays any possible correlation between the mean z-scored rating of the Norwegian (y-axis) and English (x-axis) island-violating items.

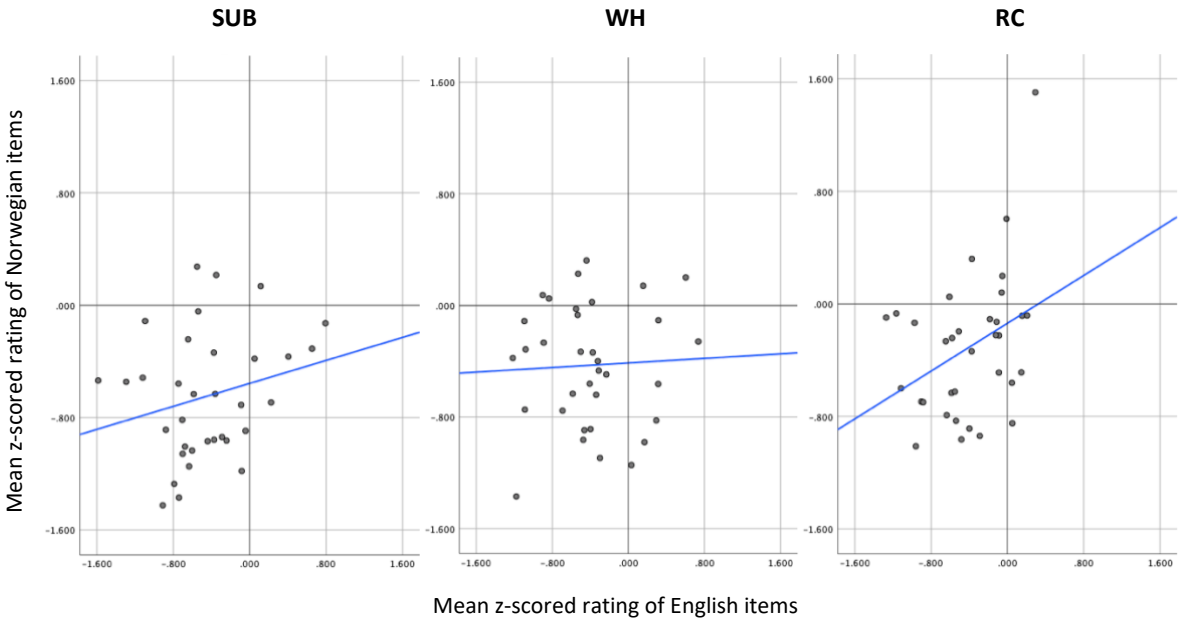

Figure 11: Correlation of the mean z-scored rating of Norwegian and English island-violating item.

If there was a correlation between the experimental group's z-scores in Norwegian and English, each dot should correspond to the same number on both axes. The linear regression line helps to see this more clearly; if there is a correlation, the blue line in Figure 11 would go from the bottom-left corner and into the top-right corner. The graphs in the above figure show that there is little consistency in the mean ratings of each individual participant for all three islands across the two languages. This indicates that the mean z-scored rating in one language does not predict a similar score in the other language. There are some differences between the islands, where there seems to be more of a correlation between a high mean z-scored rating in Norwegian and English for the relative clause island.

The claim of little to no correlation between the two languages is further supported by looking at the correlation of the participants' DD-scores in Norwegian and English. Figure 12 display the possible correlations of DD-scores between Norwegian and English, where each participant is represented by a single dot. Once again, a linear regression line moving from the bottom-left to the top-right corner displays a correlation.

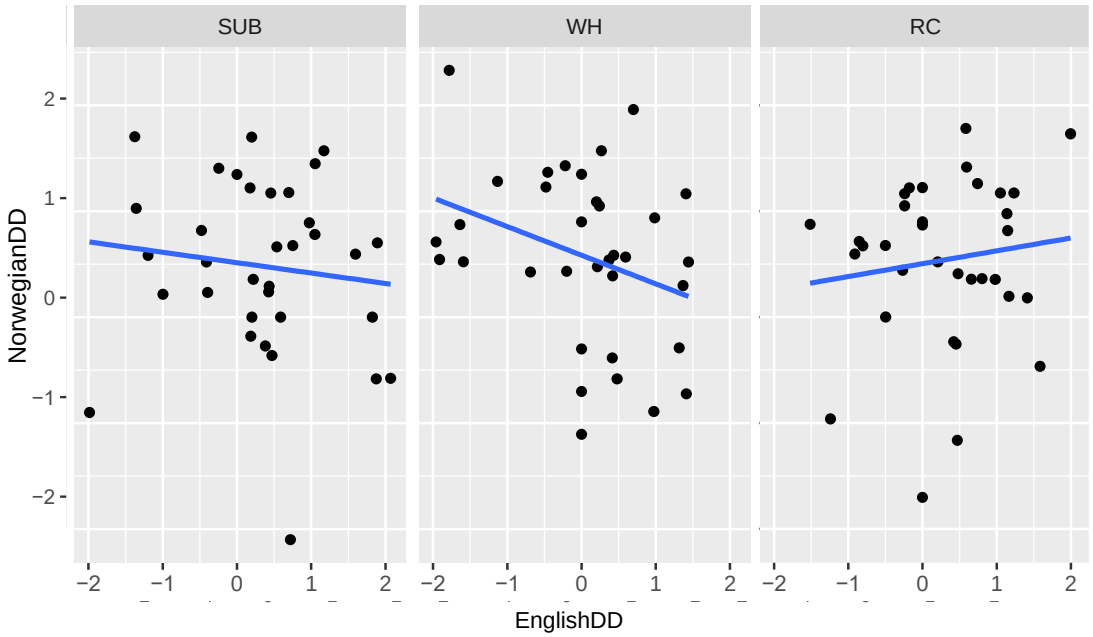

Figure 12: Correlation of Norwegian (y-axis) and English (x-axis) DD-scores by island.[14]

Apart from some DD-scores which align and suggest that there may be some consistent accepters and rejecters of island constraint violations across languages, there seems to be no clear overall correlation between the Norwegian and English DD-scores. This means that the participants were not consistent in their ratings across the languages and that a certain DD-score in Norwegian does not predict a similar DD-score in English.

4.5 DD-SCORES AND PROFICIENCY

From a learnability and acquisition perspective, it is interesting to look at how language proficiency relates to the relative acceptance or rejection of English island constraint violations. The background data for the experimental group provided two ways of assessing L2 proficiency; grades given at school and a self-rating scale of perceived competence.

The participants were asked to provide their most current final grade in English, where the possible answers ranged from 1 to 6. Figure 13 displays any possible correlations of the experimental group's English DD-score and grade.

[14] Dave Kush helped me by creating this figure. Analysis was done by me, and any flaws are my responsibility.

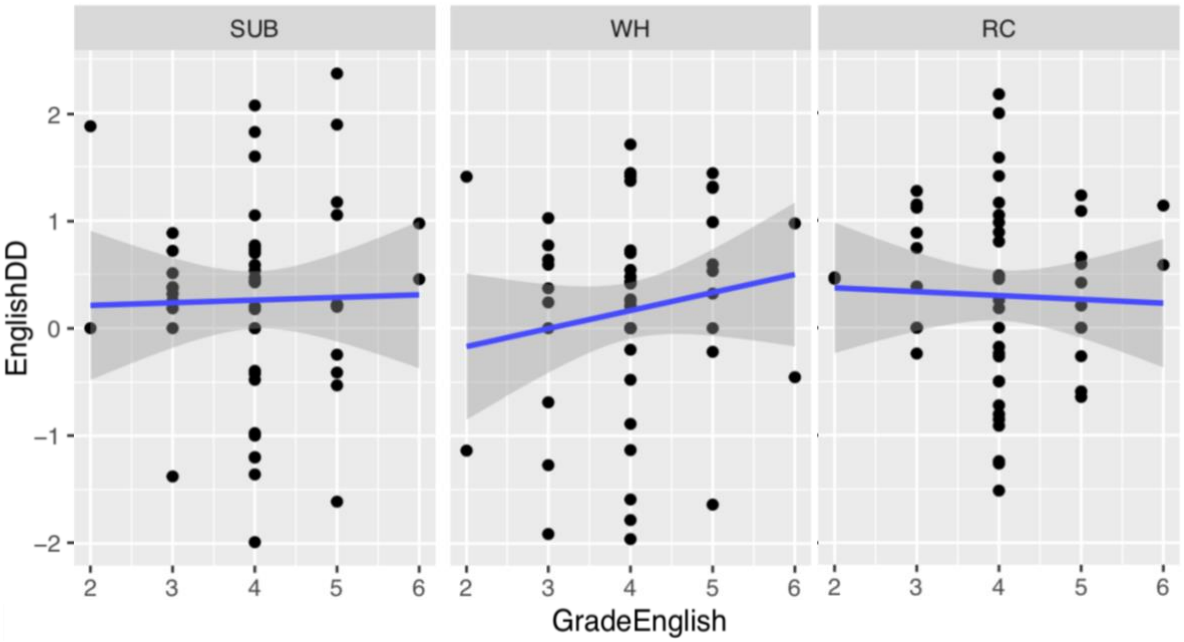

Figure 13: Correlation of English Island DD-scores and grade by participant.[15]

As is clear for the linear regression line, which were to move from bottom-left to top-right corner if there was a correlation, there seems to be little to no correlation between grades and proficiency. It should be noted that since most of the participants cluster at the center of the grade scale, there are fewer participants on the lower and higher end of the scale, making it more difficult to produce reliable results.

The other estimate of proficiency, the self-rating scale, give similar results. The self-rating scale ranged from level 1 to level 4, where each of these levels were represented with a textual description (see appendix B1, question 9). Figure 14 displays the correlations of the experimental group's English DD-scores and the self-rating scale for each island.

[15] Dave Kush helped me by creating this figure. Analysis was done by me, and any flaws are my responsibility.

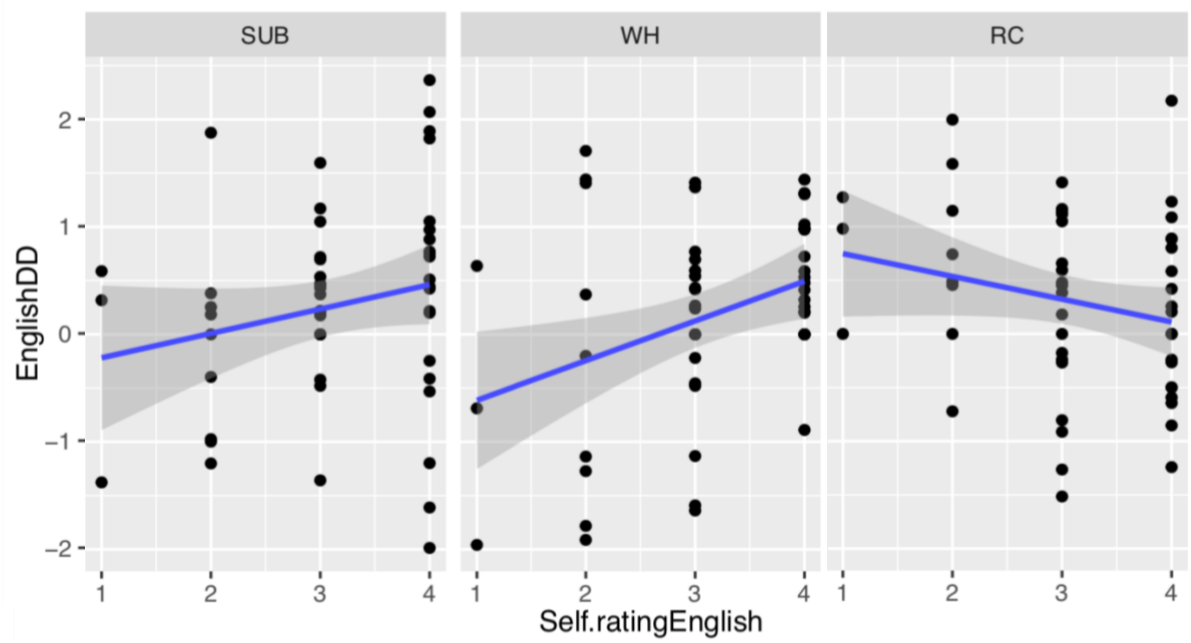

Figure 14: Correlation of English DD-scores and self-rating scale by participants.[16]

There is a more apparent trend towards a correlation between the DD-scores and self-reported English proficiency for two of the conditions. For both the subject and the embedded question island, high (self-reported) proficiency to some extent seems to lead to higher DD-scores, i.e., rejection of island constraint violations. Interestingly, the correlation is opposite for the relative clause island; high proficiency leads to lower DD-scores.

Collectively, the graphs display little to no correlation between increased proficiency and rejection of the subject island-violating items, i.e., a high DD-score. There seems to be a weak correlation between increased English proficiency and higher DD-scores for the embedded question island. In contrast, there is a weak correlation between increased proficiency and lower DD-scores for the relative clause island. However, all correlations are weak and suggestive at best.

4.5.1 CP-stacking and DD-scores

As a final note, each participant's Norwegian DD-score and mean z-scored rating of the CP-STACK items were compared. Since CP-stacking is proposed to enable island constraint violations in Norwegian, these should be connected, i.e., high mean z-scored rating of CP-STACK should predict a low DD-score. However, there is no apparent correlation between high z-scored mean ratings of the CP-STACK condition and low DD-scores in Norwegian (see appendix I for scatterplots which display these correlations).

[16] Dave Kush helped me by creating this figure. Analysis was done by me, and any flaws are my responsibility.

4.6 SUMMARY OF RESULTS

Due to the length and complexity of this chapter, a summary is in order. The control group behaved as expected; statistically significant interaction effects were found for all three islands, indicating island effects. Unexpectedly, analysis of the experimental group's ratings gave similar results for the Norwegian items, but not for the English embedded question and relative clause island. Since the Norwegian ratings did not align with the expected results, the following sections investigated inter- and intra-speaker variation. The experimental group's ratings suggest variation at both levels, both for the English and Norwegian items. Moreover, there seems to be no clear correlation between ratings/DD-scores in Norwegian and English. Finally, there seemed to be little to no correlation between proficiency and DD-scores.

5 DISCUSSION

This chapter interprets the results of the experiments and discusses their implications in light of the theoretical background and previous research. Firstly, the results of each of the three experiments, the control group's ratings of the English items; the experimental group's ratings of the English items; and the experimental group's ratings of the Norwegian items, are briefly summarized and compared to the expected outcomes. The subsequent section focuses on the ratings of the Norwegian items alone. Finally, the discussion returns to the main research questions of the thesis; uncovering the role of transfer to further answer the logical problem of language acquisition, and whether a universal account of islands is possible considering the suggested cross-linguistic differences.

5.1 HYPOTHESES AND RESULTS

In line with previous research suggesting that the three islands in question (embedded question, relative clause and subject islands) block A'-movement in English (e.g., Lindahl, 2014; Sprouse et al., 2016; Sprouse et al., 2012), the control group was expected to reject all island-violating sentences. This entails that the analysis of the data should reveal statistically significant interaction effects and relatively high DD-scores. The predicted results were borne out; all islands had statistically significant interaction effects $p = \leq 0.02$ and DD-scores between 0.77 and 0.90. The DD-scores are well above the levels of rejection suggested by Kush et al. (2018), which state that accepters of island violations have DD-scores below 0.25, while rejecters of island violations have DD-scores above 0.25 (p. 762). Thus, the control group's ratings support the current understanding of island constraints in English; syntactic islands prevent association of filler-gap dependencies.

Conforming to the expected results, the experimental group participants did not rate the English items similarly to the control group participants. As claimed repeatedly, previous research suggests that L1 Norwegian speakers allow A'-movement out of embedded questions (Kush et al., 2018; Maling & Zaenen, 1982), and possibly relative clauses (Maling & Zaenen, 1982; Taraldsen, 1982; Åfarli & Eide, 2003). Thus, transfer of a superset grammar would entail no statistically significant interaction effects for the embedded clause and (possibly) the relative clause island, and correspondingly low DD-scores. Both elements of the hypothesized superset grammar are represented in the participants' judgments; $p = >0.05$ and DD-scores at or below 0.25. Furthermore, extraction from the subject island is rejected ($p = 0.031$, DD-score: 0.36), supporting the claims of cross-linguistic rejection of this island type (Kush et al., 2018, 2019; Sprouse et al., 2016). Thus, the ratings indicate confirmation of the thesis' working hypothesis; transfer of a superset grammar. Interestingly, the subject island received a considerably lower DD-score in the experimental group's judgments compared to the control group's judgments. This difference may have several explanations; difference in L1 and L2 grammar, uncertainty in the experimental group, bigger cross-linguistic difference for the subject island than hypothesized etc. Nevertheless, there is a

statistically significant interaction, and I do not pursue the reasons for the experimental group's relatively low subject island DD-score. Ultimately, examining the experimental group's ratings of the English items in connection to previous research and the standard view of cross-linguistic influence suggest transfer of a superset grammar.

Contrary to the suggested acceptability of A'-movement out of embedded questions and relative clauses in Norwegian, which seemed to be confirmed in the experimental group's acceptance of island violations in their L2 English grammar, all three islands displayed significant interaction effects, $p = <0.05$ in the judgments of the Norwegian items. The DD-scores of the Norwegian islands, 0.39-0.70, are all above the rejection-level of 0.25. Accordingly, the results indicate that the participants rejected island constraint violations in Norwegian.

Thus, both groups' ratings of the English items aligned with the expected results, indicating that previous claims of cross-linguistic differences are accurate *and* that island-insensitivity transfer to the L2 grammar. Interestingly, the ratings of the Norwegian items revealed island effects for all islands. The following section discusses the Norwegian items and potential causes of the unexpected outcomes.

5.1.1 Ratings of the Norwegian items

As specified in the previous section, the experimental group's ratings of the Norwegian items did not align with the results which were expected based on previous research (e.g., K. R. Christensen et al., 2013; Kush et al., 2018; Maling & Zaenen, 1982; Taraldsen, 1982). This section briefly discusses some of the possible reasons for the unexpected ratings.

First and foremost, it is possible that this group of Norwegian speakers treat both embedded questions and relative clauses as islands in Norwegian, entailing that they find these constructions to be syntactic boundaries for A'-movement. However, I argue that this is unlikely on two accounts. Firstly, that a small group of people deviate from the norm established by an expanding body of research seems questionable. Secondly, interpretations of the experimental group participants' z-scored ratings suggest that the Norwegian island-violating items are not unacceptable in all cases. This became clear when looking at maximum, minimum and median scores of the Norwegian island-violating items, where 24 of 34 participants had at least one rating (of three possible) which signified relative acceptance for at least one island, cf. section 4.4 and Table 9. Thus, I find it likely that reasons other than syntactic ones are to blame for the unacceptability of the island-violating sentences in Norwegian.

Assuming that these statistically significant interaction effects and the relatively high DD-scores, i.e., the rejection of island constraint violations, were not based on syntactic considerations necessitates an exploration of other aspects of language. As briefly mentioned in chapter 2, there are researchers who argue that island effects are due to semantic constraints (e.g., Engdahl, 1997; Erteschik-Shir, 1973). Advocates of this view propose that extraction is not acceptable in sentences that lack semantic motivation for the movement, i.e., when the participants "cannot imagine or coerce a hypothetical discourse context in which the presuppositions of the island-violating structure are accommodated" (Kush et al., 2018, p. 775). Assuming this view presumably questions the experimental group's ratings of the English items, since these should display the same lack of motivation. However, L1 and L2 proficiency differences may cause the experimental group participants to better understand the sentence's proposition/content

in Norwegian than in English, and therefore to be less accepting of the Norwegian sentences. The sentences were presented without a context (see chapter 3.4 for an explanation of the procedure), which could further support the claim of semantic issues. Moreover, the islands in which the items displayed wh-movement and complex wh-phrases had considerably higher DD-scores than the one with relativized items. This could be taken to suggest that the subject and embedded question islands were seen as particularly unacceptable due to the complex wh-phrases. Arguably, the context in which the island violating sentences would be used in natural language would often not necessitate the complex wh-phrases, which could entail that these items sounded odd. Thus, that the islands which received the highest DD-scores had test items with wh-movement could further support the claim of semantic rather than syntactic reasons for unacceptability.

The idea of different requirements in the participants' L1 and L2 introduces the next point of discussion; that there is a different threshold of acceptability in one's L1 (be it based on semantic, syntactic or other requirements), which lead to similar items receiving different ratings in the two languages. Considering that the experimental group participants are assumed to be more proficient in their L1 than their L2, this could entail that they are more confident in rejecting a Norwegian item purely because it sounds odd, without the ability to say exactly why, while they are more reluctant to do so in English. This could further entail that they have a higher threshold for acceptability in Norwegian. If so, this should be reflected across all the conditions. Inspecting the mean z-scored ratings of the fillers gives no clear indications; the experimental group's mean z-scored ratings of FILL-GOOD and FILL-GOODCATCH in English, 0.72 and 0.78, compared to the same mean z-scored ratings in Norwegian, 0.40 and 1.17, suggest both lower and higher thresholds of acceptability in L1 Norwegian than L2 English.

The experimental group participants are relatively young compared to participants in previous research on Norwegian island constraints, and the age of the participants may have influenced the results. Firstly, the acceptability judgment tests might have been too challenging. This would align with suggestions of high processing-demands as the reason for rejection of island-violating sentences – they are too difficult to parse (K. R. Christensen et al., 2013). Secondly, since the participants are relatively young and the island-violating sentences are relatively rare in day-to-day language, there is a possibility that the participants have little experience with such structures. A study by Dabrowksa (1997, as cited in Street & Dabrowska, 2010) suggests that some complex structures are subject to variation even between L1 speakers. The study found strong correlations between higher levels of education and increased understanding of complex structures. In line with such findings, I speculate that the island structures may be relatively unfamiliar for the experimental group, and that the structures will become increasingly acceptable as the participants get more experience with more complex (written) language. Thus, it could be that the complexity of the sentence in itself makes it harder to parse and correspondingly lowers its rating. However, neither processing-demands nor the lack of exposure to the structures would explain why the English items were accepted; one would assume that sentence processing is more demanding in an L2.

Finally, I have to consider the possibility of errors in the test items leading to unacceptability, e.g., spelling mistakes, strange vocabulary, syntactic errors etc. While many of the sentences arguably sound strange when presented without a context, an inspection of the sentences did not reveal any mistakes that would account for the group's collective rejection of the island-violating sentences. Furthermore, and perhaps

even more convincing, a comparison of the experimental group's mean scores in both languages reveals that the embedded question and relative clause island-violating sentences were rated (marginally) better in Norwegian than in English, which further minimizes the chance of errors in the items being the reason for unacceptability.

Thus, several causes seem to partially account for the unexpected results. However, the fact that the mean z-scored ratings of the island violating sentences were higher for the Norwegian than for English items presents another question; whether the Norwegian ratings really reflect rejection of the island-violating sentences in the experimental group participants' L1.

Considering the higher mean z-scored ratings of the Norwegian embedded question and relative clause island-violating sentences compared to the corresponding items in English, one could question whether the statistically significant interaction effects actually signify rejection (see e.g., Sprouse et al. (2016), Kush et al. (2018) or Bondevik (2018) for an in-depth analysis of the implications of interaction effects). In addition, inspection of maximum, minimum and median scores revealed that the vast majority of participants rated at least one of three items in the ISLAND | LONG condition as acceptable, i.e., above zero. Considering these results, it seems strange that the group analysis revealed island effects. However, the reason for the relatively high DD-scores become clear when inspecting the other conditions; the experimental group rated all conditions higher in Norwegian than they did in English, which explains why a super-additive interaction effect can be present when the mean z-scored ratings of the island-violating sentences are higher in Norwegian compared to English. Ultimately, it is reasonable to question whether the experimental group participants really reject the ISLAND | LONG condition in Norwegian, considering that the mean z-scored rating is higher for the Norwegian island-violating sentences than for the corresponding English items.

As established previously, the experimental group's ratings revealed variation both between and within participants. A possible explanation for the differences between the participants is that the sample actually contains two groups of individuals, one that accepts and one that rejects island constraint violations. As explained in chapter 4, the distribution of ratings and DD-scores contradicts this argument. The intra-speaker variation, on the other hand, may be attributed to the age of the experimental group participants. As argued, their lack of experience with such structures and the items' complexity may lead to difficulty in imagining an appropriate context for the sentences. Ultimately, the variation suggests that the experimental group participants do not agree, neither with each other nor with themselves. This may question whether the results actually represent rejection of these structures in the participants' L1 grammar.

Finally, one aspect of the analysis could question the validity of the statistically significant interaction effects of the Norwegian items; comparing the DD-scores of both L1 experiments reveals considerably lower DD-scores for the experimental group's judgments of the Norwegian items compared to the control group's judgments of the English items. This could align with the previously mentioned claim of Featherston (2005) that all languages display island effects, but that the size of the effect varies. However, it could also illustrate the difference between an actual and an 'exaggerated' island effect. Firstly, Kush et al. (2019) suggest that "although there is, in principle, no quantitative threshold for defining a 'true' island effect, prior studies using the factorial design have found that DD scores for island effects typically fall within the range of 0.75–1.25" (p. 401). Thus, even though all DD-scores above 0.25 signify rejection of island constraint

violations, a strong island effect would be hypothesized to display a DD-score of approximately 0.75-1.25. All the Norwegian DD-scores are below 0.75, with the subject island as the closest at 0.70. In contrast, the other L1 judgments, the control group's English DD-scores are all between 0.75 and 1.25. Secondly, for the embedded question and the relative clause, the control group exhibits little variation and strong island effects, whereas the experimental group exhibits great variation and smaller island effects. In comparison, the subject island's DD-scores, for which the suggested universal treatment would hypothesize similar DD-scores, closely align; the experimental group's DD-score of the Norwegian subject island is 0.70, while the control group's DD-score of the English subject island is 0.83. Thus, the similarity of the subject island and the dissimilarity of the embedded question and relative clause island in the two L1 experiments further support the claim that the interaction effects of the embedded question and the relative clause islands may display an exaggerated island effect. Furthermore, looking at the distribution of z-scored ratings (Chapter 4.4, Figure 8) indicates that there are differences between the control group's L1 English ratings and experimental group's L1 Norwegian ratings, and that the Norwegian ratings align more closely with the experimental group's L2 English ratings.

In conclusion, it is difficult to uncover why the ratings of the Norwegian items did not align with the expected results, and further whether the ratings display an exaggerated island effect or whether the experimental group's L1 grammar reject violations of the island constraints.[17] Despite no clear findings, I argue that the ratings indicate exaggerated interaction effects and that Norwegian allows A'-movement out of syntactic islands, at least to some degree, based on previous research on island constraints in Norwegian.

5.2 THE ROLE OF TRANSFER IN SLA

Returning to the overarching aim of the thesis, to contribute to the answer of the logical problem of language acquisition, necessitates a discussion on the role of transfer in SLA. The following sub-sections explore whether there is any evidence of transfer in the experimental group's ratings of the English items and whether the three experiments and their results contribute to our understanding of transfer and provide evidence in favor of a specific model of SLA.

5.2.1 Transfer in SLA

As discussed in chapter 2, the standard view of transfer entails that the parametric settings of the L1 constitute the parametric settings of the L2 grammar, especially relatively early in the acquisition process. Considering such an understanding of transfer, this thesis attempted to either support the models claiming L1 influence by finding

[17] One possible reason can explain the experimental group's judgments of the Norwegian *and* the English items. It may be that the embedded question and the relative clause are syntactic islands in Norwegian, which explains the rejection of the island-violating items, but that island constraints are not subject to transfer, which means that the L2 would not display this island-sensitivity. However, this contradicts great amounts of previous research, and therefore I find it very unlikely. For this reason, I do not pursue this argument any further.

evidence of no island-sensitivity for the embedded question and relative clause island in the experimental group participants' L2 grammar, or to give further evidence to models claiming restricted or no transfer at all, by providing data on island-sensitivity in the L2 grammar. Thus, a discussion on the role of transfer in SLA should be relatively straight-forward; either the syntax of the L1 transfers or it does not transfer. However, the fact that the judgments of the Norwegian items did not align neither with the expected results nor the English ratings complicates the discussion; it seems strange to discuss the transfer of syntax and parametric settings that are not present in the L1. Despite the unexpected results and lack of island-insensitivity, this sub-section argues for transfer in the experimental group's participants L2 grammar on three accounts; (i) previous research on Norwegian islands, (ii) that the L2 English ratings have to come from somewhere, and (iii) the high relative ratings of the island-violating items in Norwegian and the inconsistency in judgments.

As already mentioned, simply comparing the results of the experimental group's ratings of the English and Norwegian items does not seem to illustrate transfer of syntax. The experimental group's ratings displayed similar island effects for the Norwegian items as the control group's ratings of the English items, i.e., statistically significant interaction effects for all islands, but the experimental group differed in their ratings of the English items, where the embedded question and relative clause islands did not display island effects. It is difficult to claim that there is evidence of transfer if the (apparent) island constraints are identical in the NL and the TL, since statistically significant interaction effects could reflect both L1 transfer, access to UG (if the constraints are in fact universal), or simply that the relevant constraints have been acquired in the L2. Assuming that the L2 grammar is not influenced by the L1 (and, for the sake of this argument, disregarding the idea of unreliable L1 Norwegian ratings), this entails two possible outcomes for the acquisition and attested grammar of the L2: 1. Access to UG in SLA and consequently statistically significant interactions for all islands, cf. FA/NT and IHS (Epstein et al., 1996; Platzack, 1996), or 2. No access and no transfer at all, which should entail no statistically significant interaction effects for either island unless their ungrammaticality has somehow been otherwise acquired.. However, neither of the outcomes align with the results of the experimental group's judgments of the English items.

If we look at the results of the experimental group's ratings of the English items in light of previous research on Norwegian speakers' treatment of embedded question, relative clause and subject islands, i.e., that extraction is accepted out of the two former and rejected out of the latter (K. R. Christensen et al., 2013; Kush et al., 2018, 2019; Maling & Zaenen, 1982; Taraldsen, 1982), there is arguably evidence of transfer of syntax, more specifically a lack of island constraints. The relatively low DD-scores of the embedded question and relative clause islands, 0.24 and 0.25 respectively, signify a lack of (or at least, reduced) sensitivity to these particular islands in the participants' L2 English. Moreover, the subject island's DD-score at 0.36 and the statistically significant interaction effect signify a rejection of A'-movement out of such environments. The latter may also reflect the universality of these islands, entailing that they are rejected regardless of L1 influence. This interpretation of the findings aligns with findings in Kush and Dahl (2020), where the participants transferred acceptance of filler-gap dependencies inside island constructions, strengthening the plausibility of such an interpretation.

Furthermore, it would be strange that the participants behave as expected in English, i.e., as though their L2 grammar was influenced by the L1, if there was no transfer. As explained in section 2.3, the research of Martohardjono (1993) and Kim et al. (2015) has suggested that L1 Spanish and L1 Italian speakers reject the island constraint violations in their L2 that are ungrammatical in their L1. If the experimental group participants of the present experiment had similar island constraints in their L1 Norwegian as the control group does in their L1 English, this would question why the experimental group did not reject the embedded question and relative clause islands in their L2 English. This further strengthens the claim that the ratings of the Norwegian items do not accurately reflect the L1 grammar of the experimental group *and* that the L1 influences the acquisition of an L2.

Additionally, reviewing the distribution of the z-scored ratings in the three experiments (see Figure 8), the control group's ratings of English (L1), the experimental group's ratings of English (L2) and the experimental group's ratings of Norwegian (L1), reveals great variation in the experimental group's z-scored ratings, where a considerable number of scores is above the middle ground of the z-score scale both for the Norwegian and English items. In contrast, the control group's ratings of the English items display little variation and few scores above zero. The fact that the experimental group's L1 and L2 ratings are more similarly distributed than the two groups' ratings of their respective L1s, could signify that, despite different DD-scores, the experimental group's underlying L1 and L2 grammars are similar, i.e., transfer. Thus, since (i) the results align with the expected ratings *if* island constraints did in fact transfer from the hypothesized L1 grammar which has been attested in previous research, (ii) previous research has found that L2 learners' transfer the island constraints of their L1, and (iii) the distribution of z-scores was more similar between the L1 and L2 of the experimental group than between the two groups' L1 ratings, I suggest, despite the experiment partially failing to provide direct evidence of this, that the island constraints, or lack thereof, are transferred to the L2.

An aspect of the results which contradicts my claim of transfer is the non-existing correlation between the experimental group's Norwegian and English z-scored mean ratings and DD-scores. The standard understanding of cross-linguistic influence would entail that the z-scored mean rating/DD-score in L1 Norwegian would predict a similar score in L2 English and vice versa. The data collected in the present experiments showed no such correlations (see Figures 11 and 12). I suspect that the lack of correlation could be due to what I suggest to be unclear data on Norwegian islands which do not reflect the underlying grammar, but the Norwegian data in themselves do not support this claim.

Finally, the CP-STACK and NO CP-STACK fillers could provide evidence against cross-linguistic transfer. The mean z-scored ratings of the Norwegian CP-STACK items were positive, 0.299, which, despite being below the FILL-GOOD level, signifies acceptance. The same group of participants rated the corresponding English items considerably lower, -0.419. The experimental group participants seem to be aware of the unacceptability of cp-stacking in English (this ungrammaticality was also attested in the control group's ratings). However, I would like to briefly consider the idea that the CP-STACK condition might have been transferred from the L1 to the L2 in the initial state of the acquisition of English, but that the experimental group participants have rearranged their L2 grammar in this respect, although this cannot be established based on the ratings. Firstly, the CP-STACK/NO CP-STACK items consist of sentences which the experimental group participants

would have been exposed to through their interactions with both languages. However, in English, the input would only consist of sentences similar to the NO CP-STACK items, due to the ungrammaticality of CP-stacking. As Kush and Dahl (2020) suggest, L2 learners may be able to restructure a superset L2 grammar. Thus, it may be that the experimental group participants have taken the absence of CP-stacking and other differences in the complementizer domain as indirect negative and positive evidence for rejecting CP-stacking in English[18]. The fact that L2 learners have been argued to not make use of indirect negative evidence could potentially weaken this argument (Mazurkewich & White, 1984; Pinker, 1989). Secondly, the experimental group rated the English CP-STACK items considerably lower than the control group did. One could speculate whether the experimental group participants have *explicit* knowledge of the CP-stacking's ungrammaticality in English, entailing that they make use of learned rules rather than intuitions in their judgments, and therefore judge the items more harshly. Finally, it should be emphasized that these are all speculations, and the ratings in themselves provide evidence against transfer.[19]

In conclusion, it is difficult to accurately uncover the role of cross-linguistic influence due to the experimental group's unexpected ratings of the Norwegian items (despite the suspicion that these ratings do not reflect the underlying L1 grammar of the participants). However, it seems strange that the experimental group collectively accepted something in their L2 English which the control group ratings confirmed to be unacceptable in English, without influence from the L1 – these results align so closely with the expected pattern that it seems that they cannot be due to pure chance. Furthermore, since previous research has shown that L2 speakers reject those island violations in the L2 which are ungrammatical in their L1, it would be strange that the experimental group participants did not reject the embedded question and relative clause island-violating items, if they were in fact ungrammatical in L1 Norwegian, as the results of my experiment seem to suggest. Thus, I argue that the experimental group's acceptance of non-target forms in the L2 grammar is a result of transfer. However, it must be emphasized that since the Norwegian data did not show insensitivity to filler-gap dependencies inside embedded question and relative clause islands, the conclusion of transfer is based partly on arguments that lie outside the actual results and should be acknowledged with caution.

5.2.2 The Logical Problem of Language Acquisition and SLA

Returning to the overall aim of the hypothesis, to further answer The Logical Problem of Language Acquisition by providing evidence for a model of SLA, the results of the thesis experiment do not offer a definite answer. Since the experimental group's ratings of the Norwegian items did not transpire as expected, I cannot conclude on any of the models of SLA, since none of them fit the apparent pattern; transfer of island constraints into the L2 that are not present in the L1.

[18] See Kush and Dahl (2020) for an especially interesting argument in favor of indirect positive evidence and parametric variation based on the Norwegian and English complementizer domain.

[19] I return to the CP-STACK items in section 5.3, where the correlation between high ratings in this condition and overall acceptance of island constraint violations are briefly discussed.

However, I argue that (i) since previous research has illustrated that L2 speakers are sensitive to island constraints, and (ii) that it would be strange to have a non-target superset grammar in the L2 that hasn't been found in previous L2 research without the same grammar being present in the L1 grammar, the results suggest transfer of a superset grammar, despite the judgments of the Norwegian items preventing a definite conclusion. Furthermore, the results support the claims that L2 learners are not conservative in the same way as L1 learners when developing the TL grammar. The experimental group's L2 grammar displays acceptance of filler-gap dependencies inside both embedded question and relative clause islands, parameter settings which cannot be altered purely based on positive evidence.

The presence of transfer suggest rejecting models such as the IHS (Platzack, 1996), the FA/NT model (Flynn & Martohardjono, 1994, as cited in White, 2003) and the MTH (Vainikka & Young-Scholten, 1994, 1996). The presence of L1 syntax in the L2 grammar, i.e., transfer, could be taken to further provide support for Full Transfer models, for example the FT/FA (Schwartz & Sprouse, 1994, 1996). This model hypothesizes both transfer and UG to influence the acquisition of an L2.

5.3 ISLANDS AND UNIVERSALITY

In addition to answering learnability problems, syntactic islands were chosen as a way to investigate UG and the claimed universality on its own. As described in great detail in chapter 2, the island constraints were proposed to be part of the innate constraints which constitute UG, entailing no cross-linguistic variation. Moreover, the Subjacency Condition was assumed to be innate (Chomsky, 1973).

First of all, the control group's embedded question and relative clause island DD-scores support the claim that islands vary in their opacity (Polinsky et al., 2011), and that the embedded question island is a weak island in English. It is also interesting to note that out of all three islands in the control group's ratings, the relative clause island displays the highest DD-score. It is not unexpected that the DD-score is high, but it is interesting that it has a higher DD-score than the subject island, which works as a reference for a strong island effect in both languages. Even more so, the subject island items in the current experiment violate two constraints, which should make the sentences even more unacceptable.

A comparison of the same DD-scores in the experimental group's ratings of the Norwegian items also reveal differences between the islands. However, contradicting the claim of embedded questions as weak islands, this island type received a higher DD-score than the relative clause islands. Furthermore, and perhaps most interestingly, this may suggest a cross-linguistic difference, since the relative clause island had the highest DD-score in the control group's ratings of the English items.

These cross-linguistic differences become increasingly clear when comparing the DD-scores pr. island pr. language. Focusing solely on the L1 ratings (disregarding the possibility of the Norwegian ratings being inaccurate), the two groups reject the subject island at similar DD-scores; 0.83 and 0.70, for the control and experimental group, respectively. There is a slightly bigger difference in the treatment of the embedded question island, where the control group displays a DD-score of 0.77 and the experimental group displays a DD-score of 0.58. Finally, the relative clause island, despite the island-violating sentences being rejected by both groups, received a much

higher DD-score by the control group than the experimental group; 0.90 vs. 0.39. This suggests different treatment of the islands in the two languages, and especially for the relative clause island. I do not pursue the differences between the relative clauses any further, but these results in light of previous inconclusive findings on relative clauses (Kush et al., 2018, 2019) suggest that more research on these constructions is warranted.

If the claims in previous sections, that the control group rejects and the experimental group accepts A'-movement out of embedded question and relative clause islands in their respective L1s, are correct, this suggests that islands are treated differently by L1 Norwegian and L1 English speakers. Considering the claims of universality, differences in treatment of island constraints could challenge these universal claims. However, the proposal of multiple CPs in Mainland Scandinavian languages (including Norwegian) by Nyvad, Christensen, and Vikner (2015) offers a way of reconciling the findings of cross-linguistic differences and universality. As briefly explained, the filler items containing stacked CPs were accepted in Norwegian. This was expected based on the suggestion that Norwegian allows stacking of multiple CPs in each clause and entails a reanalysis of the sentence in (27a) to (27b):

(27) a. *[$_{CP}$ [$_{DP}$ Hvilke billetter$_i$] [$_{C'}$ husker$_j$ [$_{TP}$ *BN* [$_{DP}$ Per] [$_{T'}$ [$_{VP}$ [$_{V'}$ [$_{V}$ t$_j$]] [$_{CP}$ [$_{DP}$ hvem$_k$] [$_{C'}$ [$_{C^0}$ som] [$_{TP}$ *BN* t$_k$ [$_{T'}$ [$_{VP}$ [$_{V'}$ kjøpte [$_{DP}$ t$_i$]]]]]]]]]]]

b. [$_{CP}$ [$_{DP}$ Hvilke billetter$_i$] [$_{C'}$ husker$_j$ [$_{TP}$ *BN* [$_{DP}$ Per] [$_{T'}$ [$_{VP}$ [$_{V'}$ [$_{V}$ t$_j$]] [$_{CP}$ [$_{DP}$hvem$_k$] [$_{c'}$ [$_{cP}$ t$_i$ [$_{C'}$ [$_{C^0}$ som] [$_{TP}$ *BN* t$_k$ [$_{T'}$ [$_{VP}$ [$_{V'}$ kjøpte [$_{DP}$ t$_i$]]]]]]]]]]]

The analysis in (27a) suggests that the A'-movement violates the Subjacency condition; the wh-phrase *Hvilke billetter* crosses both SpecTPs, and accordingly two bounding nodes, in one movement operation. However, the analysis in (27b) illustrates how stacking of multiple CPs in Norwegian enables extraction that only crosses one bounding node. The wh-phrase *Hvilke billetter* is able to use the intermediate landing site in the embedded clause's cP, crossing only one bounding node for each movement operation in the cyclic-successive movement suggested by Chomsky (1973). It should be noted that there is no clear correlation between high mean z-scored ratings of Norwegian CP-STACK items and low Norwegian DD-scores, i.e., acceptance of island constraint violations. These should, in theory, be connected, since cp-stacking enables extraction from syntactic islands. However, I speculate, once again, that the possibly unreliable Norwegian data are (at least) partially responsible for this lack of correlation. The clear rejection of the CP-STACK items in English entails that such CP-stacking is not possible in English, further entailing that the above reanalysis is not possible in English.

Thus, at face value, there are differences in the treatment of islands. However, the differences do not challenge the Subjacency condition and the island constraints, as the different complementizer domains in Norwegian and English reconcile the differences with the universality proposed in UG.

Ultimately, the results of the current experiment illustrate the complexity of island constraints and the difficulties in research on these syntactical constructions. This thesis is written from a syntactical perspective, but currently, there are several different claims on the underlying causes of island effects, including non-syntactical ones. In this view,

the experiment's unexpected results and failure at identifying island effects in Norwegian may in fact be one of the more interesting findings: since it has been suggested in previous research that embedded questions (and possibly relative clauses) are not treated as islands in Norwegian and other Mainland Scandinavian languages combined with previous inconclusive findings on relative clauses (e.g., Kush et al., 2018, 2019), the results of the current experiment imply that there are other non-syntactic factors which cause the apparent island effects. This further implies that the syntactic and universal account of islands may not be able to explain all real-world language. As I claim in section 5.1.1, one of the possible explanations for the ratings may be semantical requirements, aligning with the suggestions of Maling and Zaenen (1982) and Erteschik-Shir (1973). Thus, the results of my experiments illustrate that more research is warranted in order to disentangle these issues.

6 CONCLUSION

6.1 CONCLUSIONS

The overarching aim of this thesis was to explore the role of the L1 in the acquisition of an L2, as a contribution to the learnability problems set forth in the Logical Problem of Language Acquisition and the Poverty of the Stimulus argument (e.g., Chomsky, 1965; White, 2003). This adds to a large body on research on similar topics, but the current thesis diverges from these by investigating the possible transfer of island constraints. Islands are syntactic constructions which work as barriers for movement, as they prevent the creation of filler-gap dependencies (e.g., Chomsky, 1973; Ross, 1967). Previous research has suggested that the filler-gap dependencies inside islands which are rejected by L1 English speakers, are, at least to some degree, accepted by L1 Norwegian speakers (e.g., K. R. Christensen et al., 2013; K. R. Christensen & Nyvad, 2014; Kush et al., 2018, 2019; Maling & Zaenen, 1982). According to the standard view of transfer, evidence of acceptance of island constraint violations in L1 Norwegians' L2 English grammar would suggest L1 influence on the acquisition of an L2. Following the current norm of research on island constraints (e.g., Kush & Dahl, 2020; Kush et al., 2018, 2019; Sprouse, 2007; Sprouse et al., 2016), acceptability judgment tests with a 2x2 factorial design were used to explore both the L1 and L2 grammar of 75 L1 Norwegian L2 English speakers and the English L1 grammar of a control group of 31 native English speakers. The experiment focused on three syntactic islands; embedded question, relative clause and subject islands.

The ratings of the control group aligned with previous research; the L1 English speakers rejected violations of all three islands. The experimental groups' ratings of the English items also aligned with the expected results; they rejected violation of the subject island and accepted A'-movement out of embedded questions and relative clauses, which entails that the two latter constructions are not treated as islands in their L2 grammar. Thus, the ratings of the English items alone suggest both cross-linguistic differences *and* transfer of island constraints from the L1. However, contrary to previous research and the judgments of the English items, the experimental group's ratings of the Norwegian items revealed rejection of filler-gap dependencies inside all three islands. The unexpected results posed the question of how there could be transfer of island-insensitivity when the L1 grammar did not display this insensitivity. Despite further enquiries, I was not able to discover whether the ratings were influenced by non-syntactic factors or whether they represented the L1 grammar of the participants.

In spite of the curious ratings of the Norwegian items, I argue that the theoretical background, previous research (K. R. Christensen et al., 2013; K. R. Christensen & Nyvad, 2014; Kush et al., 2018, 2019; Maling & Zaenen, 1982; Taraldsen, 1982; Åfarli, 1997; Åfarli & Eide, 2003), and the non-target like acceptance of island constraint violations in the L2 which coincide with the expected outcome, suggest that the experimental group's ratings of the Norwegian items do not reflect their underlying grammar. Thus, I find the experimental group's ratings to suggest, at least to some degree, L1 influence on the L2 grammar. Accordingly, the results of the thesis

experiment align with the FT/FA-model (Schwartz & Sprouse, 1994, 1996). This entails that SLA is influenced and constrained by both crosslinguistic-influence and universal parametric variation.

In addition to questions related to learnability, a secondary aim of the thesis was to uncover whether the universal account of island constraints is appropriate given cross-linguistic differences. Considering that the island phenomenon is suggested to be part of UG and constrained by universal conditions and constraints, the suggested differences between Norwegian and English could pose a problem for this universality. As explained, Nyvad et al. (2015) suggest that the Mainland Scandinavian languages' acceptance of island constraint violations is due to CP-stacking; Norwegian syntax allows for several CPs in an extended complementizer domain, allowing long-distance extraction without violating the Subjacency Condition. The results of the acceptability judgment tests supported this proposal. Thus, even though the experiments partially failed to illustrate that A'-movement out of island environments is accepted in Norwegian, they did illustrate *why* such movement could be acceptable. There was no clear correlation between acceptance of Norwegian CP-STACK items and low DD-scores, but this could be due to the suggested unreliable data on the experimental group's Norwegian L1 grammar. Finally, the possibility of CP-stacking would also account for why filler-gap dependencies inside the subject phrase is unacceptable in Norwegian – the ungrammaticality of this island is not due to Subjacency.

6.2 LIMITATIONS

First, there is one very clear limitation to this study; it failed to replicate the results of previous research for the Norwegian items. In addition, it failed to uncover the reason for this, i.e., whether the results actually represent the L1 grammar or that there are other factors which led to the unexpected results. Further testing on native Norwegian speakers' L1 grammar would be needed to investigate this, but time limits and the scope of this thesis prevented me from doing so. The failed replication results further entail that parts of my discussion are based on assumptions, e.g., arguing for transfer based on previous research and the L2 grammar. Even though I find the argumentation to be likely, the actual results can possibly cast doubt over my conclusions.

Second, the variation in the experiential group's ratings, both between and within participants, can question whether the main findings, i.e., the presence or absence of island effects, actually represents this population/sample.

Finally, the research and its results would be more compelling if there was a bigger number of participants. Especially, that the confusion of the use of the code-schema ultimately reduced the number of participants applicable for cross-linguistic analysis is a drawback. In addition, the experimental group consisted on native Norwegian speakers from one region in Norway, which limits its generalizability.

6.3 FUTURE RESEARCH

The thesis leaves several questions unanswered. First and foremost, there is no doubt that further research on the status of islands in Norwegian is in order. Since I argue that the interaction effects in Norwegian could be partly based in semantics, it would be interesting to explore that aspect of the island constraints. This could also entail presenting the items in context in future experiments.

Moreover, I suspect that the young age of the experimental group participants might have influenced the ratings, and that they reject the sentences for reasons other than their underlying grammar. This suggests that research on the acquisition process of island constraints could be a logical next step. Questions such as when the island constraints are acquired, both in L1s and L2s; what types of evidence enable the acquisition; and whether it is possible to 'unlearn' non-target L2 grammar forms could be interesting to explore and would hopefully deepen the insight into language acquisition.

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APPENDIXES

Appendix A1: Consent form experimental group

Appendix A2: Consent form control group

Appendix B1: Background information experimental group

Appendix B2: Background information control group

Appendix C1: Instructions for English AJT, experimental group

Appendix C2: Instructions for Norwegian AJT, experimental group

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Appendix D: Coding-schema, experimental group

Appendix E1: Target items, English AJT

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Appendix H: Participants excluded from analysis

Appendix I: Correlations of mean z-scored ratings of Norwegian cp-stack items and Norwegian dd-scores by islands

Appendix J1: Control group's mean ratings of the English items, sorted by item number and conditions.

Appendix J2: Experimental group's mean ratings of the English items, sorted by item number and conditions.

Appendix J3: Experimental group's mean ratings of the Norwegian items, sorted by item number and conditions.

Appendix K: Histogram of z-scored ratings of Norwegian island-violating sentences by items.

APPENDIX A1: CONSENT FORM EXPERIMENTAL GROUP

Spørsmål om deltakelse i forskningsprosjekt om engelsk som andrespråk

Dette er en forespørsel om å delta i et forskningsprosjekt hvor formålet er å undersøke norskspråklige ungdommers og unge voksnes engelsk. For deg innebærer prosjektet vurdering en rekke setninger på engelsk og norsk. I tillegg bes du om å fylle ut et skjema med informasjon om blant annet din språklige bakgrunn. Forskningsprosjektet er en del av en masteroppgave ved NTNU.

Det er frivillig å delta
Det er helt frivillig å delta i prosjektet. Dersom du ønsker å delta, signerer du på baksiden av dette arket. Hvis du velger å delta, kan du når som helst trekke samtykket ditt uten å oppgi noen grunn. Dette kan du gjøre ved å ikke fullføre spørreskjemaet, ved å varsle underveis eller ved å varsle meg på *line_ba@hotmail.com* i ettertid. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke ønsker å delta eller velger å trekke deg.

Kinogavekort

Som en takk for eventuell deltakelse kan du være med i trekningen av gavekort på kinobilletter. Dette gjør du ved å oppgi mail-adressen din på siste side av spørreskjemaet. Mail-adressen vil ikke kunne knyttes til dine svar, da mail-adresser og svar på undersøkelse vil lagres og oppbevares separat, uten å kunne kobles sammen på noen måte. Mail vil ikke brukes til noe annet enn å kontakte vinnere.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi behandler opplysninger om deg basert på ditt samtykke. Bare jeg selv og mine to veiledere, førsteamanuensis Anne Dahl og førsteamanuensis Dave Kush ved NTNU, vil ha tilgang til dataene. Vi vil kun bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Alle opplysninger du gir fra deg blir anonymisert, og dine opplysninger og svar vil ikke kunne identifiseres i ettertid med mindre du selv oppgir din personlige deltakerkode.

Så lenge du kan identifiseres i datamaterialet, har du rett til: innsyn i hvilke personopplysninger som er registrert om deg, å få rettet personopplysninger om deg, få slettet personopplysninger om deg, få utlevert en kopi av dine personopplysninger (dataportabilitet), og å sende klage til personvernombudet ved NTNU eller Datatilsynet om behandlingen av dine personopplysninger.

Dersom du ønsker å benytte deg av noen av dine rettigheter eller har noen spørsmål angående prosjektet, ta kontakt med meg på *line_ba@hotmail.com*, veileder og førsteamanuensis Anne Dahl på *anne.j.dahl@ntnu.no*, veileder og førsteamanuensis Dave Kush på *dave.kush@ntntu.no*, eller NTNUs personvernombud, Thomas Helgesen, på *thomas.helgesen@ntnu.no*.

Tusen takk for din deltakelse!

Med vennlig hilsen
Line Bosnes-Askim
Mastergradsstudent

På oppdrag fra NTNU har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Samtykke til deltakelse i forskningsprosjekt om engelsk som andrespråk

Jeg har lest og forstått informasjonen jeg har fått om prosjektet og samtykker til å delta i forskningsprosjekt om engelsk som andrespråk. Jeg tillater at de prosjektansvarlige behandler opplysninger som beskrevet i informasjonsskrivet.

Dato: _____ / _____ – 2020

_____

Deltakers underskrift

APPENDIX A2: CONSENT FORM CONTROL GROUP

Invitation to participate in research project on

English as a second language

This is an invitation to participate in a research project on English as a second language. You will be asked to rate no more than 80 English sentences. Additionally, you will be asked to provide some background information about yourself, mostly focused on language.

The project is part of my MA thesis, which investigates how Norwegian speakers judge English sentences. For this, I need a control group of native English speakers, and I hope you would like to contribute.

Participation is voluntary

Participation is voluntary. By ticking the box at the bottom of the page you consent to participate. If you choose to participate, you can at any time withdraw your consent, by simply not completing the form. You cannot withdraw your consent after the form has been sent, as the data is anonymized and cannot be separated from other participants' responses.

Privacy Policy

The questionnaire is anonymous. The information you provide will be treated confidentially and will not be used for any other intention than this MA thesis. Only my two supervisors, Associate Professor Anne Dahl and Associate Professor Dave Kush, and I have access to the responses.

By law, I am obliged to inform you that as long as you can be identified in the data material, you have the right to: get access to the personal information about you, to correct any incorrect personal information, to delete your personal information, get a copy of your personal information and to send a complaint to NTNU's Data Protection Officer or the Norwegian Data Protection Authority regarding the treatment of your personal information.

The project is reported to and approved by NSD – Norwegian Centre for Research Data AS.

Amazon gift card

As a token of my appreciation, participants that complete the form can sign up to win a 250 NOK Amazon gift card. You enter the poll by providing your email at the end of the form. The email will not be connected to your response and cannot be used to identify you in the data material, nor will it be used for anything else than to contact the winner.

If you have any questions, please do not hesitate to contact me at *line_ba@hotmail.com*, Associate Professor Anne Dahl at *anne.j.dahl@ntnu.no*, Associate Professor Dave Kush at *dave.kush@ntnu.no,* or NTNUs Data Protection Officer, Thomas Helgesen, at *thomas.helgesen@ntnu.no*.

Thank you so much for your contribution.

Best,
Line Bosnes-Askim
MA-student

☐ I have read and understood the information above, and consent to participate in the research project.

APPENDIX B1: BACKGROUND INFORMATION EXPERIMENTAL GROUP

1. Kjønn
    - Mann
    - Kvinne
    - Ønsker ikke å oppgi

2. Alder: _____

3. Hva er ditt/dine morsmål?

    ☐ Norsk

    ☐ Engelsk

    ☐ Andre: _____

4. Har du en diagnose som kan ha påvirket språket eller språkutviklingen din (for eksempel dysleksi, autisme, hørselsvansker)? Hvis ja, oppgi diagnosen og forklar kort hvordan den påvirker deg.

5. Bruker/behersker du noen andre språk enn morsmålet ditt? Hvis ja, oppgi både språk og nivå (lav-middels-høy). Vurder også for norsk og engelsk.

Språk	*Nivå*
Norsk	_____
Engelsk	_____
_____	_____
_____	_____
_____	_____

6. Har du bodd utenfor Norge i en periode lengre enn 3 måneder? Hvis ja, spesifiser hvor du bodde, hvor gammel du var, og hvor lenge du bodde der.

7. Snakker du engelsk utenfor engelskundervisning på skolen? Hvis ja, med hvem og hvor ofte?

8. Hva var din forrige standpunktkarakter i engelsk?
   - ○ 1
   - ○ 2
   - ○ 3
   - ○ 4
   - ○ 5
   - ○ 6

9. Kryss av for de punktene som gjelder for deg *på engelsk*.
   - ☐ Jeg kan kjenne igjen og bruke enkle ord og setninger på engelsk.
   - ☐ Jeg forstår hovedinnholdet hvis det snakkes tydelig, og kan snakke og skrive sammenhengende om tema som er kjente for meg på engelsk.
   - ☐ Jeg forstår som regel det meste jeg hører og leser hvis det ikke er alt for vanskelig, og kan stort sett uttrykke det jeg vil muntlig og skriftlig på engelsk.
   - ☐ Jeg forstår uten særlige problemer det aller meste jeg hører og leser, og kan uttrykke meg flytende og presist på engelsk.

10. Hva bruker du engelsk til i hverdagen? Kryss av for det du gjør minst en gang i uken.

☐ Ser serier/Youtube etc. med engelsk tale

☐ Hører podkast med engelsk tale

☐ Hører musikk med engelsk tale

☐ Leser engelske nettsider/blogger osv. utenfor skolen

☐ Leser engelske bøker

☐ Spiller dataspill der jeg bruker engelsk enten skriftlig eller muntlig

APPENDIX B2: BACKGROUND INFORMATION CONTROL GROUP

1. Basic information
    a. Age: _____
    b. Gender: _____

2. What is your native language(s)? State all languages you started learning before the age of two.
    ☐ English
    ☐ Others:
    _____

3. Do you have any diagnoses that (could) affect your language/language learning? If yes, please specify which diagnosis and how you are affected.

4. Do you use any languages other than English? Is yes, please specify your competence and how often you use them.

Language	**Competence** basic – intermediate – advanced – fluent	**Frequency** daily – weekly – monthly – yearly

APPENDIX C1: INSTRUCTIONS FOR ENGLISH AJT, EXPERIMENTAL GROUP

I denne testen vil du bli presentert med 72 setninger på engelsk. Oppgaven din er bedømme hver enkelt setning basert på hvor velformulert og akseptabel den ville vært dersom du hørte en engelsktalende person bruke den. For å bedømme setningene bruker du en skala på 1-6, der 1 er totalt uakseptabelt (dårlig) og 6 er komplett akseptabelt (bra), og punktene imellom viser til varierende grad av akseptabilitet:

Totalt uakseptabelt *Komplett akseptabelt*

1 2 3 4 5 6

For eksempel:

Setning: *She went for a run as soon as she woke up.*

De fleste ville vurdert denne setningen som en velformulert setning som det ville vært naturlig at en engelsktalende person brukte. Det vil derfor være passende å gi den karakter på den øvre delen av skalaen, 5-6.

Setning*: Removing trees the man was but when had to take break broke down chainsaw.*

I motsetning til den forrige setningen, er denne setningen både vanskelig å forstå og unaturlig i en engelsktalende persons språk. Det vil derfor være logisk å gi den karakter på den nedre delen av skalaen, mest sannsynlig 1.

Setning*: Above the castle the dragon flies, his owner being protected by it.*

Selv om denne setningen kan forstås, høres den ikke helt naturlig ut og det er noe som rett og slett ikke helt stemmer med den. Det vil derfor være naturlig å gjøre bruk av de midtre punktene på skalaen, 3-4.

APPENDIX C2: INSTRUCTIONS FOR NORWEGIAN AJT, EXPERIMENTAL GROUP

I denne testen vil du bli presentert med 72 setninger på norsk. Oppgaven din er bedømme hver setning basert på hvor velformulert og akseptabelt det ville vært dersom du hørte en norsktalende person bruke den. For å bedømme setningene bruker du en skala på 1-6, der 1 er totalt uakseptabelt (dårlig) og 6 er komplett akseptabelt (bra), og punktene imellom viser til varierende grad av akseptabilitet:

Totalt uakseptabelt *Komplett akseptabelt*

1 2 3 4 5 6

For eksempel:

***Setning**: Vannet fra brønnen var rent og klart.*

De fleste ville vurdert denne setningen som en velformulert setning som det ville vært naturlig at en norsktalende person brukte. Det vil derfor være passende å gi den karakter på den øvre delen av skalaen, 5-6.

***Setning**: Strikket hun en i bursdagsgave til sønnen sin genser.*

I motsetning til den forrige setningen, er denne setningen både vanskelig å forstå og unaturlig i en norsktalende persons språk. Det vil derfor være logisk å gi den karakter på den nedre delen av skalaen, mest sannsynlig 1.

***Setning**: Endelig i år skal jeg holde på nyttårsforsettene jeg lovte meg selv.*

Selv om denne setningen kan forstås, høres den ikke helt naturlig ut og det er noe som rett og slett ikke helt stemmer med den. Det vil derfor være naturlig å gjøre bruk av de midtre punktene på skalaen, 3-4.

APPENDIX C3: INSTRUCTIONS FOR ENGLISH AJT, CONTROL GROUP

In this test you will be presented with 72 sentences in English. I ask that you rate each sentence in terms of how natural and acceptable it would sound coming from a native speaker of English. You will use a scale of 1-6, where 1 is completely unacceptable and 6 is perfectly acceptable, and the numbers in between signify the various degrees of acceptability:

Totally unacceptable *Perfectly acceptable*

1 2 3 4 5 6

For example:

***Sentence**: She went for a run as soon as she woke up.*

To most people, this sentence sounds well-formed and perfectly normal coming from a native speaker. Thus, making use of the topmost part of the scale, 5-6, would be fitting.

***Sentence**: Removing trees the man was but had to take break broke down chainsaw.*

In contrast, it could be said that this sentence would not sound natural coming from a native speaker, and it is hard to understand what it is trying to convey. Therefore, it would be logical to use the bottom-most range of the scale for this sentence, probably 1.

***Sentence**: Above the castle the dragon flies, his owner being protected by it.*

This sentence is, to most people, understandable, however it could be said that it does not sound very natural. Therefore, utilizing the middle of the scale, 3-4, could be appropriate.

APPENDIX D: CODING-SCHEMA, EXPERIMENTAL GROUP

(Dahl et al., 2019)

Du skal delta i prosjektet to ganger på to forskjellige dager, én gang på engelsk, og én gang på norsk. For at det skal være mulig å sammenligne svarene dine på den første og den andre undersøkelsen, må du lage en deltakerkode.

Koden lager du av:

- Den første bokstaven i navnet på den første skolen du går/gikk på
- De to første bokstavene i fornavnet til moren din
- Andre bokstav i fornavnet ditt
- De tre siste tallene i mobilnummeret ditt

Eksempel:

- Jeg går/gikk på **K**irkekretsen skole
- Mora mi heter **BJ**ørg.
- Jeg heter K**J**ersti.
- Mobilnummeret mitt er 12345**678**

Deltakerkoden blir da: KBJJ678

Min deltakerkode: _____

APPENDIX E1: TARGET ITEMS, ENGLISH AJT

Island	*Item*	*Sentence*
WH	1a.	Which friend remembers that John bought the movie-tickets?
WH	1b.	Which tickets do you remember that John bought?
WH	1c.	Which friend remembers who bought the movie-tickets?
WH	1d.	Which tickets do you remember who bought?
WH	2a.	Which friend told me that Emma had sold the cookies?
WH	2b.	Which cookies did Adam tell me that Emma had sold?
WH	2c.	Which friend told me who had sold the cookies?
WH	2d.	Which cookies did Adam tell me who had sold?
WH	3a.	Which producer sees that the singer loves the album?
WH	3b.	Which album does the producer see that the singer loves?
WH	3c.	Which producer sees who loves the album?
WH	3d.	Which album does the producer see who loves?
WH	4a.	Which girl forgot that Lily borrowed her pen?
WH	4b.	Which pen did Anne forget that Lily borrowed?
WH	4c.	Which girl forgot who borrowed her pen?
WH	4d.	Which pen did Anne forget who borrowed?
WH	5a.	Which teacher knew that all the students had failed the exam?
WH	5b.	Which exam did the teacher know that all the students had failed?
WH	5c.	Which teacher knew who had failed the exam?
WH	5d.	Which exam did the teacher know who had failed?
WH	6a.	Which professor knows that the author has written the books?
WH	6b.	Which books does the professor know that the author has written?
WH	6c.	Which professor knows who has written the books?
WH	6d.	Which books does the professor know who has written?
WH	7a.	Which magician knows that the girl ate the poisoned apple?
WH	7b.	Which fruit does the magician know that the girl ate?
WH	7c.	Which magician knows who ate the poisoned apple?
WH	7d.	Which fruit does the magician know who ate?
WH	8a.	Which girl sees that Andrew drives a car?
WH	8b.	Which car does the girl see that Andrew drives?
WH	8c.	Which girl sees who drives a car?
WH	8d.	Which car does the girl see who drives?
WH	9a.	Which police officer knows that James has stolen the money?
WH	9b.	Which money does the police officer know that James has stolen?
WH	9c.	Which police officer knows who has stolen the money?
WH	9d.	Which money does the police officer know who has stolen?
WH	10a.	Which friend forgot that Peter had already finished the essay?
WH	10b.	Which essay did my friend forget that Peter had already finished?
WH	10c.	Which friend forgot who had already finished the essay?
WH	10d.	Which essay did my friend forget who had already finished?
WH	11a.	Which audience saw that the girl finished a 100-meter race?

WH 11b. Which race did the audience see that the girl finished?
WH 11c. Which audience saw who finished a 100-meter race?
WH 11d. Which race did the audience see who finished?

WH 12a. Which guard saw that the burglar opened the vault door?
WH 12b. Which door did the security guard see that the burglar opened?
WH 12c. Which guard saw who open the vault door?
WH 12d. Which door did the security guard see who opened?

RC 13a. I remember that several men sold that kind of balloon on constitution day.
RC 13b. That's the kind of balloon that I remember that several men sold on constitution day.

RC 13c. There were several men who sold that kind of balloon on constitution day.
RC 13d. That's the kind of balloon that there were several men who sold on constitution day.

RC 14a. I know that several teachers work at that school.
RC 14b. That's the school that I know that several teachers work at.
RC 14c. There are several teachers who work at that school.
RC 14d. That's the school that there are several teachers who work at.

RC 15a. She thinks that many people speak English.
RC 15b. That's the language that she thinks that many people speak.
RC 15c. There are many people who speak English.
RC 15d. That's the language that there are many people who speak.

RC 16a. I'm sure that the radio show host recommended that song.
RC 16b. That's the song that I'm sure the radio show host recommended.
RC 16c. There was a radio show host who recommended that song.
RC 16d. That's the song that there was a radio show host who recommended.

RC 17a. She was sure that an intern recorded the conversation.
RC 17b. That's the conversation that she was sure that an intern recorded.
RC 17c. There was an intern who recorded the conversation.
RC 17d. That's the conversation that there was an intern who recorded.

RC 18a. I know that many freshmen have taken that class.
RC 18b. That's the class that I know that many freshmen have taken.
RC 18c. There are many freshmen who have taken that class.
RC 18d. That's the class that there are many freshmen who have taken.

RC 19a. I saw that several monkeys lived in the banana trees.
RC 19b. Those are the banana trees that I saw that several monkeys lived in.
RC 19c. There were several monkeys which lived in the banana trees.
RC 19d. Those are the banana trees that there were several monkeys which lived in.

RC 20a. The teacher suspects that only some students have done the homework.
RC 20b. That's the homework that the teacher suspects that only some students have done.
RC 20c. There are only some students that have done the homework.
RC 20d. That's the homework that there are only some students that have done.

RC 21a. He knows that only one chef has mastered the recipe.
RC 21b. That's the recipe that he knows that only one chef has mastered.
RC 21c. There is only one chef that has mastered the recipe.

RC 21d. That's the recipe that there is only one chef that has mastered.

RC 22a. I know that many actors refuse to work with that director.
RC 22b. That's the director that I know that many actors refuse to work with.
RC 22c. There are many actors who refuse to work with that director.
RC 22d. That's the director that there are many actors who refuse to work with.

RC 23a. I saw that several dogs had peed on the fence.
RC 23b. That's the fence that I saw that several dogs had peed on.
RC 23c. There were several dogs which had peed on the fence.
RC 23d. That's the fence that there were several dogs which had peed on.

RC 24a. The janitor said that several rats are living in our trashcans.
RC 24b. Those are the trashcans that the janitor said that several rats are living in.
RC 24c. There are several rats which are living in our trashcans.
RC 24d. Those are the trashcans that there are several rats which are living in.

SUB 25a. Which boy knows that the number isn't listed in the phone book?
SUB 25b. Which number does he know isn't listed in the phone book?
SUB 25c. Which boy knows that the number of the King isn't listed in the phone book?
SUB 25d. Which king does he know that the number of isn't listed in the phone book?
(Engdahl, 1982, p. 165)

SUB 26a. Which chef knows that the recipe was sitting on the counter?
SUB 26b. Which recipe does the chef know was sitting on the counter?
SUB 26c. Which chef knows that the recipe for tomato soup was sitting on the counter?
SUB 26d. Which soup does the chef know that the recipe for was sitting on the counter?
(Adapted version from Kush et al., 2018, p. 744)

SUB 27a. Which boy saw that the lion attacked the veterinarian?
SUB 27b. Which lion did Daniel see attacked the veterinarian?
SUB 27c. Which boy saw that the lion from the zoo attacked the veterinarian?
SUB 27d. Which zoo did Daniel see that the lion from attacked the veterinarian?

SUB 28a. Which person thought that the smoke bothered her?
SUB 28b. Which smoke did I think bothered her?
SUB 28c. Which person thought that the smoke from the cigarettes bothered her?
SUB 28d. Which cigarette did I think that the smoke from bothered her?
(Adapted version from Lohndal, 2014, p. 321)

SUB 29a. Which journalist thinks that the meeting destroyed the political union?
SUB 29b. Which meeting does the journalist think destroyed the political union?
SUB 29c. Which journalist thinks that the meeting with the millionaire destroyed the political union?
SUB 29d. Which millionaire does the journalist think that the meeting with destroyed the political union?

SUB 30a. Which boy knows that the picture is displayed on a shelf?
SUB 30b. Which picture does John know is displayed on a shelf?
SUB 30c. Which boy knows that the picture of his family is displayed on a shelf?
SUB 30d. Which family does John know that the picture of is displayed on a shelf?

SUB 31a. Which painter said that a portrait is displayed in the museum?

SUB 31b. Which portrait did the painter say is displayed in the museum?
SUB 31c. Which painter said that a portrait of the Queen is displayed in the museum?
SUB 31d. Which queen did the painter say that a portrait of is displayed the museum?

SUB 32a. Which friend told me that the possibility wasn't even considered?
SUB 32b. Which possibility did my best friend tell me wasn't even considered?
SUB 32c. Which friend told me that the possibility of a loss wasn't even considered?
SUB 32d. Which loss did my best friend tell me that the possibility of wasn't even considered?

SUB 33a. Which judge heard that the suspect bribed the jury?
SUB 33b. Which suspect did the judge hear bribed the jury?
SUB 33c. Which judge heard that the suspect of the robbery bribed the jury
SUB 33d. Which robbery did the judge hear that the suspect of bribed the jury?

SUB 34a. Which teacher saw that the girl scared me?
SUB 34b. Which girl did my teacher see scared me?
SUB 34c. Which teacher saw that the girl from my school scared me?
SUB 34d. Which school did my teacher see that the girl from scared me?

SUB 35a. Which editor knows that a picture is in the newspaper?
SUB 35b. Which picture does the editor know is in the newspaper?
SUB 35c. Which editor knows that a picture of the students is in the newspaper?
SUB 35d. Which students does the editor know that a picture of is in the newspaper?

SUB 36a. Which boy said that the presents were lying under the tree?
SUB 36b. Which presents did he say were lying under the tree?
SUB 36c. Which boy said that the presents for my sister were lying under the tree?
SUB 36d. Which girl did he say that the presents for were lying under the tree?

APPENDIX E2: TARGET ITEMS, NORWEGIAN AJT

Island	*Item*	*Sentence*
WH	1a.	Hvilken venn husker at Per kjøpte billettene til konserten?
WH	1b.	Hvilke billetter husker han at Per kjøpte?
WH	1c.	Hvilken venn husker hvem som kjøpte billettene til konserten?
WH	1d.	Hvilke billetter husker han hvem som kjøpte?
WH	2a.	Hvilken venninne fortalte meg at Knut hadde solgt bøkene?
WH	2b.	Hvilke bøker fortalte Sara meg at Knut hadde solgt?
WH	2c.	Hvilken venninne fortalte meg hvem som hadde solgt bøkene?
WH	2d.	Hvilke bøker fortalte Sara meg hvem som hadde solgt?
WH	3a.	Hvilken gutt så at Andrea elsket Sara?
WH	3b.	Hvilken jente så Jacob at Andrea elsket?
WH	3c.	Hvilken gutt så hvem som elsket Sara?
WH	3d.	Hvilken jente så Jacob hvem som elsket?
WH	4a.	Hvilken fotballspiller husker at Ivar hadde lånt skoene hans?
WH	4b.	Hvilke sko husker fotballspilleren at Ivar hadde lånt?
WH	4c.	Hvilken fotballspiller husker hvem som hadde lånt skoene hans?
WH	4d.	Hvilke sko husker fotballspilleren hvem som lånte?
WH	5a.	Hvilken lærer visste at jeg hadde strøket på prøven?
WH	5b.	Hvilken prøve visste læreren at jeg hadde strøket på?
WH	5c.	Hvilken lærer visste hvem som hadde strøket på prøven?
WH	5d.	Hvilken prøve visste læreren hvem som hadde strøket på?
WH	6a.	Hvilken lærer vet at forfatteren har skrevet boka?
WH	6b.	Hvilken bok vet læreren at forfatteren har skrevet?
WH	6c.	Hvilken lærer vet hvem som har skrevet boka?
WH	6d.	Hvilken bok vet læreren hvem som har skrevet?
WH	7a.	Hvilken jente vet at gartneren stakk seg på tornene på rosen?
WH	7b.	Hvilke torner vet hun at gartneren stakk seg på?
WH	7c.	Hvilken jente vet hvem som stakk seg på tornene på rosen?
WH	7d.	Hvilke torner vet hun hvem som stakk seg på?
WH	8a.	Hvilken gutt så at bestevennen hans kjørte mopeden?
WH	8b.	Hvilken moped så gutten at bestevennen hans kjørte?
WH	8c.	Hvilken gutt så hvem som kjørte mopeden?
WH	8d.	Hvilken moped så gutten hvem som kjørte?
WH	9a.	Hvilken etterforsker vet at kunstsamleren hadde stjålet maleriet?
WH	9b.	Hvilket maleri vet etterforskeren at kunstsamleren hadde stjålet?
WH	9c.	Hvilken etterforsker vet hvem som hadde stjålet maleriet?
WH	9d.	Hvilket maleri vet politiet hvem som hadde stjålet?
WH	10a.	Hvilken samboer glemte at jeg hadde vasket badet?
WH	10b.	Hvilket rom glemte samboeren min at jeg hadde vasket?
WH	10c.	Hvilken samboer glemte hvem som hadde vasket badet?
WH	10d.	Hvilket rom glemte samboeren min hvem som hadde vasket?
WH	11a.	Hvilket publikum så at skiløperen fullførte 5-mila?

WH	11b.	Hvilket renn så vi at skiløperen fullførte?
WH	11c.	Hvilket publikum så hvem som fullførte 5-mila?
WH	11d.	Hvilket renn så vi hvem som fullførte?
WH	12a.	Hvilken vekter ser at den butikkansatte åpner porten?
WH	12b.	Hvilken port ser vekteren at den butikkansatte åpner?
WH	12c.	Hvilken vekter ser hvem som åpner porten?
WH	12d.	Hvilken port ser vekteren hvem som åpner?
RC	13a.	Jeg husker at flere elever solgte bagetter i friminuttet.
RC	13b.	Det er bagettene som jeg husker at flere elever solgte i friminuttet.
RC	13c.	Det var flere elever som solgte bagetter i friminuttet.
RC	13d.	Det er bagettene som det var flere elever som solgte i friminuttet.
RC	14a.	Jeg vet at flere bibliotekarer leser krimbøker.
RC	14b.	Det er bøkene som jeg vet at flere bibliotekarer leser.
RC	14c.	Det er flere bibliotekarer som leser krimbøker.
RC	14d.	Det er bøkene som det er flere bibliotekarer som leser.
RC	15a.	Hun mener at få lærere snakker tegnspråk.
RC	15b.	Det er språket som hun mener at få lærere snakker.
RC	15c.	Det er få lærere som snakker tegnspråk.
RC	15d.	Det er språket som det er få lærere som snakker.
RC	16a.	Jeg var sikker på at en programleder irriterte Kine.
RC	16b.	Det er jenta som jeg var sikker på at en programleder irriterte.
RC	16c.	Det var en programleder som irriterte Kine.
RC	16d.	Det er jenta som det var en programleder som irriterte.
RC	17a.	Hun var sikker på at en lydmann tok opp podkasten.
RC	17b.	Det er podkasten som hun var sikker på at en lydmann tok opp.
RC	17c.	Det var en lydmann som tok opp podkasten.
RC	17d.	Det er podkasten som det var en lydmann som tok opp.
RC	18a.	Jeg vet at mange miljøbevisste mennesker kjøper el-bil.
RC	18b.	Det er bilen som jeg vet at mange miljøbevisste mennesker kjøper.
RC	18c.	Det er en mange miljøbevisste mennesker som kjøper el-bil.
RC	18d.	Det er bilen som det er mange miljøbevisste mennesker som kjøper.
RC	19a.	Jeg så at flere håndballspillere kastet ballen mellom seg.
RC	19b.	Det er ballen som jeg så at flere håndballspillere kastet mellom seg.
RC	19c.	Det var flere håndballspillere som kastet ballen mellom seg.
RC	19d.	Det er ballen som det var flere håndballspillere som kastet mellom seg.
RC	20a.	Læreren mistenkte at flere elever hadde gjort ferdig matteoppgavene.
RC	20b.	Det er matteoppgavene som læreren mistenkte at flere elever hadde gjort ferdig.
RC	20c.	Det var flere elever som hadde gjort ferdig matteoppgavene.
RC	20d.	Det er matteoppgavene som det var flere elever som hadde gjort ferdig.
RC	21a.	Jeg vet at en politiker har skrevet en bok.
RC	21b.	Det er boken som jeg vet at en politiker har skrevet.
RC	21c.	Det er en politiker som har skrevet en bok.
RC	21d.	Det er boken som det er en politiker som har skrevet.
RC	22a.	Hun visste at noen voksne jaktet på dyr.
RC	22b.	Det er dyrene som hun visste at noen voksne jaktet på.

RC 22c. Det er noen voksne som jakter på dyr.
RC 22d. Det er dyrene som det er noen voksne som jakter på.

RC 23a. Han så at flere håndverkere jobbet med huset.
RC 23b. Det er huset som han så at flere håndverkere jobbet med.
RC 23c. Det var flere håndverkere som jobbet med huset.
RC 23d. Det er huset som det var flere håndverkere som jobbet med.

RC 24a. Han tror at flere ekorn bor i treet.
RC 24b. Det er treet som han tror at flere ekorn bor i.
RC 24c. Det er flere ekorn som bor i treet.
RC 24d. Det er treet som det er flere ekorn som bor i.

SUB 25a. Hvilken turist vet at veien ikke er oppgitt på kartet?
SUB 25b. Hvilken vei vet turisten at ikke er oppgitt på kartet?
SUB 25c. Hvilken turist vet at veien til slottet ikke er oppgitt på kartet?
SUB 25d. Hvilket slott vet turisten at veien til ikke er oppgitt på kartet?

SUB 26a. Hvilken kokk vet at oppskriften sto på pakningen?
SUB 26b. Hvilken oppskrift vet kokken at sto på pakningen?
SUB 26c. Hvilken kokk vet at oppskriften på havregrøt sto på pakningen?
SUB 26d. Hvilken rett vet kokken at oppskriften på sto på pakningen?

SUB 27a. Hvilken gjest ser at haien angriper dyrepasseren?
SUB 27b. Hvilken hai ser gjesten at angriper dyrepasseren?
SUB 27c. Hvilken gjest ser at haien i akvariet angriper dyrepasseren?
SUB 27d. Hvilket akvarium ser gjesten at haien i angriper dyrepasseren?

SUB 28a. Hvilken venn tror at lydene plager henne?
SUB 28b. Hvilke lyder tror jeg at plager henne?
SUB 28c. Hvilken venn tror at lydene fra action-filmene plager henne?
SUB 28d. Hvilken film tror jeg at lydene fra plager henne?

SUB 29a. Hvilken venninne mente at møtet ødela hele dagen?
SUB 29b. Hvilket møte mente Berit at ødela hele dagen?
SUB 29c. Hvilken venninne mente at møtet med sjefen min ødela hele dagen?
SUB 29d. Hvilken sjef mente Berit at møtet med ødela hele dagen?

SUB 30a. Hvilke venner vet at plakaten henger på veggen?
SUB 30b. Hvilken plakat vet vennene hennes at henger på veggen?
SUB 30c. Hvilke venner vet at plakaten av boybandet henger på veggen?
SUB 30d. Hvilket band vet vennene hennes at plakaten av henger på veggen?

SUB 31a. Hvilken venn sa at et bilde henger på hytta?
SUB 31b. Hvilket bilde sa Knut at henger på hytta?
SUB 31c. Hvilken venn sa at et bilde av kongefamilien henger på hytta?
SUB 31d. Hvilken familie sa Knut at et bilde av henger på hytta?

SUB 32a. Hvilken student fortalte at prøven var vanskelig?
SUB 32b. Hvilken prøve fortalte studenten at var vanskelig?
SUB 32c. Hvilken student fortalte at prøven om andre verdenskrig var vanskelig?
SUB 32d. Hvilken krig fortalte studenten at prøven om var vanskelig?

SUB 33a. Hvilken servitør hørte at kaken smakte godt?
SUB 33b. Hvilken kake hørte servitøren at smakte godt?
SUB 33c. Hvilken servitør hørte at kaken med valnøtter smakte godt?
SUB 33d. Hvilke nøtter hørte hun at kaken med smakte godt?

SUB 34a. Hvilken assistent sa at eleven slo læreren?
SUB 34b. Hvilken elev sa assistenten at slo læreren?
SUB 34c. Hvilken assistent sa at eleven i matteklassen slo læreren?
SUB 34d. Hvilken klasse sa assistenten at eleven i slo læreren?

SUB 35a. Hvilken gutt vet at sekkene ligger på loftet?
SUB 35b. Hvilke sekker vet jeg at ligger på loftet?
SUB 35c. Hvilken gutt vet at sekkene med klær ligger på loftet?
SUB 35d. Hvilke klær vet jeg at sekkene med ligger på loftet?

SUB 36a. Hvilken jente sa at ferien var hyggelig?
SUB 36b. Hvilken ferie sa hun at var hyggelig?
SUB 36c. Hvilken jente sa at ferien i Australia var hyggelig?
SUB 36d. Hvilken verdensdel sa hun at ferien i var hyggelig?

APPENDIX F1: ENGLISH AJTS

AJT A

Number	Island/ judgment	Condition	Item	Sentence
1	Bad	FILL		That’s the curtains that her drew.
2	Good	FILL		The pop-quiz on American history was difficult.
3	RC	NI-L	20	That’s the homework that the teacher suspects that only some students have done.
4	Bad	FILL		It might have been a nice date if that he hadn’t been so boring.
5	Bad	FILL		That’s the teddy that I gave she for Christmas.
6	WH	I-L	6	Which books does the professor know who wrote?
7	Subject	I-L	30	Which family does John know that the picture of is displayed on a shelf?
8	Bad	FILL		She hate the new album that her favorite artist have released.
9	Subject	I-S	35	Which editor knows that a picture of the students is in the newspaper?
10	Bad	FILL		Since high school has she played the guitar.
11	Subject	NI-S	33	Which judge heard that the suspect bribed the jury?
12	Bad	FILL		We prefers vanilla to chocolate flavor.
13	Bad	FILL		That’s the ocean that him tried to reduce the amount of plastic in.
14	Subject	NI-L	28	Which smoke did I think bothered her?
15	Bad	FILL		That’s the job that us wanted.
16	Bad	FILL		After the viewing, bought he the house on the end of the street.
17	Bad	FILL		I owns that cottage.
18	Subject	NI-L	36	Which presents did he say were lying under the tree?
19	WH	I-S	7	Which magician knows who ate the poisoned apple?
20	Bad-CATCH	FILL		That's the desk that boyfriend her sat at.

21	Bad	FILL		This morning sent he an email to his friend in Asia.
22	Bad	FILL		At the farm petted Mary the horses.
23	RC	NI-S	17	She was sure that an intern recorded the conversation.
24	Good	FILL		I'm easy to find, because I never hide.
25	Bad	FILL		That's the stick that Peter accidently hit he in the head with.
26	Good	FILL		You went to Greece this summer.
27	Good	FILL		I wouldn't have gone home if it had been fun at the party.
28	Subject	I-S	27	Which boy saw that the lion from the zoo attacked the veterinarian?
29	RC	I-L	14	That's the school that there are several teachers who work at.
30	Bad	FILL		These are people those that she disliked.
31	Good	FILL		That's the mittens that he wears all through the winter.
32	WH	I-L	2	Which cookies did Adam tell me who had sold?
33	RC	I-S	15	There are many people who speak English.
34	WH	NI-S	9	Which police officer knows that James has stolen the money?
35	Subject	NI-S	29	Which journalist thinks that the meeting destroyed the political union?
36	RC	I-S	23	There were several dogs which had peed on the fence.
37	Good	FILL		She hopes for a very cold and snowy winter.
38	Bad	FILL		Before leaving for dinner, changed he his outfit.
39	Good	FILL		Sarah knows that Richard never drinks juice.
40	WH	NI-L	4	Which pen did Anne forget that Lily borrowed?
41	Bad	FILL		Claire knows that Andrea eats never cheese.
42	Bad	FILL		He love all the subjects at school.
43	RC	NI-L	24	Those are the trashcans that the janitor said that several rats are living in.
44	RC	NI-S	13	I remember that several men sold that kind of balloon on constitution day.

45	WH	NI-L	8	Which car does the girl see that Andrew drives?
46	Subject	I-L	34	Which school did my teacher see that the girl from scared me?
47	Bad-CATCH	FILL		That's man the that liked cheese.
48	Bad	FILL		He doesn't like to play football, because that he's not good at dribbling.
49	Good	FILL		That's the school that he attended for five years.
50	WH	I-L	10	Which essay did my friend forget who had already finished?
51	Good-CATCH	FILL		The science exam consists of 54 questions.
52	Bad	FILL		That's the theory that my teacher fried to teach I.
53	Bad	FILL		I likes the girls in my new class.
54	WH	NI-S	1	Which friend remembers that John bought the movie-tickets?
55	Bad	FILL		It were snowing outside her bedroom window.
56	RC	I-L	18	That's the class that there are many freshmen who have taken.
57	Good	FILL		That's the homework he finished as fast as he could.
58	RC	I-L	22	That's the director that there are many actors who refuse to work with.
59	Subject	I-L	26	Which soup does the chef know that the recipe for was sitting on the counter?
60	WH	I-S	11	Which audience saw who finished a 100-meter race?
61	Subject	NI-S	25	Which boy knows that the number isn't listed in the phone book?
62	Good-CATCH	FILL		That's the teacup that fell.
63	RC	I-S	19	There were several monkeys which lived in the banana trees.
64	RC	NI-L	16	That's the song that I'm sure the radio show host recommended.
65	Subject	I-S	31	Which painter said that a portrait of the Queen is displayed in the museum?
66	WH	NI-S	5	Which teacher knew that all the students had failed the exam?
67	WH	NI-L	12	Which door did the security guard see that the burglar opened?

68	RC	NI-S	21	He knows that only one chef has mastered the recipe.
69	Subject	NI-L	32	Which possibility did my best friend tell me wasn’t even considered?
70	WH	I-S	3	Which producer knows who loves the album?
71	Bad	FILL		After breakfast, left her boyfriend the hotel room.
72	Good	FILL		He finished the race in less than one hour.

AJT B

Number	Island/ judgment	Condition	Item	Sentence
1	Bad	FILL		I likes the girls in my new class.
2	Good	FILL		That’s the school that he attended for five years.
3	Subject	I-L	27	Which zoo did Daniel see that the lion from attacked the veterinarian?
4	WH	NI-L	5	Which exam did the teacher know that all the students had failed?
5	Good-CATCH	FILL		That's the teacup that fell.
6	Subject	I-S	32	Which friend told me that the possibility of a loss wasn’t even considered?
7	RC	NI-S	14	I know that several teachers work at that school.
8	RC	NI-S	18	I know that many freshmen have taken that class.
9	Bad	FILL		She hate the new album that her favorite artist have released.
10	Good	FILL		I’m easy to find, because I never hide.
11	Good	FILL		The pop-quiz on American history was difficult.
12	WH	I-S	4	Which girl forgot who borrowed her pen?
13	WH	I-L	7	Which fruit does the magician know who ate?
14	RC	I-S	20	There are only some students that have done the homework.
15	WH	NI-S	6	Which professor knows that the author wrote the books?

16	Good	FILL		That’s the mittens that he wears all through the winter.
17	Good	FILL		She hopes for a very cold and snowy winter.
18	RC	I-L	19	Those are the banana trees that there were several monkeys which lived in.
19	Subject	I-S	28	Which person thought that the smoke from the cigarettes bothered her?
20	Subject	NI-L	33	Which suspect did the judge hear bribed the jury?
21	Bad	FILL		Before leaving for dinner, changed he his outfit.
22	Bad	FILL		We prefers vanilla to chocolate flavor.
23	WH	I-S	12	Which guard saw who opened the vault door?
24	Bad	FILL		This morning sent he an email to his friend in Asia.
25	Subject	NI-L	25	Which number does he know isn’t listed in the phone book?
26	Subject	NI-L	29	Which meeting does the journalist think destroyed the political union?
27	WH	NI-S	2	Which friend told me that Emma had sold the cookies?
28	RC	NI-L	13	That’s the kind of balloon that I remember that several men sold on constitution day.
29	Bad	FILL		At the farm petted Mary the horses.
30	Bad	FILL		I owns that cottage.
31	RC	I-L	15	That's the language that there are many people who speak.
32	Bad	FILL		He love all the subjects at school.
33	WH	NI-L	9	Which money does the police officer know that James has stolen?
34	Subject	NI-S	34	Which teacher saw that the girl scared me?
35	Bad	FILL		These are people those that she disliked.
36	Bad	FILL		Since high school has she played the guitar.
37	WH	I-L	3	Which album does the producer know who loves?
38	Bad-CATCH	FILL		That's man the that liked cheese.
39	Subject	I-S	36	Which boy said that the presents for my sister were lying under the tree?

40	Good-CATCH	FILL		The science exam consists of 54 questions.
41	Subject	I-L	31	Which queen did the painter say that a portrait of is displayed the museum?
42	Good	FILL		I wouldn't have gone home if it had been fun at the party.
43	Bad	FILL		He doesn't like to play football, because that he's not good at dribbling.
44	Subject	NI-S	26	Which chef knows that the recipe was sitting on the counter?
45	Bad	FILL		It might have been a nice date if that he hadn't been so boring.
46	Bad	FILL		That's the job that us wanted.
47	RC	NI-L	17	That's the conversation that she was sure that an intern recorded.
48	Subject	I-L	35	Which students does the editor know that a picture of is in the newspaper?
49	Bad	FILL		That's the stick that Peter accidently hit he in the head with.
50	Bad	FILL		After breakfast, left her boyfriend the hotel room.
51	Good	FILL		He finished the race in less than one hour.
52	Bad	FILL		That's the ocean that him tried to reduce the amount of plastic in.
53	Bad	FILL		Claire knows that Andrea eats never cheese.
54	RC	NI-L	21	That's the recipe that he knows that only one chef has mastered.
55	RC	NI-S	22	I know that many actors refuse to work with that director.
56	Subject	NI-S	30	Which boy knows that the picture is displayed on a shelf?
57	Good	FILL		That's the homework he finished as fast as he could.
58	WH	NI-L	1	Which tickets do you remember that John bought?
59	Bad	FILL		That's the theory that my teacher fried to teach I.
60	Bad	FILL		It were snowing outside her bedroom window.
61	RC	I-L	23	That's the fence that there were several dogs which had peed on.
62	Bad-CATCH	FILL		That's the desk that boyfriend her sat at.

63	Good	FILL		Sarah knows that Richard never drinks juice.
64	Good	FILL		You went to Greece this summer.
65	RC	I-S	16	There was a radio show host who recommended that song.
66	Bad	FILL		That's the teddy that I gave she for Christmas.
67	WH	NI-S	10	Which friend forgot that Peter had already finished the essay?
68	WH	I-S	8	Which girl sees who drives a car?
69	RC	I-S	24	There are several rats which are living in our trashcans.
70	Bad	FILL		After the viewing, bought he the house on the end of the street.
71	WH	I-L	11	Which race did the audience see who finished?
72	Bad	FILL		That's the curtains that her drew.

AJT C

Number	Island/ judgment	Condition	Item	Sentence
1	Good	FILL		That's the homework he finished as fast as he could.
2	Bad	FILL		After the viewing, bought he the house on the end of the street.
3	WH	NI-L	6	Which books does the professor know that the author wrote?
4	Bad	FILL		She hate the new album that her favorite artist have released.
5	WH	I-S	1	Which friend remembers who bought the movie-tickets?
6	Bad	FILL		That's the ocean that him tried to reduce the amount of plastic in.
7	RC	I-S	21	There is only one chef that has mastered the recipe.
8	Subject	NI-S	35	Which editor knows that a picture is in the newspaper?
9	Subject	NI-S	31	Which painter said that a portrait is displayed in the museum?
10	Good	FILL		Claire knows that Andrea never eats cheese.
11	Subject	I-S	29	Which journalist thinks that the meeting with the millionaire destroyed the political union?

12	Good-CATCH	FILL		That's the teacup that fell.
13	WH	I-L	4	Which pen did Anne forget who borrowed?
14	Subject	I-S	25	Which boy knows that the number of the King isn't listed in the phone book?
15	Bad	FILL		Since high school has she played the guitar.
16	Subject	NI-L	34	Which girl did my teacher see scared me?
17	RC	NI-L	22	That's the director that I know that many actors refuse to work with.
18	WH	NI-S	11	Which audience saw that the girl finished a 100-meter race?
19	RC	NI-S	23	I saw that several dogs had peed on the fence.
20	Bad	FILL		I wouldn't have gone home if that it had been fun at the party.
21	RC	I-S	13	There were several men who sold that kind of balloon on constitution day.
22	WH	I-L	12	Which door did the security guard see who opened?
23	Subject	I-L	36	Which girl did he say that the presents for were lying under the tree?
24	Good	FILL		You went to Greece this summer.
25	Good	FILL		It might have been a nice date if he hadn't been so boring.
26	WH	NI-L	2	Which cookies did Adam tell me that Emma had sold?
27	RC	NI-L	18	That's the class that I know that many freshmen have taken.
28	Bad	FILL		After breakfast, left her boyfriend the hotel room.
29	RC	I-L	24	Those are the trashcans that there are several rats which are living in.
30	RC	NI-S	19	I saw that several monkeys lived in the banana trees.
31	Subject	NI-L	30	Which picture does John know is displayed on a shelf?
32	Bad	FILL		It were snowing outside her bedroom window.
33	Bad	FILL		That's the theory that my teacher fried to teach I.
34	RC	I-L	16	That's the song that there was a radio show host who recommended.

35	Bad-CATCH	FILL		That's man the that liked cheese.
36	Bad	FILL		These are people those that she disliked.
37	Bad	FILL		I owns that cottage.
38	WH	NI-S	7	Which magician knows that the girl ate the poisoned apple?
39	Good	FILL		He doesn't like to play football, because he's not good at dribbling.
40	RC	NI-S	15	She thinks that many people speak English.
41	Bad	FILL		I likes the girls in my new class.
42	RC	I-S	17	There was an intern who recorded the conversation.
43	WH	I-S	9	Which police officer knows who has stolen the money?
44	WH	NI-S	3	Which producer knows that the singer loves the album?
45	Good	FILL		That's the mittens that he wears all through the winter.
46	RC	I-L	20	That's the homework that there are only some students that have done.
47	Bad	FILL		I'm easy to find because that I never hide.
48	Bad-CATCH	FILL		That's the desk that boyfriend her sat at.
49	Bad	FILL		That's the teddy that I gave she for Christmas.
50	Bad	FILL		At the farm petted Mary the horses.
51	Bad	FILL		We prefers vanilla to chocolate flavor.
52	Bad	FILL		Sarah knows that juice drinks Richard never.
53	Bad	FILL		This morning sent he an email to his friend in Asia.
54	RC	NI-L	14	That's the school that I know that several teachers work at.
55	Subject	I-S	33	Which judge heard that the suspect of the robbery bribed the jury.
56	Bad	FILL		He love all the subjects at school.
57	Good-CATCH	FILL		The science exam consists of 54 questions.
58	WH	I-S	5	Which teacher knew who had failed the exam?

59	Good	FILL		The pop-quiz on American history was difficult.
60	Subject	I-L	32	Which loss did my best friend tell me that the possibility of wasn't even considered?
61	Subject	I-L	28	Which cigarette did I think that the smoke from bothered her?
62	Good	FILL		That's the school that he attended for five years.
63	Subject	NI-S	27	Which boy saw that the lion attacked the veterinarian?
64	Subject	NI-L	26	Which recipe does the chef know was sitting on the counter?
65	Bad	FILL		That's the job that us wanted.
66	WH	I-L	8	Which car does the girl see who drives?
67	Good	FILL		She hopes for a very cold and snowy winter.
68	Bad	FILL		That's the stick that Peter accidently hit he in the head with.
69	Bad	FILL		That's the curtains that her drew.
70	Bad	FILL		Before leaving for dinner, changed he his outfit.
71	Good	FILL		He finished the race in less than one hour.
72	WH	NI-L	10	Which essay did my friend forget that Peter had already finished?

AJT D

Number	Island/ judgment	Condition	Item	Sentence
1	Good	FILL		She hopes for a very cold and snowy winter.
2	Bad	FILL		After the viewing, bought he the house on the end of the street.
3	RC	NI-L	15	That's the language that she thinks that many people speak.
4	Good	FILL		That's the homework he finished as fast as he could.
5	Subject	NI-S	32	Which friend told me that the possibility wasn't even considered?
6	Good	FILL		It might have been a nice date if he hadn't been so boring.
7	Bad	FILL		Sarah knows that juice drinks Richard never.

8	Bad	FILL		He love all the subjects at school.
9	RC	I-L	13	That’s the kind of balloon that there were several men who sold on constitution day.
10	Bad	FILL		She hate the new album that her favorite artist have released.
11	Subject	I-S	30	Which boy knows that the picture of his family is displayed on a shelf?
12	Bad	FILL		I’m easy to find because that I never hide.
13	WH	NI-L	7	Which fruit does the magician know that the girl ate?
14	WH	NI-L	3	Which album does the producer know that the singer loves?
15	RC	NI-L	23	That’s the fence that I saw that several dogs had peed on.
16	Bad-CATCH	FILL		That's man the that liked cheese.
17	Bad	FILL		I wouldn’t have gone home if that it had been fun at the party.
18	RC	NI-S	20	The teacher suspects that only some students have done the homework.
19	RC	I-S	14	There are several teachers who work at that school.
20	WH	I-S	6	Which professor knows who wrote the books?
21	Bad	FILL		It were snowing outside her bedroom window.
22	WH	I-S	2	Which friend told me who had sold the cookies?
23	Subject	NI-L	27	Which lion did Daniel see attacked the veterinarian?
24	Good-CATCH	FILL		The science exam consists of 54 questions.
25	RC	I-L	17	That’s the conversation that there was an intern who recorded.
26	WH	I-S	10	Which friend forgot who had already finished the essay?
27	Bad	FILL		These are people those that she disliked.
28	RC	NI-L	19	Those are the banana trees that I saw that several monkeys lived in.
29	Good	FILL		He doesn’t like to play football, because he’s not good at dribbling.
30	WH	I-L	5	Which exam did the teacher know who had failed?

31	Subject	NI-L	35	Which picture does the editor know is in the newspaper?
32	Bad	FILL		That’s the job that us wanted.
33	Subject	NI-S	28	Which person thought that the smoke bothered her?
34	RC	I-S	22	There are many actors who refuse to work with that director.
35	Bad	FILL		That’s the curtains that her drew.
36	WH	NI-S	12	Which guard saw that the burglar opened the vault door?
37	Bad-CATCH	FILL		That's the desk that boyfriend her sat at.
38	Bad	FILL		That’s the theory that my teacher fried to teach I.
39	WH	NI-S	8	Which girl sees that Andrew drives a car?
40	WH	I-L	1	Which tickets do you remember who bought?
41	Bad	FILL		That’s the teddy that I gave she for Christmas.
42	Subject	NI-S	36	Which boy said that the presents were lying under the tree?
43	Bad	FILL		We prefers vanilla to chocolate flavor.
44	Bad	FILL		Before leaving for dinner, changed he his outfit.
45	WH	I-L	9	Which money does the police officer know who has stolen?
46	Subject	I-L	25	Which king does he know that the number of isn’t listed in the phone book?
47	RC	NI-S	16	I’m sure that the radio show host recommended that song.
48	Good	FILL		That’s the mittens that he wears all through the winter.
49	Bad	FILL		At the farm petted Mary the horses.
50	Bad	FILL		Since high school has she played the guitar.
51	WH	NI-L	11	Which race did the audience see that the girl finished?
52	Subject	I-S	26	Which chef knows that the recipe for tomato soup was sitting on the counter?
53	Good	FILL		That’s the school that he attended for five years.
54	Good-CATCH	FILL		That's the teacup that fell.

55	Bad	FILL		I owns that cottage.
56	Subject	I-L	33	Which robbery did the judge hear that the suspect of bribed the jury?
57	RC	I-S	18	There are many freshmen who have taken that class.
58	Bad	FILL		After breakfast, left her boyfriend the hotel room.
59	Subject	I-L	29	Which millionaire does the journalist think that the meeting with destroyed the political union?
60	WH	NI-S	4	Which girl forgot that Lily borrowed her pen?
61	Good	FILL		You went to Greece this summer.
62	RC	NI-S	24	The janitor said that several rats are living in our trashcans.
63	RC	I-L	21	That's the recipe that there is only one chef that has mastered.
64	Bad	FILL		That's the stick that Peter accidently hit he in the head with.
65	Bad	FILL		I likes the girls in my new class.
66	Subject	I-S	34	Which teacher saw that the girl from my school scared me?
67	Bad	FILL		That's the ocean that him tried to reduce the amount of plastic in.
68	Good	FILL		The pop-quiz on American history was difficult.
69	Subject	NI-L	31	Which portrait did the painter say is displayed in the museum?
70	Bad	FILL		This morning sent he an email to his friend in Asia.
71	Good	FILL		Claire knows that Andrea never eats cheese.
72	Good	FILL		He finished the race in less than one hour.

APPENDIX F2: NORWEGIAN AJTS

AJT A

Number	Island/ judgment	Condition	Item	Sentence
1	Bad	FILL		Plutselig musikken stoppet og det ble helt stille.
2	Good	FILL		Det er leksene som han allerede har gjort.
3	RC	I-S	19	Det var flere håndballspillere som kastet ballen mellom seg.
4	Bad	FILL		Det er seremonien som henne hilste på kongen i.
5	WH	NI-L	12	Hvilken port ser vekteren at den butikkansatte åpner?
6	Bad	FILL		Etter du var på festival du fikk en kraftig forkjølelse.
7	WH	NI-S	1	Hvilken venn husker at Per kjøpte billettene til konserten?
8	SUB	I-S	35	Hvilken gutt vet at sekkene med klær ligger på loftet?
9	RC	NI-S	21	Jeg vet at en politiker har skrevet en bok.
10	Good	FILL		Vi vet at om morgenen drikker Peter ofte kaffe.
11	Bad-CATCH	FILL		Det er håndballaget som hun fikk spille med noen snill gutter fra.
12	RC	NI-L	24	Det er treet som han tror at flere ekorn bor i.
13	Bad	FILL		Jeg bor helt i enden av veien, i et blå hus.
14	SUB	NI-S	33	Hvilken servitør hørte at kaken smakte godt?
15	Bad	FILL		Resten av sommeren han var i Spania.
16	Bad	FILL		Da hun gikk i land, så hun at øya var dekt av stort og grønt trær.
17	SUB	NI-S	29	Hvilken venninne mente at møtet ødela hele dagen?
18	SUB	NI-L	36	Hvilken ferie sa hun at var hyggelig?
19	Good-CATCH	FILL		Han spilte amerikansk fotball hele friminuttet.
20	Bad	FILL		Uten en lyd jeg lukket døren til soverommet.

21	SUB	I-S	31	Hvilken venn sa at et bilde av kongefamilien henger på hytta?
22	SUB	NI-S	25	Hvilken turist vet at veien ikke er oppgitt på kartet?
23	WH	NI-S	5	Hvilken lærer visste at jeg hadde strøket på prøven?
24	Bad	FILL		Det er diskusjonen som hun var enig med jeg i.
25	SUB	I-L	30	Hvilket band vet vennene hennes at plakaten av henger på veggen?
26	Good	FILL		Jeg ville aldri kranglet om hvorfor jeg farget håret mitt.
27	RC	NI-L	20	Det er matteoppgavene som læreren mistenkte at flere elever hadde gjort ferdig.
28	Bad	FILL		Det er selskapet som meg kjøpte en ny kjole til.
29	Bad	FILL		Det er prøven som jeg stoppet hun fra å jukse på.
30	RC	NI-L	16	Det er jenta som jeg var sikker på at en programleder irriterte.
31	Bad	FILL		På skogturen vi rotet oss nesten bort.
32	Good-CATCH	FILL		Jeg har spist middag hos Sara, så jeg trenger ikke mat.
33	WH	NI-L	8	Hvilken moped så gutten at bestevennen hans kjørte?
34	SUB	I-S	27	Hvilken gjest ser at haien i akvariet angriper dyrepasseren?
35	Bad	FILL		Til treningen du kjørte bil.
36	WH	I-L	2	Hvilke bøker fortalte Sara meg hvem som hadde solgt?
37	WH	I-S	11	Hvilket publikum så hvem som fullførte 5-mila?
38	Bad	FILL		I sommer brudeparet giftet seg.
39	WH	I-S	7	Hvilken jente vet hvem som stakk seg på tornene på rosen?
40	RC	I-L	18	Det er bilen som det er mange miljøbevisste mennesker som kjøper.
41	WH	I-S	3	Hvilken gutt så hvem som elsket Sara?
42	RC	I-L	14	Det er bøkene som det er flere bibliotekarer som leser.
43	Bad	FILL		Like før soloppgang Ane våknet.

44	RC	NI-S	13	Jeg husker at flere elever solgte bagetter i friminuttet.
45	Bad	FILL		Hun var veldig glad i den lite hunden som mormoren hadde hatt i ti år.
46	WH	I-L	10	Hvilket rom glemte samboeren min hvem som hadde vasket?
47	Good	FILL		Det er matteoppgavene som jeg har gjort ferdig.
48	SUB	I-L	26	Hvilken rett vet kokken at oppskriften på sto på pakningen?
49	Good	FILL		Det er vinduet som hun knuste fordi hun var sint på meg.
50	Bad	FILL		Det er kinobillettene som oss vil ha ungdomsrabatt på.
51	SUB	NI-L	28	Hvilke lyder tror du at plager henne?
52	SUB	I-L	34	Hvilken klasse sa assistenten at eleven i slo læreren?
53	Good	FILL		Jeg sa at jeg kunne gjøre det dér langt bedre.
54	Bad	FILL		I går hun danset i en konkurranse.
55	Bad	FILL		Det er mannen som meg kunne tenkt meg å snakke med.
56	Good	FILL		Jeg gleder meg, fordi jeg skal møte noen nye venner i morgen.
57	WH	I-L	6	Hvilken bok vet læreren hvem som har skrevet?
58	RC	I-L	22	Det er dyrene som det er noen voksne som jakter på.
59	Bad	FILL		I helga jeg har vasket hele huset, til og med kjelleren.
60	WH	NI-L	4	Hvilke sko husker fotballspilleren at Ivar hadde lånt?
61	Good	FILL		Det ble ikke en morsom kveld, selv om at jeg fikk se den filmen jeg ville.
62	RC	I-S	15	Det er få lærere som snakker tegnspråk.
63	SUB	NI-L	32	Hvilken prøve fortalte studenten at var vanskelig?
64	Good	FILL		Du er sur fordi at du ikke fant Kari.
65	Bad-CATCH	FILL		Det er katt som hun lekte med.
66	RC	I-S	23	Det var flere håndverkere som jobbet med huset.

67	WH	NI-S	9	Hvilken etterforsker vet at kunstsamleren hadde stjålet maleriet?
68	Bad	FILL		Like etter klokken 14 spiste hun et stor eple.
69	Bad	FILL		I det siste minuttet av kampen, håndballspilleren skåra det avgjørende målet.
70	Good	FILL		Det er jobben som han ønsket seg.
71	Bad	FILL		Uten forvarsel det begynte å regne.
72	RC	NI-S	17	Hun var sikker på at en lydmann tok opp podkasten.

AJT B

Number	Island/ judgment	Condition	Item	Sentence
1	Bad	FILL		Det er prøven som jeg stoppet hun fra å jukse på.
2	Good	FILL		Det er jobben som han ønsket seg.
3	WH	I-S	4	Hvilken fotballspiller husker hvem som hadde lånt skoene hans?
4	Good	FILL		Jeg gleder meg, fordi jeg skal møte noen nye venner i morgen.
5	WH	NI-S	6	Hvilken lærer vet at forfatteren har skrevet boka?
6	Bad	FILL		Plutselig musikken stoppet og det ble helt stille.
7	WH	NI-L	5	Hvilken prøve visste læreren at jeg hadde strøket på?
8	Good	FILL		Du er sur fordi at du ikke fant Kari.
9	SUB	NI-L	29	Hvilket møte mente Berit at ødela hele dagen?
10	WH	NI-S	2	Hvilken venninne fortalte meg at Knut hadde solgt bøkene?
11	WH	I-S	8	Hvilken gutt så hvem som kjørte mopeden?
12	Bad	FILL		Jeg bor helt i enden av veien, i et blå hus.
13	WH	I-S	12	Hvilken vekter ser hvem som åpner porten?
14	SUB	I-S	28	Hvilken venn tror at lydene fra action-filmene plager henne?
15	RC	I-S	20	Det var flere elever som hadde gjort ferdig matteoppgavene.
16	Good	FILL		Det er leksene som han allerede har gjort.

17	RC	I-L	19	Det er ballen som det var flere håndballspillere som kastet mellom seg.
18	RC	I-L	23	Det er huset som det var flere håndverkere som jobbet med.
19	SUB	NI-S	30	Hvilke venner vet at plakaten henger på veggen?
20	Good	FILL		Jeg ville aldri kranglet om hvorfor jeg farget håret mitt.
21	SUB	I-L	35	Hvilke klær vet jeg at sekkene med ligger på loftet?
22	Good	FILL		Det er matteoppgavene som jeg har gjort ferdig.
23	WH	I-L	7	Hvilke torner vet hun hvem som stakk seg på?
24	Good-CATCH	FILL		Jeg har spist middag hos Sara, så jeg trenger ikke mat.
25	Bad	FILL		Etter du var på festival du fikk en kraftig forkjølelse.
26	Bad	FILL		Det er seremonien som henne hilste på kongen i.
27	WH	NI-S	10	Hvilken samboer glemte at jeg hadde vasket badet?
28	Bad	FILL		Da hun gikk i land, så hun at øya var dekt av stort og grønt trær.
29	RC	NI-S	14	Jeg vet at flere bibliotekarer leser krimbøker.
30	RC	NI-S	22	Hun visste at noen voksne jaktet på dyr.
31	SUB	NI-S	26	Hvilken kokk vet at oppskriften sto på pakningen?
32	Bad	FILL		I helga jeg har vasket hele huset, til og med kjelleren.
33	SUB	NI-L	33	Hvilken kake hørte servitøren at smakte godt?
34	Bad	FILL		Uten forvarsel det begynte å regne.
35	WH	I-L	11	Hvilket renn så vi hvem som fullførte?
36	SUB	I-S	36	Hvilken jente sa at ferien i Australia var hyggelig?
37	RC	I-S	24	Det er flere ekorn som bor i treet.
38	WH	I-L	3	Hvilken jente så Jacob hvem som elsket?
39	Bad-CATCH	FILL		Det er katt som hun lekte med.
40	WH	NI-L	9	Hvilket maleri vet etterforskeren at kunstsamleren hadde stjålet?

41	Bad	FILL		På skogturen vi rotet oss nesten bort.
42	Good	FILL		Det er vinduet som hun knuste fordi hun var sint på meg.
43	Good-CATCH	FILL		Han spilte amerikansk fotball hele friminuttet.
44	RC	NI-L	17	Det er podkasten som hun var sikker på at en lydmann tok opp.
45	SUB	NI-S	34	Hvilken assistent sa at eleven slo læreren?
46	Bad-CATCH	FILL		Det er håndballaget som hun fikk spille med noen snill gutter fra.
47	Bad	FILL		Til treningen du kjørte bil.
48	Bad	FILL		Det er diskusjonen som hun var enig med jeg i.
49	Bad	FILL		Resten av sommeren han var i Spania.
50	Bad	FILL		I sommer brudeparet giftet seg.
51	WH	NI-L	1	Hvilke billetter husker han at Per kjøpte?
52	Good	FILL		Vi vet at om morgenen drikker Peter ofte kaffe.
53	SUB	I-S	32	Hvilken student fortalte at prøven om andre verdenskrig var vanskelig?
54	Bad	FILL		Det er kinobillettene som oss vil ha ungdomsrabatt på.
55	Bad	FILL		Det er mannen som meg kunne tenkt meg å snakke med.
56	RC	I-S	16	Det var en programleder som irriterte Kine.
57	RC	NI-S	18	Jeg vet at mange miljøbevisste mennesker kjøper el-bil.
58	Bad	FILL		Like før soloppgang Ane våknet.
59	RC	NI-L	13	Det er bagettene som jeg husker at flere elever solgte i friminuttet.
60	RC	NI-L	21	Det er boken som jeg vet at en politiker har skrevet.
61	Bad	FILL		I går hun danset i en konkurranse.
62	Bad	FILL		Hun var veldig glad i den lite hunden som mormoren hadde hatt i ti år.
63	Good	FILL		Jeg sa at jeg kunne gjøre det dér langt bedre.
64	Bad	FILL		I det siste minuttet av kampen, håndballspilleren skåra det avgjørende målet.

65	SUB	NI-L	25	Hvilken vei vet turisten at ikke er oppgitt på kartet?
66	RC	I-L	15	Det er språket som det er få lærere som snakker.
67	Bad	FILL		Like etter klokken 14 spiste hun et stor eple.
68	Bad	FILL		Det er selskapet som meg kjøpte en ny kjole til.
69	Bad	FILL		Uten en lyd jeg lukket døren til soverommet.
70	SUB	I-L	27	Hvilket akvarium ser gjesten at haien i angriper dyrepasseren?
71	Good	FILL		Det ble ikke en morsom kveld, selv om at jeg fikk se den filmen jeg ville.
72	SUB	I-L	31	Hvilken familie sa Knut at et bilde av henger på hytta?

AJT C

Number	Island/ judgment	Condition	Item	Sentence
1	Bad	FILL		I det siste minuttet av kampen, håndballspilleren skåra det avgjørende målet.
2	Good	FILL		Det er matteoppgavene som jeg har gjort ferdig.
3	SUB	NI-S	27	Hvilken gjest ser at haien angriper dyrepasseren?
4	SUB	I-L	36	Hvilken verdensdel sa hun at ferien i var hyggelig?
5	Good	FILL		Det er leksene som han allerede har gjort.
6	WH	NI-S	11	Hvilket publikum så at skiløperen fullførte 5-mila?
7	Good	FILL		Du ble sur fordi du ikke fant Kari.
8	WH	I-S	9	Hvilken etterforsker vet hvem som hadde stjålet maleriet?
9	RC	NI-S	15	Hun mener at få lærere snakker tegnspråk.
10	Good	FILL		Det er vinduet som hun knuste fordi hun var sint på meg.
11	SUB	I-L	28	Hvilken film tror du at lydene fra plager henne?
12	Bad	FILL		Uten en lyd jeg lukket døren til soverommet.
13	SUB	NI-L	30	Hvilken plakat vet vennene hennes at henger på veggen?

14	WH	I-S	5	Hvilken lærer visste hvem som hadde strøket på prøven?
15	Bad	FILL		Hun var veldig glad i den lite hunden som mormoren hadde hatt i ti år.
16	Bad	FILL		Det er mannen som meg kunne tenkt meg å snakke med.
17	RC	NI-L	18	Det er bilen som jeg vet at mange miljøbevisste mennesker kjøper.
18	RC	NI-S	23	Han så at flere håndverkere jobbet med huset.
19	WH	I-L	4	Hvilke sko husker fotballspilleren hvem som lånte?
20	Bad	FILL		I helga jeg har vasket hele huset, til og med kjelleren.
21	Good	FILL		Vi vet at Peter ofte drikker kaffe om morgenen.
22	WH	NI-L	2	Hvilke bøker fortalte Sara meg at Knut hadde solgt?
23	SUB	I-L	32	Hvilken krig fortalte studenten at prøven om var vanskelig?
24	Bad	FILL		Like før soloppgang Ane våknet.
25	Good-CATCH	FILL		Jeg har spist middag hos Sara, så jeg trenger ikke mat.
26	RC	NI-L	22	Det er dyrene som hun visste at noen voksne jaktet på.
27	WH	I-L	12	Hvilken port ser vekteren hvem som åpner?
28	Bad	FILL		Det er prøven som jeg stoppet hun fra å jukse på.
29	RC	I-L	24	Det er treet som det er flere ekorn som bor i.
30	Bad	FILL		Det er selskapet som meg kjøpte en ny kjole til.
31	Bad	FILL		Resten av sommeren han var i Spania.
32	Bad	FILL		Etter du var på festival du fikk en kraftig forkjølelse.
33	SUB	NI-S	31	Hvilken venn sa at et bilde henger på hytta?
34	Bad	FILL		Da hun gikk i land, så hun at øya var dekt av stort og grønt trær.
35	Good	FILL		Det ble ikke en morsom kveld, selv om jeg fikk se den filmen jeg ville.
36	Bad-CATCH	FILL		Det er håndballaget som hun fikk spille med noen snill gutter fra.
37	Bad	FILL		Uten forvarsel det begynte å regne.

38	SUB	NI-L	34	Hvilken elev sa assistenten at slo læreren?
39	Good	FILL		Det er jobben som han ønsket seg.
40	Good	FILL		Jeg gleder meg, fordi at jeg skal møte noen nye venner i morgen.
41	WH	I-S	1	Hvilken venn husker hvem som kjøpte billettene til konserten?
42	Bad	FILL		Det er kinobillettene som oss vil ha ungdomsrabatt på.
43	WH	NI-S	7	Hvilken jente vet at gartneren stakk seg på tornene på rosen?
44	RC	NI-L	14	Det er bøkene som jeg vet at flere bibliotekarer leser.
45	RC	NI-S	19	Jeg så at flere håndballspillere kastet ballen mellom seg.
46	Bad	FILL		Jeg bor helt i enden av veien, i et blå hus.
47	Good	FILL		Jeg ville aldri kranglet om hvorfor at jeg farget håret mitt.
48	RC	I-S	21	Det er en politiker som har skrevet en bok.
49	RC	I-L	16	Det er jenta som det var en programleder som irriterte.
50	SUB	NI-L	26	Hvilken oppskrift vet kokken at sto på pakningen?
51	Bad	FILL		I sommer brudeparet giftet seg.
52	RC	I-S	17	Det var en lydmann som tok opp podkasten.
53	Bad	FILL		Like etter klokken 14 spiste hun et stor eple.
54	RC	I-S	13	Det var flere elever som solgte bagetter i friminuttet.
55	Bad	FILL		Plutselig musikken stoppet og det ble helt stille.
56	SUB	I-S	33	Hvilken servitør hørte at kaken med valnøtter smakte godt?
57	Bad	FILL		Til treningen du kjørte bil.
58	Bad-CATCH	FILL		Det er katt som hun lekte med.
59	WH	I-L	8	Hvilken moped så gutten hvem som kjørte?
60	Bad	FILL		I går hun danset i en konkurranse.
61	WH	NI-L	6	Hvilken bok vet læreren at forfatteren har skrevet?

62	SUB	I-S	29	Hvilken venninne mente at møtet med sjefen min ødela hele dagen?
63	WH	NI-L	10	Hvilket rom glemte samboeren min at jeg hadde vasket?
64	Bad	FILL		På skogturen vi rotet oss nesten bort.
65	SUB	NI-S	35	Hvilken gutt vet at sekkene ligger på loftet?
66	Bad	FILL		Det er seremonien som henne hilste på kongen i.
67	Good-CATCH	FILL		Han spilte amerikansk fotball hele friminuttet.
68	WH	NI-S	3	Hvilken gutt så at Andrea elsket Sara?
69	Good	FILL		Jeg sa at det dér kunne jeg gjøre langt bedre.
70	SUB	I-S	25	Hvilken turist vet at veien til slottet ikke er oppgitt på kartet?
71	Bad	FILL		Det er diskusjonen som hun var enig med jeg i.
72	RC	I-L	20	Det er matteoppgavene som det var flere elever som hadde gjort ferdig.

AJT D

Number	Island/ judgment	Condition	Item	Sentence
1	Bad	FILL		I går hun danset i en konkurranse.
2	Good	FILL		Det er matteoppgavene som jeg har gjort ferdig.
3	Bad-CATCH	FILL		Det er håndballaget som hun fikk spille med noen snill gutter fra.
4	SUB	NI-S	32	Hvilken student fortalte at prøven var vanskelig?
5	WH	NI-L	7	Hvilke torner vet hun at gartneren stakk seg på?
6	Bad	FILL		Det er mannen som meg kunne tenkt meg å snakke med.
7	WH	I-S	10	Hvilken samboer glemte hvem som hadde vasket badet?
8	RC	I-L	17	Det er podkasten som det var en lydmann som tok opp.
9	Bad	FILL		I sommer brudeparet giftet seg.
10	Bad	FILL		I helga jeg har vasket hele huset, til og med kjelleren.
11	RC	I-L	21	Det er boken som det er en politiker som har skrevet.

12	SUB	NI-L	31	Hvilket bilde sa Knut at henger på hytta?
13	Bad	FILL		Jeg bor helt i enden av veien, i et blå hus.
14	WH	I-L	1	Hvilke billetter husker han hvem som kjøpte?
15	Bad	FILL		Like etter klokken 14 spiste hun et stor eple.
16	WH	NI-L	11	Hvilket renn så vi at skiløperen fullførte?
17	Good	FILL		Du ble sur fordi du ikke fant Kari.
18	RC	NI-S	16	Jeg var sikker på at en programleder irriterte Kine.
19	SUB	I-S	26	Hvilken kokk vet at oppskriften på havregrøt sto på pakningen?
20	Bad	FILL		Det er seremonien som henne hilste på kongen i.
21	SUB	I-S	34	Hvilken assistent sa at eleven i matteklassen slo læreren?
22	RC	NI-L	15	Det er språket som hun mener at få lærere snakker.
23	WH	NI-S	8	Hvilken gutt så at bestevennen hans kjørte mopeden?
24	SUB	I-S	30	Hvilke venner vet at plakaten av boybandet henger på veggen?
25	Good	FILL		Vi vet at Peter ofte drikker kaffe om morgenen.
26	SUB	NI-L	35	Hvilke sekker vet jeg at ligger på loftet?
27	Good	FILL		Det er vinduet som hun knuste fordi hun var sint på meg.
28	WH	I-S	2	Hvilken venninne fortalte meg hvem som hadde solgt bøkene?
29	WH	I-S	6	Hvilken lærer vet hvem som har skrevet boka?
30	SUB	NI-L	27	Hvilken hai ser gjesten at angriper dyrepasseren?
31	Good-CATCH	FILL		Han spilte amerikansk fotball hele friminuttet.
32	RC	NI-L	19	Det er ballen som jeg så at flere håndballspillere kastet mellom seg.
33	Bad	FILL		Like før soloppgang Ane våknet.
34	Bad	FILL		På skogturen vi rotet oss nesten bort.
35	SUB	I-L	25	Hvilket slott vet turisten at veien til ikke er oppgitt på kartet?

36	Bad	FILL		Plutselig musikken stoppet og det ble helt stille.
37	Bad	FILL		Det er kinobillettene som oss vil ha ungdomsrabatt på.
38	Good	FILL		Jeg sa at det dér kunne jeg gjøre langt bedre.
39	WH	I-L	9	Hvilket maleri vet politiet hvem som hadde stjålet?
40	Bad	FILL		Uten en lyd jeg lukket døren til soverommet.
41	Good	FILL		Jeg gleder meg, fordi at jeg skal møte noen nye venner i morgen.
42	Bad	FILL		Hun var veldig glad i den lite hunden som mormoren hadde hatt i ti år.
43	SUB	I-L	33	Hvilke nøtter hørte hun at kaken med smakte godt?
44	Bad	FILL		Resten av sommeren han var i Spania.
45	Bad	FILL		Etter du var på festival du fikk en kraftig forkjølelse.
46	Bad	FILL		I det siste minuttet av kampen, håndballspilleren skåra det avgjørende målet.
47	RC	I-S	18	Det er mange miljøbevisste mennesker som kjøper el-bil.
48	Good	FILL		Det ble ikke en morsom kveld, selv om jeg fikk se den filmen jeg ville.
49	Good	FILL		Det er jobben som han ønsket seg.
50	RC	I-L	13	Det er bagettene som det var flere elever som solgte i friminuttet.
51	SUB	I-L	29	Hvilken sjef mente Berit at møtet med ødela hele dagen?
52	Bad	FILL		Det er diskusjonen som hun var enig med jeg i.
53	WH	NI-S	12	Hvilken vekter ser at den butikkansatte åpner porten?
54	SUB	NI-S	28	Hvilken venn tror at lydene plager henne?
55	Good	FILL		Jeg ville aldri kranglet om hvorfor at jeg farget håret mitt.
56	Good-CATCH	FILL		Jeg har spist middag hos Sara, så jeg trenger ikke mat.
57	WH	NI-L	3	Hvilken jente så Jacob at Andrea elsket?
58	Bad	FILL		Det er selskapet som meg kjøpte en ny kjole til.
59	RC	NI-S	24	Han tror at flere ekorn bor i treet.

60	Good	FILL		Det er leksene som han allerede har gjort.
61	Bad-CATCH	FILL		Det er katt som hun lekte med.
62	RC	I-S	14	Det er flere bibliotekarer som leser krimbøker.
63	RC	NI-S	20	Læreren mistenkte at flere elever hadde gjort ferdig matteoppgavene.
64	WH	NI-S	4	Hvilken fotballspiller husker at Ivar hadde lånt skoene hans?
65	Bad	FILL		Uten forvarsel det begynte å regne.
66	WH	I-L	5	Hvilken prøve visste læreren hvem som hadde strøket på?
67	Bad	FILL		Det er prøven som jeg stoppet hun fra å jukse på.
68	RC	I-S	22	Det er noen voksne som jakter på dyr.
69	Bad	FILL		Til treningen du kjørte bil.
70	SUB	NI-S	36	Hvilken jente sa at ferien var hyggelig?
71	Bad	FILL		Da hun gikk i land, så hun at øya var dekt av stort og grønt trær.
72	RC	NI-L	23	Det er huset som han så at flere håndverkere jobbet med.

APPENDIX G1: ENGLISH FILLERS

Intended judgement/condition	Set	Sentence
Bad-CATCH		That's man the that liked cheese.
Bad-CATCH		That's the desk that boyfriend her sat at.
Bad		These are people those that she disliked.
Bad		That’s the teddy that I gave she for Christmas.
Bad		That’s the stick that Peter accidently hit he in the head with.
Bad		That’s the theory that my teacher fried to teach I.
Bad		That’s the curtains that her drew.
Bad		That’s the ocean that him tried to reduce the amount of plastic in.
Bad		That’s the job that us wanted.
Bad		I owns that cottage.
Bad		He love all the subjects at school.
Bad		I likes the girls in my new class.
Bad		She hate the new album that her favorite artist have released.
Bad		We prefers vanilla to chocolate flavor.
Bad		It were snowing outside her bedroom window.
Bad		After breakfast, left her boyfriend the hotel room.
Bad		This morning sent he an email to his friend in Asia.
Bad		After the viewing, bought he the house on the end of the street.
Bad		Since high school has she played the guitar.
Bad		At the farm petted Mary the horses.
Bad		Before leaving for dinner, changed he his outfit.
Good-CATCH		The science exam consists of 54 questions.
Good-CATCH		That's the teacup that fell.

Good		That’s the school that he attended for five years.
Good		That’s the mittens that he wears all through the winter.
Good		That’s the homework he finished as fast as he could.
Good		He finished the race in less than one hour.
Good		You went to Greece this summer.
Good		The pop-quiz on American history was difficult.
Good		She hopes for a very cold and snowy winter.
CP-STACK	A/B	Claire knows that Andrea eats never cheese.
CP-STACK	A/B	It might have been a nice date if that he hadn’t been so boring.
CP-STACK	A/B	He doesn’t like to play football, because that he’s not good at dribbling.
CP-STACK	C/D	Sarah knows that juice drinks Richard never.
CP-STACK	C/D	I wouldn’t have gone home if that it had been fun at the party.
CP-STACK	C/D	I’m easy to find because that I never hide.
NO CP-STACK	A/B	Sarah knows that Richard never drinks juice.
NO CP-STACK	A/B	I wouldn’t have gone home if it had been fun at the party.
NO CP-STACK	A/B	I’m easy to find, because I never hide.
NO CP-STACK	C/D	Claire knows that Andrea never eats cheese.
NO CP-STACK	C/D	It might have been a nice date if he hadn’t been so boring.
NO CP-STACK	C/D	He doesn’t like to play football, because he’s not good at dribbling.

APPENDIX G2: NORWEGIAN FILLERS

Intended judgement/condition	Set	Sentence
Bad-CATCH		Det er katt som hun lekte med.
Bad-CATCH		Det er håndballaget som hun fikk spille med noen snill gutter fra.
Bad		Det er mannen som meg kunne tenkt meg å snakke med.
Bad		Det er diskusjonen som hun var enig med jeg i.
Bad		Det er prøven som jeg stoppet hun fra å jukse på.
Bad		Det er selskapet som meg kjøpte en ny kjole til.
Bad		Det er kinobillettene som oss vil ha ungdomsrabatt på.
Bad		Det er seremonien som henne hilste på kongen i.
Bad		I sommer brudeparet giftet seg.
Bad		Til treningen du kjørte bil.
Bad		Etter du var på festival du fikk en kraftig forkjølelse.
Bad		På skogturen vi rotet oss nesten bort.
Bad		I helga jeg har vasket hele huset, til og med kjelleren.
Bad		I det siste minuttet av kampen, håndballspilleren skåra det avgjørende målet.
Bad		Resten av sommeren han var i Spania.
Bad		I går hun danset i en konkurranse.
Bad		Like før soloppgang Ane våknet.
Bad		Uten en lyd jeg lukket døren til soverommet.
Bad		Uten forvarsel det begynte å regne.
Bad		Plutselig musikken stoppet og det ble helt stille.
Bad		Like etter klokken 14 spiste hun en stort eple.
Bad		Jeg bor helt i enden av veien, i et blå hus.

Bad		Hun var veldig glad i den lite hunden som mormoren hadde hatt i ti år.
Bad		Da hun gikk i land, så hun at øya var dekt av stort og grønt trær.
Good-CATCH		Jeg har spist middag hos Sara, så jeg trenger ikke mat.
Good-CATCH		Han spilte amerikansk fotball hele friminuttet.
Good		Det er leksene som han allerede har gjort.
Good		Det er matteoppgavene som jeg har gjort ferdig.
Good		Det er vinduet som hun knuste fordi hun var sint på meg.
Good		Det er jobben som han syklet til i dag.
CP-STACK	A/B	Vi vet at om morgenen drikker Peter ofte kaffe. (Nyvad, 2016, p. 364)
CP-STACK	A/B	Du er sur fordi at du ikke fant Kari.
CP-STACK	A/B	Det ble ikke en morsom kveld, selv om at jeg fikk se den filmen jeg ville.
CP-STACK	C/D	Jeg sa at det dér kunne jeg gjøre langt bedre. (Nyvad, 2016, p. 364)
CP-STACK	C/D	Jeg gleder meg, fordi at jeg skal møte noen nye venner i morgen.
CP-STACK	C/D	Jeg ville aldri kranglet om hvorfor at jeg farget håret mitt.
NO CP-STACK	A/B	Jeg sa at jeg kunne gjøre det dér langt bedre. (Nyvad, 2016, p. 364) (Nyvad, 2016, p.

		364) (Nyvad, 2016, p. 364) (Nyvad, 2016, p. 364) (Nyvad, 2016, p. 364)
NO CP-STACK	A/B	Jeg gleder meg, fordi jeg skal møte noen nye venner i morgen.
NO CP-STACK	A/B	Jeg ville aldri kranglet om hvorfor jeg farget håret mitt.
NO CP-STACK	C/D	Vi vet at Peter ofte drikker kaffe om morgenen.
NO CP-STACK	C/D	Du ble sur fordi du ikke fant Kari.
NO CP-STACK	C/D	Det ble ikke en morsom kveld, selv om jeg fikk se den filmen jeg ville.

Appendix H: PARTICIPANTS EXCLUDED FROM ANALYSIS

Excluded participants from the experimental group (English items)

Participant	FillBad	FillBadCatch	FillGood	FillGoodCatch
S10	3,263157895	3	3,285714286	3
S27	4,052631579	2,5	4,857142857	4
S3	3,631578947	1	4,142857143	3,5
S37	2,684210526	3,5	2,714285714	2
S4	4,894736842	6	4	6
S44	3,684210526	4	3,857142857	3,5
S48	3	1	3,857142857	3
S5	3,473684211	2	4,428571429	2
S50	3,631578947	2	4,857142857	4
S54	3,421052632	2,5	3,142857143	3,5
S60	3,421052632	3,5	3,428571429	3
S62	1,263157895	1	2,285714286	1
S7	4,263157895	3	4,285714286	4
S9	3,263157895	2,5	3,285714286	4

Excluded participants from the control group (English items)

Participant	FillBad	FillBadCatch	FillGood	FillGoodCatch
S103	4,421052632	6	5,857142857	6
S118	4	5,5	5,428571429	6

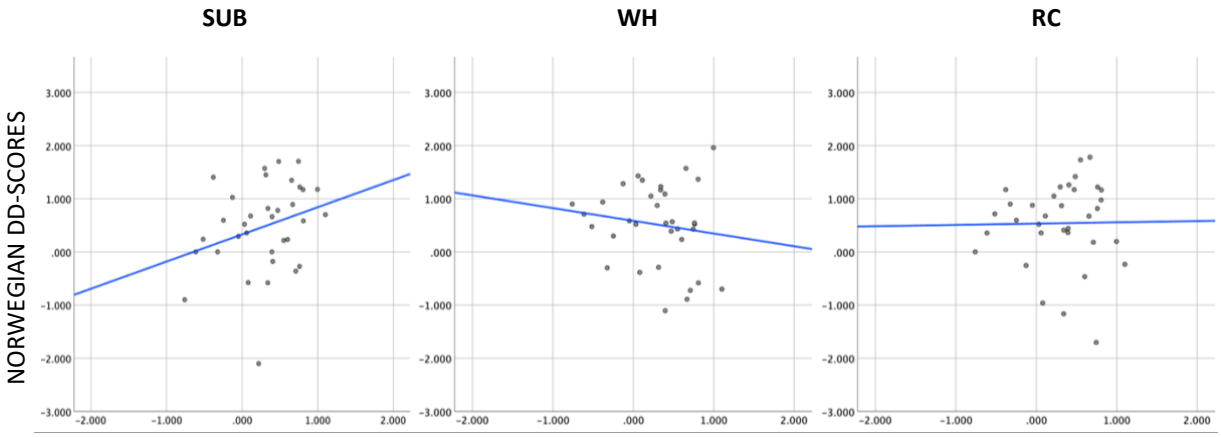
Excluded participants from the experimental group (Norwegian items)

Participant	FillBad	FillBadCatch	FillGood	FillGoodCatch
S16	2,409090909	3	3,5	3
S20	2,454545455	1	2	5,5

S21	1,571428571	1	1,4	4,5
S25	3,272727273	2,5	3,25	5,5
S37	3,409090909	3	2,75	4
S52	1,857142857	5	3,8	6
S54	2,666666667	2	2,6	3
S65	2,590909091	3	2,5	4,5
S68	3,285714286	5	4,2	4,5
S77	3,409090909	3	3,5	3,5
S79	3,428571429	2	3,2	5
S81	3,727272727	4	3,75	5
S83	3,636363636	3,5	3,5	4,5
S86	3	3	2,5	3
S89	1,545454545	1	1,5	6
S90	3,727272727	2,5	3,5	4
S92	3,909090909	4,5	4	4
S93	2,909090909	2	2,75	4,5

APPENDIX I: CORRELATIONS OF MEAN Z-SCORED RATINGS OF NORWEGIAN CP-STACK ITEMS AND NORWEGIAN DD-SCORES BY ISLANDS

Note: Each dot corresponds to a single participant.



APPENDIX J1: CONTROL GROUP'S MEAN RATINGS OF THE ENGLISH ITEMS, SORTED BY ITEM NUMBER AND CONDITIONS.

ISLAND	ITEM	NO-ISLAND SHORT	NO-ISLAND LONG	ISLAND SHORT	ISLAND LONG
WH	1	0,810	0,233	0,645	-1,093
WH	2	0,798	0,209	0,686	-1,071
WH	3	0,471	0,053	0,411	-0,991
WH	4	1,083	0,263	-0,038	-0,730
WH	5	0,993	-0,140	0,623	-0,954
WH	6	-0,185	0,110	1,164	-1,139
WH	7	0,228	-0,101	0,692	-0,848
WH	8	-0,173	-0,269	-0,452	-0,921
WH	9	0,802	-0,949	0,414	-1,215
WH	10	0,848	-0,150	0,233	-0,953
WH	11	-0,028	-0,184	-0,251	-0,198
WH	12	0,760	0,385	0,605	-0,942
RC	13	0,621	0,069	0,933	-1,374
RC	14	1,189	0,213	1,164	-0,627
RC	15	0,954	0,181	1,236	-0,887
RC	16	1,164	0,806	1,459	-0,805
RC	17	1,172	0,682	1,174	-0,734
RC	18	1,068	0,392	1,004	-0,107
RC	19	0,784	0,317	0,240	-1,010
RC	20	1,001	-0,267	0,645	-0,669
RC	21	1,236	-0,097	0,880	-0,638
RC	22	1,336	0,323	1,164	-0,253

RC	23	1,019	0,404	0,178	-0,900
RC	24	1,001	0,196	0,409	-1,252
SUB	25	0,899	-0,038	0,030	-1,246
SUB	26	0,495	-0,260	0,597	-1,139
SUB	27	0,635	-0,328	0,368	-1,404
SUB	28	0,393	-0,756	0,063	-0,737
SUB	29	0,959	0,303	0,546	-1,311
SUB	30	0,729	0,183	0,317	-1,276
SUB	31	0,105	0,798	0,943	-0,735
SUB	32	0,361	0,180	0,231	-1,096
SUB	33	0,728	-0,553	0,151	-1,311
SUB	34	0,294	-0,954	0,394	-1,185
SUB	35	0,158	-0,028	0,072	-0,513
SUB	36	0,923	0,674	0,618	-1,091

APPENDIX J2: EXPERIMENTAL GROUP'S MEAN RATINGS OF THE ENGLISH ITEMS, SORTED BY ITEM NUMBER AND CONDITIONS.

ISLAND	ITEM	NO-ISLAND SHORT	NO-ISLAND LONG	ISLAND SHORT	ISLAND LONG
WH	1	0,266	0,318	0,115	-0,183
WH	2	0,597	0,200	-0,590	-0,229
WH	3	0,473	-0,504	0,352	-0,472
WH	4	0,362	0,643	0,280	-0,674
WH	5	0,686	0,056	0,822	-0,276
WH	6	0,051	-0,018	-0,340	-0,388
WH	7	0,612	-0,381	0,331	-0,489
WH	8	0,023	-0,163	-0,441	-0,928
WH	9	0,625	0,090	0,124	-0,575
WH	10	0,060	0,290	-0,284	-0,775
WH	11	-0,109	-0,208	0,108	-0,094
WH	12	0,138	0,179	0,511	-0,260
RC	13	0,194	-0,023	0,903	-0,511
RC	14	1,213	-0,279	0,755	-0,563
RC	15	0,966	-0,237	1,030	-0,663
RC	16	1,002	0,391	0,326	-0,543
RC	17	0,742	-0,116	1,133	-0,317
RC	18	0,606	0,170	0,415	-0,562
RC	19	0,488	0,207	0,515	-0,265
RC	20	0,848	0,106	0,640	0,087

RC	21	0,712	-0,173	0,881	-0,137
RC	22	0,846	-0,080	0,869	-0,154
RC	23	0,903	0,235	0,095	-0,185
RC	24	0,935	-0,002	0,433	-0,550
SUB	25	0,432	-0,320	-0,327	-0,738
SUB	26	0,045	-0,127	0,262	-0,344
SUB	27	0,348	-0,321	0,024	-0,975
SUB	28	0,182	-0,406	0,453	-0,311
SUB	29	0,466	0,684	0,929	-0,108
SUB	30	0,248	0,390	-0,184	-0,405
SUB	31	0,715	0,514	0,104	-0,088
SUB	32	0,309	0,033	1,019	-0,262
SUB	33	-0,023	0,379	0,108	0,083
SUB	34	0,380	-0,941	0,134	-0,848
SUB	35	0,012	0,211	0,473	-0,130
SUB	36	0,337	-0,071	-0,288	-0,783

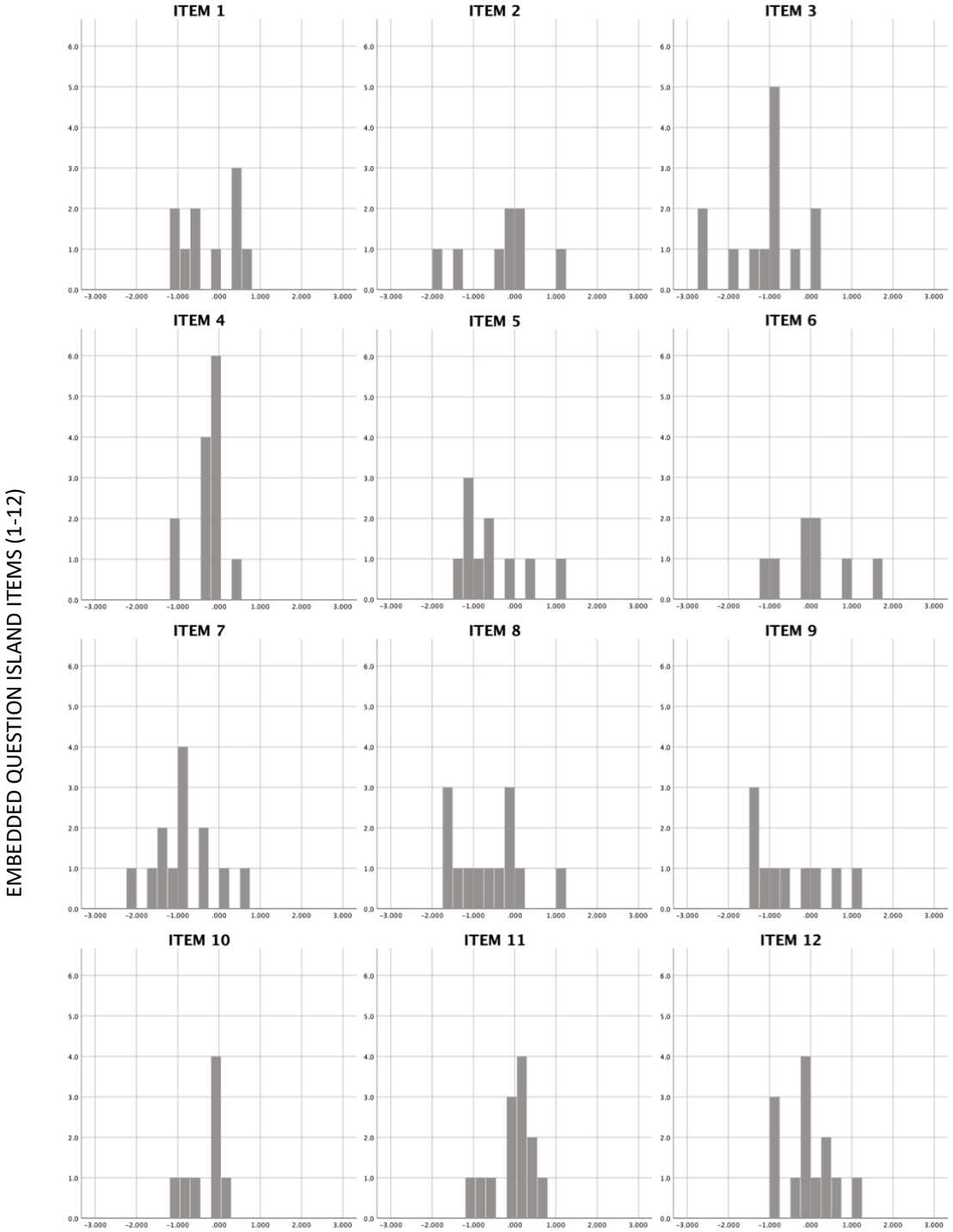
APPENDIX J3: EXPERIMENTAL GROUP'S MEAN RATINGS OF THE NORWEGIAN ITEMS, SORTED BY ITEM NUMBER AND CONDITIONS.

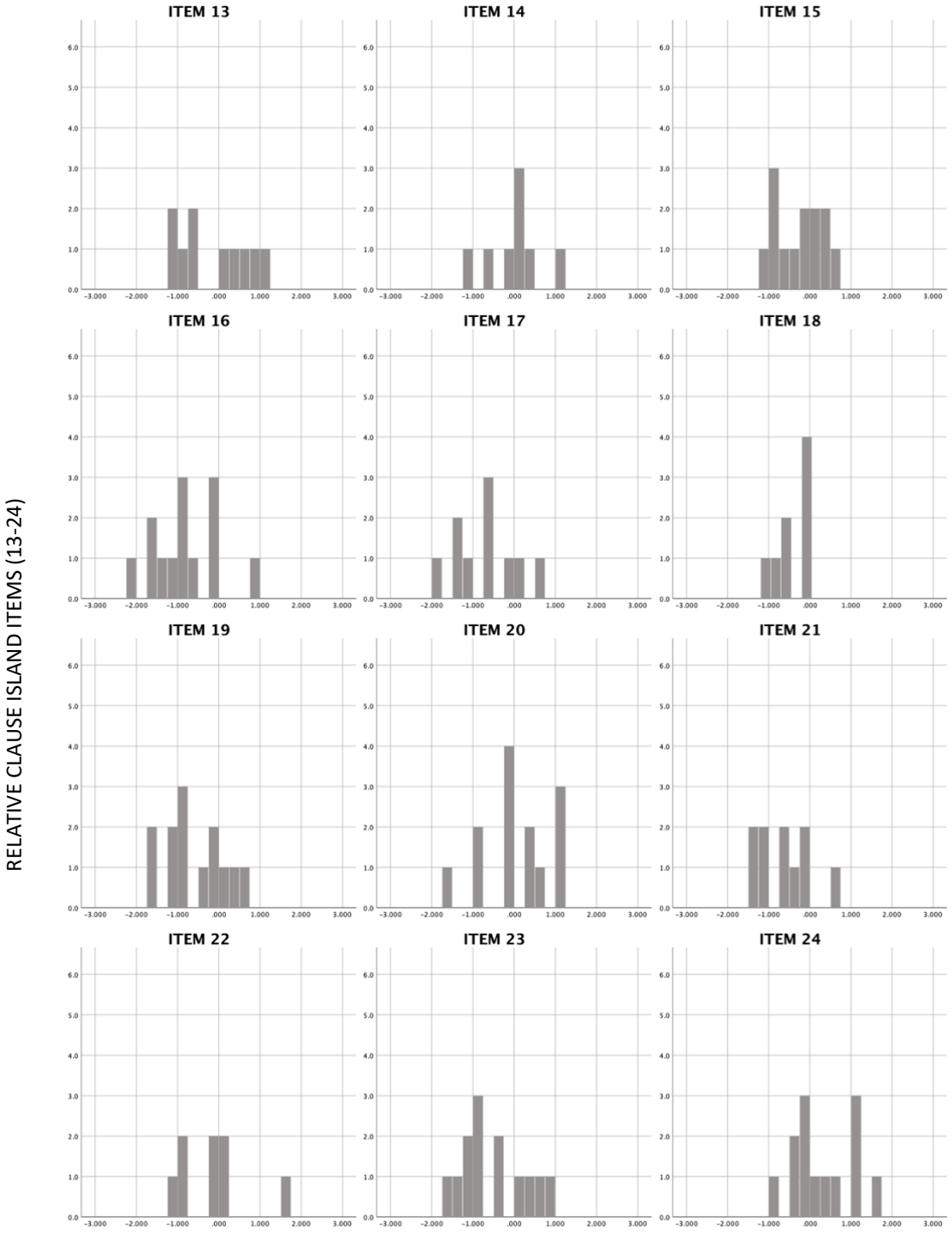
ISLAND	ITEM	NO-ISLAND SHORT	NO-ISLAND LONG	ISLAND SHORT	ISLAND LONG
WH	1	0,022	0,236	0,045	-0,244
WH	2	0,554	0,466	0,201	-0,328
WH	3	0,376	-0,322	-0,174	-1,084
WH	4	-0,234	0,058	-0,377	-0,294
WH	5	0,295	0,268	0,511	-0,545
WH	6	0,233	0,539	0,649	0,069
WH	7	-0,007	-0,383	-0,051	-0,837
WH	8	0,282	-0,090	0,166	-0,643
WH	9	0,443	0,208	0,711	-0,507
WH	10	0,088	0,333	0,214	-0,362
WH	11	0,306	0,313	0,579	-0,040
WH	12	0,391	-0,170	0,177	-0,072
RC	13	0,091	-0,095	0,788	-0,103
RC	14	1,312	0,285	0,527	-0,014
RC	15	0,734	-0,215	1,349	-0,233
RC	16	0,978	-0,446	0,967	-0,823
RC	17	1,360	0,363	1,125	-0,708
RC	18	1,205	0,700	0,959	-0,449
RC	19	1,130	0,073	0,885	-0,580
RC	20	0,702	0,146	1,239	0,079
RC	21	0,296	0,050	0,159	-0,641

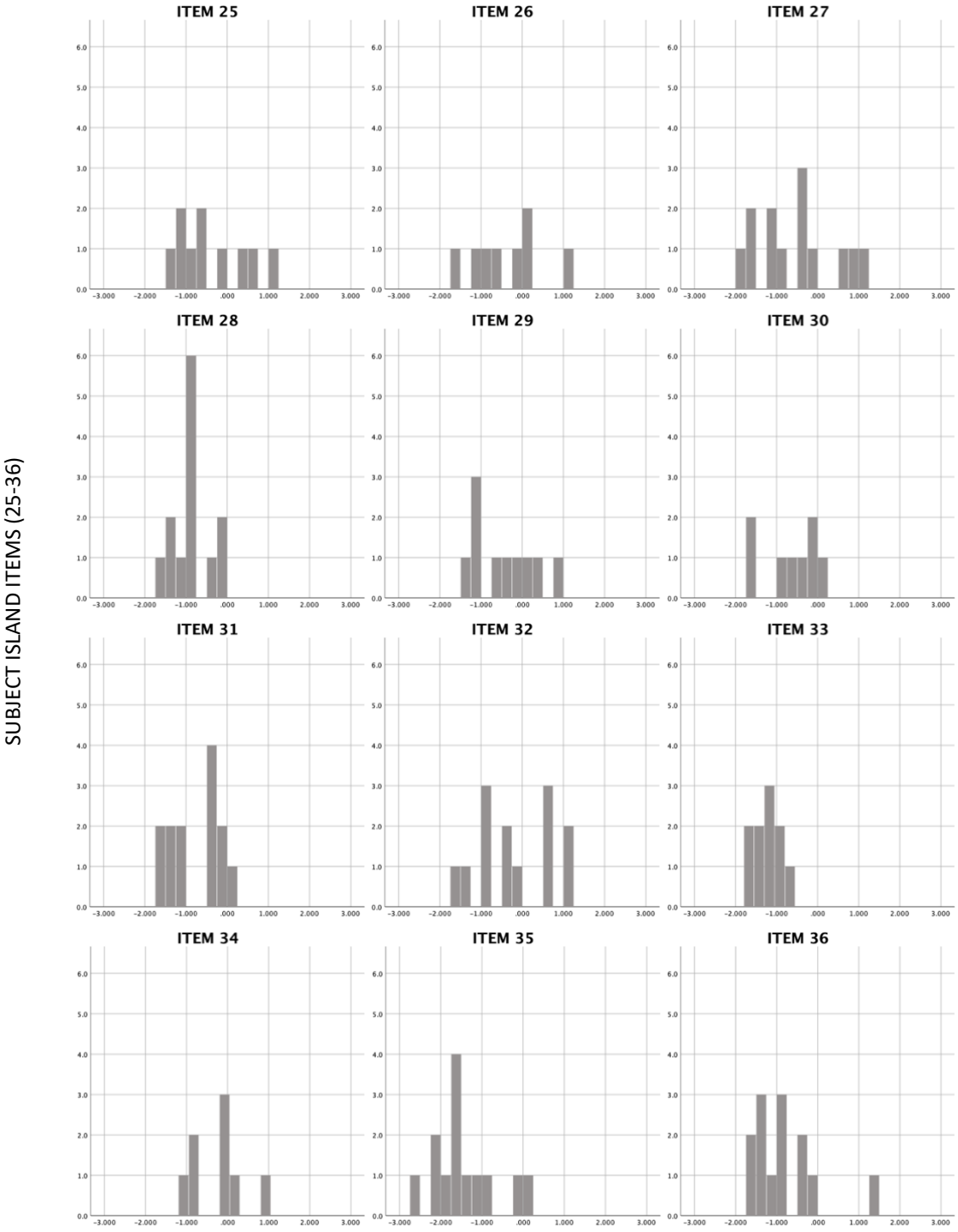
RC	22	0,842	-0,106	0,555	-0,147
RC	23	0,744	0,401	0,700	-0,502
RC	24	0,985	-0,366	1,144	0,291
SUB	25	0,302	-0,232	0,970	-0,402
SUB	26	0,563	-0,260	0,623	-0,384
SUB	27	0,307	-0,736	0,657	-0,518
SUB	28	0,012	-0,101	0,159	-0,879
SUB	29	0,504	0,543	0,488	-0,422
SUB	30	0,246	-0,425	0,823	-0,674
SUB	31	-0,499	0,330	-0,105	-0,720
SUB	32	1,001	0,214	0,524	-0,185
SUB	33	0,028	-0,224	0,286	-1,206
SUB	34	1,042	-0,467	0,145	-0,254
SUB	35	0,317	-0,018	0,794	-1,428
SUB	36	0,804	0,375	0,696	-0,806

APPENDIX K: HISTOGRAM OF Z-SCORED RATINGS OF NORWEGIAN ISLAND-VIOLATING SENTENCES BY ITEMS.

Note: Y-axis displays number of ratings and range from 0-11, X-axis displays the z-scored rating and range from -3 to 3.




ITEM 13
ITEM 14
ITEM 15
ITEM 16
ITEM 17
ITEM 18
ITEM 19
ITEM 20
ITEM 21
ITEM 22
ITEM 23
ITEM 24
RELATIVE CLAUSE ISLAND ITEMS (13-24)
Z-SCORED RATING


ITEM 25
ITEM 26
ITEM 27
ITEM 28
ITEM 29
ITEM 30
ITEM 31
ITEM 32
ITEM 33
ITEM 34
ITEM 35
ITEM 36
SUBJECT ISLAND ITEMS (25-36)
Z-SCORED RATING

Line Bosnes-Askim

L1 Transfer of Island Constraints

NTNU
Norwegian University of
Science and Technology